BEYOND PERCEPTION

CORRESPONDENCES WITH TIM INGOLD'S WORK

Edited by
Caroline Gatt and Jan Peter Laurens Loovers

Beyond Perception

This book showcases the way a range of scholars have engaged with Tim Ingold's opus since the publication of his ground-breaking *The Perception of the Environment* in 2000. Ingold's work has become key for a variety of disciplines ranging from anthropology, archaeology, and human geography to art, architecture, design and studies of material and visual culture. As set out in *The Perception of the Environment* and subsequent publications, Ingold proposed an understanding of the world that placed sentient, remembering and imagining organisms, or inhabitants, some of them human, at the heart of an extensive field of socio-ecological relations. In this work, Ingold develops broad-ranging analyses of personhood, knowledge and skills, among many other topics. This volume sets out to synthesize critical scholarship drawing on Ingold's work, to lay out its principles, methods and results, and to demonstrate its contribution to reshaping both contemporary anthropology and wider intellectual terrains. By bringing together chapters from a variety of scholars, all critically furthering Ingold's proposals, the book advances a paradigm change occurring in various academic disciplines from "fixist" to "emergence" onto/epistemologies.

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Agustín Fuentes is an anthropologist at Princeton University (USA). His research focuses on the biosocial, delving into the entanglement of biological systems with the social and cultural lives of humans, our ancestors, and a few of the other animals with whom humanity shares close relations. From chasing monkeys in jungles and cities to exploring the lives of our evolutionary ancestors, to examining human health, behaviour, and diversity across the globe, Professor Fuentes is interested in both the big questions and the small details of what makes humans and our close relations tick. Earning his BA/BS in Anthropology and Zoology and his MA and PhD in Anthropology from UC Berkeley, he has conducted research across four continents, multiple species, and 2 million years of human history. His current projects include exploring cooperation, creativity, and belief in human evolution, multispecies anthropologies, evolutionary theory and processes, and engaging race and racism. Fuentes is an active public scientist, a well-known blogger, lecturer, tweeter, and an explorer for National Geographic. Fuentes was recently awarded the Inaugural Communication & Outreach Award from the American Association of Physical Anthropologists, the President's Award from the American Anthropological Association, and elected to the American Academy of Arts and Sciences.

Caroline Gatt is a Senior Research Fellow at the Department of Cultural Anthropology and European Ethnology, University of Graz (Austria) and Co-PI on the project '(Musical) Improvisation and Ethics' funded by the Austrian Science Fund. She is an anthropologist and performer, and her research concerns collaborative anthropology, environmentalism, laboratory theatre, ontological politics, ethical self-formation and epistemic coloniality. Her recent publications include "Ethical Striving with other-than-humans in Contemporary Improvised Music" (*Suomen Antropologi* 2025), "Who knows? A speculative fabulation about knowledge politics at university and ecological subjectivities" (with Lydia Arantes, Cadernos de Arte e Antropologia 2024), and *An Ethnography of Global Environmentalism: Becoming Friends of the Earth (2018)*. She was editor of the special section of *American Anthropologist* 'Knowing by Singing' (2022 with Valeria Lembo), TITG Chapbooks (2021 with Joss Allen), the special

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Paolo Gruppuso is an anthropologist researching water landscapes, nature conservation, and more-than-human socialities at the intersection of social anthropology and the environmental humanities. He holds a PhD from the University of Aberdeen (2016). His research explores wetland practices and imaginaries as much as urban ecologies and Anthropocene landscapes across Europe. He currently holds a DFG Eigene Stelle research grant for the project 'Rethinking Wetlands (ReWet): An Environmental Anthropology', based at the Rachel Carson Center for Environment and Society (LMU).

Wendy Gunn is an Associate Professor of Collaborative Design in Design Engineering at Aalborg University (Denmark). She has cross-disciplinary expertise in IT product design, design engineering, architecture and anthropology and significant experience in conducting multidisciplinary and interdisciplinary research as an integral member of collaborative design teams involving both private and public sectors. Dr Gunn has developed research insights into how collaborative design processes work in design engineering as well as how anthropology can play an important role in design, whether in healthcare settings or architecture. She has an international research profile in Design Anthropology and has played a leading role in this field including contributing towards building a research agenda for the emerging field.

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research team at the University of Melbourne. She is currently Joint Chair of the Association of Social Anthropologists of the UK.

Rachel J. Harkness is a Lecturer in Design Ecologies at Edinburgh College of Art, the University of Edinburgh (UK), where she teaches socio-ecological design and directs a degree programme called 'Design for Change'. In her work, she is interested in how people (can) make manifest their ecological designs for living. Her creative anthropological research tends to centre upon environmental relations, politics, values, and the topics of building, making and materials, learning-through-doing, and the senses. It resides at the intersection of social anthropology, environmental humanities, political ecology and the arts, and it involves playful experiment and participation in artistic and designerly practices of making. Rachel has been much influenced and inspired by Tim Ingold and has worked with him on the interdisciplinary arts and anthropology research project Knowing from the Inside (2013–2016), as well as being supervised by him for her PhD research on off-grid eco-building and dwelling (2005–2009).

Marc Higgin is an anthropologist working at the Laboratoire CRESSON (UMR AAU) in Grenoble (France). His research revolves around the everyday practices of social life and our relations with the environment, with animals, with material culture and its wastes. He works at the intersection between anthropology, the arts and architecture, to experiment with ways of inhabiting the world otherwise.

Anna Ingold studied English literature and Finno-Ugric languages at the University of Turku, Finland, and collaborated with Tim Ingold in ethnographic fieldwork in Lapland, in 1971–2 and 1979–80. She was involved in setting up and organising the Finnish School in Manchester, for which she also served as a teacher, and has carried out occasional translation and proofreading work. In Aberdeen, she has played a key role in providing pastoral support, especially for new staff and postgraduate students. Her first volume of memoirs, *Pathways to the Past*, was published in 2021.

Tim Ingold is Emeritus Professor at the Department of Anthropology, University of Aberdeen (UK). His theoretical interests include ecological approaches in anthropology and psychology; comparative anthropology of hunter-gatherer and pastoral societies; human-animal relations; theories of evolution in anthropology, biology and history; relations between biological, psychological and anthropological approaches to culture and social life; environmental perception; language, technology and skilled practice; anthropology, archaeology, art and architecture; the anthropology of lines and line-making. He has written numerous books and articles. His most recent book is *The Rise and Fall of Generation Now* (2024).

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Jan Peter Laurens Loovers is an independent researcher and curator based in Aberdeen, UK. He most recently worked on the CINUK project *Inuksiutit: Inuit Food Sovereignty in Nunavut*. His research interests are in the Arctic, colonialism and decolonization, climate change, ecology, education, energy transition, environmental, and social justice, filmmaking, food sovereignty, human and non-human relations, imperialism, Indigenous Peoples, museums, and philosophy. He has been a Project Curator for The Arctic: Culture and Climate exhibition at The British Museum and an External Cataloguer of Arctic collections for the Sainsbury Centre for Visual Arts. His most recent publications include the monograph *Reading Life with Gwich'in* (Routledge, 2019) and the co-edited books *Arctic: culture and climate* (with A. Lincoln & J. Cooper, Thames & Hudson in collaboration with the British Museum, 2020) and *Sentient Entanglements and Ruptures in Amazon, Andes and Arctic* (with M. Bolton, Brill, 2023).

John Loewenthal is the Education and Training Officer for the Centre for Anthropology and Mental Health Research in Action (CAMHRA) at SOAS, University of London, and a Research Associate in the Department of Anthropology and Sociology at SOAS, conducting the project, 'Anthropology, talking therapy, and education: Intersections between theory and practice'. Elsewhere, he teaches short courses in anthropology to mature students at the University of Oxford. John is a Co-Convenor of the European Network for Psychological Anthropology (EASA) and a practising psychotherapeutic counsellor. He has previously taught and researched at Keele University, The University of Edinburgh, Oxford Brookes University, New York University, and the Centre for Research and Advanced Studies (CINVESTAV) (Mexico).

Paolo Maccagno is an anthropologist (PhD) and Feldenkrais practitioner ®. After 15 years as an architect, he took an independent path for developing experimental projects between art, anthropology, and education (in academic and non-academic contexts) inspired by his interest in the notion of limit and his passion for running marathons. He works with vulnerable people in educational as well as in marginal contexts such as prison. He has been part of the ESRC-Care in funerals research project as a Research Fellow at the University of Aberdeen and he is now an Associate Member of The Scottish Centre for Crime and Justice Research. In March 2023, he founded Runforever a Scottish Charity promoting educational projects (based on marathon running and the Feldenkrais method®) fostering paths for humanizing health care within the prison environment and the community.

Erin Manning is a professor in the Faculty of Fine Arts at Concordia University (Montreal, Canada). She is also the founder of SenseLab (www.senselab.ca), a laboratory that explores the intersections between art practice and philosophy through the matrix of the sensing body in movement. Current art projects are focused on the concept of minor gestures in relation to colour and movement. Art exhibitions include the Sydney and Moscow Biennales, Glasshouse (New York), Vancouver Art Museum, McCord Museum (Montreal), House of World Cultures (Berlin), and Galateca Gallery (Bucarest). Publications include For a Pragmatics of the Useless (Duke UP, forthcoming), The Minor Gesture (Duke UP, 2016), Always More Than One: Individuation's Dance (Duke UP, 2013), Relationscapes: Movement, Art, Philosophy (Cambridge, Mass.: MIT Press, 2009) and, with Brian Massumi, Thought in the Act: Passages in the Ecology of Experience (Minnesota UP, 2014).

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Sarah Pink is a Laureate Professor and Director of the Emerging Technologies Lab and FUTURES Hub at Monash University. She is a Fellow of the Academy of the Social Sciences in Australia and has Honorary Doctorates from both Halmstad and Malmo Universities. Sarah is an award-winning futures anthropologist and documentary filmmaker. Her recent publications include *Emerging Technologies/Life at the Edge of the Future* (2023), and co-authored *Design Ethnography* (2022) and *Can We Trust Technology?* (2025), as well as her documentaries *Smart Homes for Seniors* (2021) and *Digital Energy Futures* (2022).

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Cristián Simonetti is Associate Professor in Anthropology at the Pontificia Universidad Católica de Chile (Chile). His work has concentrated on how bodily gestures and environmental forces relate to notions of time in science. He is the author of *Sentient Conceptualisations. Feeling for Time in the Sciences of the Past* (Routledge, 2018) and co-editor of *Surfaces: Transformations of Body, Materials and Earth* (Routledge, 2020, with Mike Anusas). His latest research has involved collaborations across the sciences, arts and humanities to explore the environmental properties of materials relevant to the Anthropocene. Significant results of this work include a special issue of the journal *Theory, Culture & Society*, entitled 'Solid Fluids. New Approaches to Materials and Meaning' (2022, edited with Tim Ingold) and a forthcoming volume, entitled *Urban Liquefaction. Rethinking the Relationship Between Land and Sea* (Punctum, 2025, edited with Michel Lussault and Tim Ingold).

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Norman Wirzba is the Gilbert T Rowe Distinguished Professor of Theology and Director of Research in the Office of Climate and Sustainability at Duke University (USA). He is the author of numerous books, including *Love's Braided Dance: Hope in a Time of Crisis*, *This Sacred Life: Humanity's Place in a Wounded World, Agrarian Spirit: Cultivating Faith, Community, and the Land* and *Food and Faith: A Theology of Eating*. He was the director of a multi-year, Henry Luce-Foundation-funded project entitled 'Facing the Anthropocene'. In this project, housed at Duke's Kenan Institute for Ethics (USA), he worked with an international team of scholars (including Tim Ingold) to rethink several academic disciplines in light of challenges like climate change, food insecurity, biotechnology and genetic engineering, artificial intelligence, species extinction, and the built environment. He pursues research at the intersections of theology, philosophy, and agrarian and environmental studies.

Foreword
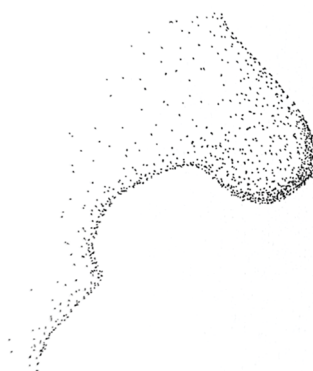
I was honoured when the editors, Caroline Gatt and Peter Loovers, invited me to contribute a Foreword to this volume, and even more touched by their suggestion that my wife Anna, who has been a source of support, inspiration and guidance throughout my anthropological career, might also contribute to it. After some discussion, we decided that the best and most spontaneous way to present this would be in the form of a conversation among all four of us, Caroline, Peter, Anna and myself. Accordingly, we agreed to meet online, for an hour-long recorded conversation, on the afternoon of 16th February 2023. What follows is not a word-for-word transcription, as this would have been far too long, but an edited version, minus all the repetition and deviation that typically accompanies lively discussion. I hope that it nevertheless conveys both the essence and the flavour of our conversation. I have divided it into five parts, but have also included one intermission of my own, between Parts II and III, which replaces a protracted segment of the conversation touching upon sensitive topics that would otherwise have called for a much lengthier exchange. We identify ourselves below by our initials: Caroline is CG, Peter PL, Anna AI and Tim TI.

<div align="right">Tim Ingold</div>

Part I

CG, to AI: The overall impression I get on reading Tim's work is of a world which is continually forming as things go along together. Tim has always spoken of your importance to his life. How do you see things that are important to you coming out in what he writes and talks about?

AI: Nothing comes out at all! Maybe we've been together so long that these things are all tangled up. We probably talk about words more than ideas. I'm not a philosophical person. I'm often reminded of a passage from the book *Salka Valka*, by the Icelandic author Halldór Laxness, first published in 1931. Salka was a poor girl but of strong character, who worked in the fishing industry. The story tells of how a childhood friend, sent to Denmark for his education, returned with his head full of grandiose Marxist ideals. Salka upbraids him:

> Is it still your view even today that we ordinary people here in this village should live on castles in the air? I will not deny that many things here in the village could be better, but when all is said and done, life is salted fish, before all else, and not pipe dreams.[1]

Likewise, I remind Tim that whatever grand ideas he might have, this ordinary life has still to be lived and coped with, day after day.

TI: In fact, one of the first articles I ever wrote – which has virtually disappeared without a trace – used this quotation as its epigram.[2] But that's it! Anna keeps me grounded. If I waffle on with my head in the clouds, she straightaway pulls me back down to earth.

CG, to TI: In the progression of your articles and books, this grounding has become ever more apparent. Anthropology is for life, for living.

TI: I do believe that our thinking needs to be closely tied to very concrete realities. Otherwise, we would simply take off. I'm continually being pulled back down. If I write things and Anna reads them, as she usually does, then if there's something too abstract or obscure, we can have a discussion about words, about how to make things clearer.

AI: … and more readable. That's what you've been aiming for – that your writing should be readable and comprehensible, not so obscure that no one can make sense of it.

TI: Anna is a tough critic. If something makes no sense she will say so, and I'll know it has to be fixed. It's no good going on and on about some grand theory if it is completely disconnected from anything anyone might ordinarily experience in life.

CG: Have you had more time for this, since the children left home?

AI: The watershed moment was moving from Manchester to Aberdeen, in 1999. By then our three sons had left home. There was just Suzey, who was 5 years old. She went on to have a Scottish education, whereas all the boys had an English one: that was a clear dividing line. But then you, Tim, had to build a department, and it took a while to reach the stage when there were colleagues, students, and postgraduates.

TI: Suzey was pretty inspirational. I remember an occasion before we moved to Aberdeen, and when Suzey was about to arrive. I was sitting in a Faculty meeting, surrounded by these (mostly) men in their late 40s and 50s, all greying around the edges, looking a bit bedraggled. They were droning on about the regulations for something or other. And I said to myself, 'Thank goodness; I've been rescued in the nick of time'.

AI: And thrown back in at the deep end!

CG: Suzey came a while after the other three were born, right?

AI: Yes, 13 years later. And Tim was Head of Department then.

TI: Everyone in Manchester had babies in 1994. We did, and two of my staff did. They came to see me and said something like: 'I don't know how to put this to you, Tim, but I'm expecting a baby'. And I said, 'Don't worry, we are too'. All these staff babies were unplanned. But two of our research students had babies that year as well, and both were planned!

AI: That was the attitude, then, to female colleagues who fell pregnant: that's perfectly fine, and you'll get your maternity leave.

CG: Then, when you started in Aberdeen, there were loads of babies in the Department.

TI: That was the best thing about it. If there are lots of babies, you know that all is well.

Part II

CG: When I arrived in Aberdeen, you both made me feel as if I was coming into a big family. There were around twenty PhD students then, and we all felt the same. We had so many conversations, seminars, and supervision sessions. But we didn't always agree. What do you feel about that? How did it affect your thinking?

TI: Well, we wouldn't be able to do much thinking if we were always in agreement! The basic principle is one I learned from Piera Porsanger, our closest neighbour during my doctoral fieldwork in Lapland. Piera was a hopeless reindeer herder and had lost most of his animals. He had a large family, with many children, and they were very poor. But he was a real philosopher. The principle he taught me was that *matters quarrel, people don't.*

AI: His own brother was on the other side in a big dispute over rein-
         deer pastures, but they always remained on good terms.

TI: There's a firm principle among the Sámi that you don't fight. Finns
         are rather prone to knife fights, but for the Sámi fighting is utterly
         abhorrent. You can perfectly well dispute some issue of reindeer
         herding, or of who can fish where, for example. Such disputes
         should be resolved through negotiation; they don't affect personal
         relationships. That's also a principle I learned in Manchester,
         where the Department of Social Anthropology had a reputation
         for its ferocious seminar, in which the poor invited speaker would
         literally be torn apart: indeed, it went far too far in that direction.
         But then we would all go to the pub afterwards, and any hard
         feelings would quickly evaporate. The principle was that in a sem-
         inar context, you can argue until you are blue in the face, about
         anything you like, on the assumption that it has no bearing what-
         soever on your respect for others as *people*. I soon learned that this
         is a fundamental principle of academic life. You notice it especially
         when you visit other countries where this principle is not so well
         established. In the Nordic countries, for example, you have to be
         very careful because if you criticise somebody's ideas, they might
         take it personally. It can be difficult. In my experience, the people
         with whom I have the most intense arguments, be it over matters
         of anthropology or anything else, are often those for whom I have
         the greatest respect. I have tried to instil this same principle in our
         Department in Aberdeen so that matters of common anthropo-
         logical concern can be debated in a respectful atmosphere.

AI: You would never think of someone you disagree with as a nasty
         person.

CG: A safe place to be critical?

TI: Absolutely, though I am not sure that 'safe' is the right word.
         Rather, *respectful*. Finding a safe place sounds like retreating into
         a protected enclave where everyone is on the same side. That's
         not what I mean. I mean a place where basic values of respect
         are taken as read, where they don't have continually to be re-
         established or restated.

CG: Which is why you put up with me, with my critical comments.

TI: I found supervisions with you occasionally terrifying because you
         had always read more than I had.

CG: That is absolutely not true!

TI: But you were gracious enough to accept that maybe I could be
         reformed, or at least that if I read a bit more, I might be able to pre-
         sent my case more persuasively. I have learned my lesson. Indeed,
         I've probably learned more from students – not just research
         students but undergraduates as well – than from anyone else.

AI: Especially compared with your teachers from way back.

TI:	Certainly, more than from them!
AI:	It's been an ongoing process, over the years.
CG:	Say more about that, Anna. What do you mean by 'ongoing process'?
AI:	When you think about it, over forty years of teaching, you come across a great many people. They come and go, but everyone learns from everyone else.

Intermission

I went on to remark that, on one or two occasions at most, I had been upset by criticisms made behind my back, not just of my ideas but of me personally. This ignited a discussion about who can say what about whom, and about what would happen should someone feel aggrieved by something I might have said or written but be afraid to approach me in person. These issues are difficult and could not adequately be addressed within the space of a short conversation. But in retrospect, I think it would be helpful to clarify what looks, on the surface, like a blatant contradiction in my own approach to life in academia. On the one hand, I argue that academic debate allows us to face off against one another without compromising the cordiality of interpersonal relations. Yet on the other hand, I believe that as scholars we should put our heart and soul into what we say or write, rather than feigning a faux detachment, as though our words had nothing to do with us personally. The underlying source of the problem, I believe, lies in the tendency, deeply embedded in the traditionally male-dominated academic establishment – such as the one I found when I joined the Social Anthropology Department in Manchester – to model academic controversy as an elite sport. In the sporting contest, opponents can battle it out on the court, while remaining the greatest of friends off it. But we belittle the life of scholarship by reducing it thus to game-playing. We have to accept that the views of our interlocutors, however disagreeable they may seem to us, are sincerely held and deserve to be treated with respect. Unlike on the field of play, however, difference does not imply division. It doesn't mean taking sides. It rather means adding to the conversation by bringing to the table a point of view of one's own. In real life as in scholarship, as I've argued elsewhere, difference is not what divides us. It is the glue that holds us together.[3]

Part III

PL:	I would like to pick up on this idea of respectful conversations. In debates to which you have contributed, do you feel you are sometimes misunderstood academically, if not personally?
TI:	Misunderstandings sometimes arise, but they can usually be put right with a bit more discussion. What troubles me more is deliberate distortion, where my work is read selectively in order

to create a crude caricature of my position in order to knock it down. This has happened now and again, and it is hard to know how to deal with it. A common tactic of distortion is selective quotation, extracting lines from this publication or that, and stringing them together to make something quite different from anything I would ever say. The perpetrator can then hide behind the claim that they have only used my own words, while nevertheless presenting a complete travesty of my argument. It is common to find such tactics being used to discredit one's opponents in the rough and tumble of politics, in Parliament or the press, but it is rather shocking to find it in scholarship.

In my writing, I have always aimed for clarity and precision. Anna is very helpful here because she reads what I write, and if I've written something muddled or unclear, she will tell me, and I'll know it has to be fixed. It's important that she reads with a non-anthropological eye, which picks out things I wouldn't otherwise notice because I am too much inside the subject.

PL: You were talking earlier about fieldwork in Lapland, among Sámi people. My question for Anna is: how was it for you?

AI: Well, I spent altogether six months of the fifteen during which Tim was there: a month in September, over Christmas and at Easter, and three months in the summer. During fieldwork, we lived like everyone else. There were no luxuries. In summer, when it was hot, food didn't keep, so you could only drink milk one day a week when the mobile shop visited. Otherwise, there was only water to drink. You could eat fish, depending on the catch. It was pretty tight, but we managed!

TI: And we walked a lot.

AI: A lot of walking, and a lot of cycling, as well as skiing. We had no car, as Tim didn't have a driving licence. In wintertime, we depended on people giving us lifts by snowmobile.

PL: What were your impressions, as a Finnish person, of the Skolt Sámi community?

AI: The Skolt people had been resettled after the Second World War, in 1949, since their original homeland in the Petsamo region had been ceded to the Soviet Union. During the War, they were evacuated to southern Lapland, and during that time they missed out on many things, especially education, that might have provided opportunities later on. However, what surprised me most, as a Finnish person, was that the houses built for the Skolts in the Sevettijärvi resettlement area, where Tim was doing his fieldwork, were so very tiny. Many families were large, with lots of children, but they were forced to live in terribly cramped conditions. The only road was a dirt track, and there was no electricity or running water, except for the primary school complex

and the health centre, which had a generator for electricity and for pumping water from the lake. As a Finn, I was shocked! But then a friend, who is five years older than me, explained that in those days, Finland lacked the resources to rebuild everything in the country to the same standard. They were still having to pay war reparations to the Soviet Union, which were not completed until 1952 when the Olympic Games were held in Helsinki. Until then, national budgets were really tight. Even in the early 1970s, when we were there, the region was still suffering from poor infrastructure and a lack of educational opportunities. All that was to change, however, with the introduction of comprehensive education, which actually started in Lapland. Since then, Sámi communities in general, and the Skolt community in particular, have produced many brilliant, highly educated people. Thus, the reserves of talent were there, but local people lacked the possibilities for education that I – coming from central-southern Finland – had enjoyed. For me, this was eye-opening in many ways.

PL: The experience with the Sámi was crucial for the development of Tim's thinking. How, Anna, did it influence yours?

AI: Obviously, it makes a difference to have been there. You can see how people interact with their natural surroundings, how close it is, but I don't, otherwise, know how to put this into words. I never learned the language of the Skolt Sámi which, at that time, was still unwritten.

TI: Nor did I – not properly, anyway. In retrospect, this was a big mistake. If I could do it all over again, I would definitely put time and effort into learning the language. But in those days, it wasn't considered that important.

AI: You had to learn Finnish anyway, to read all the documentary material, reports, newspapers, and so on. The Skolts are an eastern Sámi group, very distinct from their neighbours. Many of the older people spoke Russian, and their Christianity was Orthodox rather than Lutheran.

PL: In Finland, it's a mixture?

AI: Most people in southern Finland are Lutheran, but Karelians – particularly those evacuated in the War from areas ceded to the Soviet Union – are mostly Orthodox. My own roots, however, are in southwestern Finland, in Ostrobothnia, which is very Lutheran, very Protestant.

Part IV

PL: Tim, you have dedicated much of your work to Anna. In what ways has your life with Anna, her Finnish background, and the groundedness of her philosophy of life influenced your own thinking?

TI: We've already talked about groundedness; the other thing is stability. We have a very deep relationship, based on trust. It's always been like that. This stability and trust provide a kind of cushion which makes it possible to take intellectual risks, to try out ideas even when they could fail. You can't do that if you already have a pit in your stomach because of anxiety about all the other things in life. And, of course, when the children were young, that added another layer. Maybe 'stability' is the wrong word. Perhaps it should be 'security', or something like that…

AI: I know what you mean…

TI: You do indeed. I would not have been able to think and write as I have without it. It often comes across as taking for granted the domestic side of things, our marriage and the family. It has certainly come across to Anna like that, many times, and she has frequently admonished me on that score, with good reason. That's what it comes down to, because if everything is alright on that side, then one can withstand the churn in one's own mind generated by the ferment of ideas. This is also why the cottage in Finland is such a wonderful place to write: it's very peaceful, there's no internet, no interruptions, no worries coming in from outside. The surroundings are beautiful, and one can be completely at peace with everything *except* whatever one is working on, which induces nothing but turmoil. The mind can withstand the turmoil of intensive thought if it is at peace with everything else.

CG: Like an anchor…

TI: Yes, like an anchor. Doubtless, others would argue to the contrary. Only the other night, we were watching a TV programme about Dylan Thomas, whose domestic life was a complete mess. It was precisely *because* of this mess, say the critics, that Thomas could write such great poetry. The assumption, in other words, is that the spark of creativity can only be lit by personal crisis. But that's not how it is for me.

AI: Perhaps this has something to do with the northern temperament. Readers of my own writing have asked me why I don't give away my feelings. I tell them to read between the lines. But you know for yourselves, Caroline and Peter, that bringing up children is a process in which you learn all the time. You start from zero, with no idea of how to deal with a baby, let alone a toddler. But it's a process that brings everyone in the family together, and you all grow in confidence at the same time. Children need that parental confidence to become confident themselves.

TI: But it's a Finnish thing too. Finns are very grounded people.

AI: In Finnish it's called *sisu*, meaning 'guts', or 'determination'…

TI: There's determination, yes, but also pragmatism. In my experience, Finnish people are exceptionally pragmatic and down-to-earth,

yet also a bit quirky, and sometimes downright crazy. That's because, in Finland, even people who have high-flying academic or professional careers are only a generation or two from parents or grandparents who were farmers. If you are a farmer, you just have to manage – looking after the cows, working in the forest in winter, and so on. You have to improvise to get by and to cope with sometimes hostile environmental conditions. It means working things out, in a practical way, as you go along. This is a peculiarly Finnish thing. It's a quality I admire, and to the extent that I have also absorbed it, it must affect the way I think and write, the way I do my anthropology.

Part V

PL: Here's my last question, then. Coming back to Anna, what is your understanding of Tim's anthropological or philosophical development, from *The Perception of the Environment* onwards? How has Tim's work impacted your thinking? How does it play in your lives?

AI: I am not a theoretical person! I can't say that life is much affected by what the work is about, but it has brought with it the opportunity to meet a great many really interesting people, not to mention all the research students who have come and gone over the years. I miss those times when we had a houseful of friends, colleagues and students, for a party or after a seminar. I've always enjoyed meeting people from different backgrounds; that's been the most important thing for me. I have no theories about life as such.

TI: But in a way you do…

AI: Maybe, but I can't get them into words. Somehow, one has to keep the everyday order going. There has to be a certain routine. And then all sorts of nice and sometimes surprising things happen in between.

TI: Hmm. Some things are just not stated. There are some deep philosophical things that are better left unsaid, although you know full well that they are there. I suppose that part of my job is to try to find words for them. That's what I do when I write. But I find it more and more difficult.

CG: That's your craft, right?

TI: Yes, that's what I try to do. And Anna has always been reading what I've written.

AI: Proof-reading…

TI: She's incredible. Anna has eyes like a hawk. They can zoom in on a slip or a typographic error with the same precision as on a tiny spot of dirt on my shirt or tie when I see nothing at all. But when

you, Anna, read *The Perception of the Environment*, you said the best thing ever. It was the first time, you said, that you had read something of mine in which you could recognise my own voice – that only I, and no one else, could have written it.

AI: It had already been developing for quite a while…

TI: Over the ten years previously, yes, during which most of the essays making up the book were written. Nevertheless, that was a milestone for me, because I could at last say to myself, 'OK, now I know what my own voice *is*; I have confirmation that it is indeed mine. From now on, I'm going to write in the way I want, in the way that seems right to me, rather than having to conform to academic norms and standards governing how one is *supposed* to write'.

CG: For you, writing is a skill, a craft. Anna, did this inspire you to write your memoirs, or have you always wanted to do it?

AI: It was partly a lockdown project. I thought I needed to write something for the children and grandchildren that tells of what it was like to grow up in Finland. It was all so very different from anything they had known. That's why I wrote it in English, but Suzey helped with the editing, as she is already experienced in this kind of thing.

TI: You had been meaning to do this for years.

AI: Yes, but when we were stuck in the house, this was the time to be doing something like that.

TI: We've now got Volume 1, but we're still waiting for Volumes 2 and 3. You need to get going on those!

Aberdeen, 13 March 2023.

Notes

1 Halldór Laxness, *Salka Valka*, translated by Philip Roughton, Penguin Vintage Classics 2022, page 360.

2 Tim Ingold, 1974, 'Entrepreneur and protagonist: two faces of a political career', *Journal of Peace Research* 11: 179–88.

3 See Tim Ingold, *Anthropology*: Why it Matters, Cambridge: Polity, 2018, page 45.

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Beyond perception

Tim Ingold, anthropology and the world

Caroline Gatt and Jan Peter Laurens Loovers
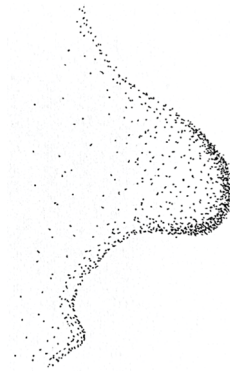
25 years have passed since Tim Ingold published his ground-breaking *The Perception of the Environment* (TPE) in 2000. Arguably, TPE has become a classic and has led to Ingold being the fourth most cited author in Anthropology according to Google Scholar. In effect, he is the most cited living anthropologist, since Clifford Geertz, Emile Durkheim and Mary Douglas, are now all late. TPE is Ingold's most cited book by far, with citations in a wide variety of disciplines, including anthropology, archaeology, human geography, ecology and environmental studies, biology, theology, art, artistic research, design, studies of material and visual culture, and others.

On the one hand, we are sceptical about this portrayal of impact, as Ingold himself would be, and we cite these widely-consumed data somewhat tongue-in-cheek. They are among the illusions of our times (Ingold 2021: 10); moreover, self-aggrandizement is the hallmark of the sorts of academic discourses we also critique (Pirrie 2018). Beyond the fact that influence cannot be measured in quantitative terms, it is also important to bear in mind that citations of Ingold's work include debates, heated disagreements, as well as creative developments. On the other hand, what Ingold has achieved is truly

inspiring: a comprehensive and thoroughly consistent proposal that, in effect, resolves the old chestnut of nature versus culture.

In this introduction, we review Ingold's key conceptual achievements, as well as critiques of his work, in relation to the debates in which his work participated, both in anthropology and beyond and, importantly, the intellectual movement they have made possible. Therefore, as well as celebrating his ideas, this volume aims to show how Ingold's work has been *generative* for other scholars. Each chapter in this book engages with Ingold's work in ways relevant to the research of its author and takes it in new directions.

Ingold's oeuvre, first comprehensively set out in TPE, offers a renewed basis for exploring the existential conditions of being in a collectively inhabited world. TPE was a reaction against and a departure from, the investment of conventional academic science in dualities such as body versus mind and nature versus society. Ingold instead placed sentient organisms, some of them human, at the heart of an extensive and unbounded field of constitutive relations. He presented this paradigm within broad-ranging analyses of how it would affect understandings of personhood, knowledge, time, tools, imagination, perception and skill, among many other things. Ingold's subsequent writings have expanded on and refined the arguments set out in TPE, with the publication of *Lines* (2007a), *Being Alive* (2011), *Making* (2013), *The Life of Lines* (2015), *Anthropology as/and Education* (2018a), *Anthropology: Why It Matters* (2018c), *Correspondences* (2020), *Imagining for Real* (2022a), and *The Rise and Fall of Generation Now* (2024), as well as several edited books including *Redrawing Anthropology* (2011b), *Biosocial Becomings* (2013, with Gísli Pálsson), *Making and Growing* (2014, with Elizabeth Hallam), and *Knowing from the Inside* (2022b).

Ingold's body of work was an early initiator inspiring a radical shift in anthropology; from a discipline studying human cultural diversity with an implicitly relativist stance to one that is staunchly participating in addressing issues of ontological and epistemological politics. This shift is part of a wider intellectual movement both to free academic disciplines from the rigid division between natural sciences and the humanities, and to face up to anthropology's ongoing perpetuation of coloniality. We suggest that Ingold's work is key to what may be a more fundamental transition, across a broad spectrum of academic disciplines, towards ontologies of emergence. We return to this later. Our immediate point is that Ingold's ideas have given rise to ways of understanding and responding to conflict, colonial presents and pasts, and other political issues, *from a renewed perspective*. Particularly in his theorising of direct perception and the 'one world', he has equipped scholars with the tools to address matters of alterity that, until recently, were dismissed as 'culture' or 'belief', and distinct from the 'natural' or 'actual'. In addition, Ingold's emphasis on skilled practice, with its corollary that scholarly investigations need not be restricted to narrowly intellectual pursuits, has enabled experimental methods of research to flourish. Each of the chapters in this book addresses these themes in one way or another. That is why the

book is entitled *Beyond Perception:* Even though Ingold's entire oeuvre has fueled many new scholarly projects and approaches beyond his initial focus on perception, his theory of perception as part of processes of ontogenesis, as laid out in TPE, remains pivotal.

Ingold's understanding of knowing – and, within that, of the role of anthropology – is of course in tune with his vision of a world continuously coming into being through the unfolding of a field of constitutive relationships. It follows that anthropology, and scholarship more generally, cannot but participate in this process of becoming – of world-making. What distinguishes anthropology, Ingold writes, 'is that it is not a study *of* at all, but a study *with*. Anthropologists work and study *with* people. Immersed with them in an environment of joint activity, they learn to see things (or hear them, or touch them) in the ways their teachers and companions do' (2008). In this sense, the work of anthropology is a work of correspondence – of going along with others and responding to them as you go. This book is also a correspondence – with Tim Ingold's work, but also with you, the reader, with the people, materials, and skills involved in writing, editing, printing, and publishing this book, with the chains of distribution by which it came into your hands, with the system of literacy and education by which you can read it, and so forth.

Background

Like many books, our volume has a long history. It commenced with Oxford University's 'Tim Ingold Reading Group', led by Kate Fayers-Kerr, Elizabeth Rahman, and Maan Barua in 2010. At the core of their readings was TPE, and they were keen to involve Ingold's PhD students, including ourselves, in their discussions. Thanks to this, and to a symposium that Fayers-Kerr subsequently convened in Brussels in 2014, we were inspired to organize a larger exploration of Ingold's oeuvre. We, Caroline Gatt and Peter Loovers, began planning an event to be held in 2015, marking 15 years after the publication of TPE. As Gatt was then on maternity leave and struggling with a number of personal and professional issues, Loovers took up the leading role in organizing the symposium together with a number of postdoctoral fellows and doctoral students.

Entitled *Beyond Perception 15*, the symposium considered a variety of ways in which scholars had taken up Ingold's work. Interweaving the disciplines of anthropology, archaeology, geography, cognitive sciences, natural sciences, art, and architecture, it explored innovative means of engaging with it, involving visual, performative, auditory and multisensory media. Hosted by Scotland's Rural College (SRUC) in Aberdeen, and with some 140 participants, the event included invited speakers from around the world, as well as staff members and research students from the University of Aberdeen.

In the spirit of the symposium, this book should not be regarded as a *festschrift* but rather as a creative and critical correspondence with Ingold's work. The book differs from the symposium, however, in that a majority of

contributors are among Ingold's former doctoral students. This was a deliberate choice on our part, as we wanted to show how Ingold's supervision, and his conversations with students, have inspired both his and their work.[1] Like several other former students, we have continued to collaborate with Ingold in various ways. In addition, both of us were based in Aberdeen University's Department of Anthropology for many years, which was formative for us. During these years we would also meet the many visitors to the Department from around the world and all walks of life, and have shared in the opportunities to learn from them, not only about their ideas but through participating in a wide variety of practical or craft-based activities.

In both our research, matters of power inequalities and coloniality of various sorts have always been front and centre (Ang & Gatt 2018, Gatt 2018b, Loovers 2020). This importantly includes the way anthropological practices participate in perpetuating epistemic coloniality (Gatt & Lembo 2022). We also want to acknowledge the crucial work of activists in, for instance, the student-led Rhodes Must Fall movements in South Africa and the UK, calling for decolonization of the university, the MeToo movement, and most recently, the Black Lives Matter movement. Although Harrison (1991) called for the decolonising of anthropology decades ago, it is mostly thanks to the work on the ground of the activists making up these movements that such issues are now central concerns in anthropology. We address the question of politics and power in relation to Ingold's relational ontology in a sub-section below 'Critiques of Ingold's work'. For now, as part of the explanation of the background to this book, we wanted to include a reflexive critique of our curatorship as editors in terms of how books such as this one participate in power relations.

From the start, we attempted to be mindful of our role as editors, which in terms of reproducing oppressive structures is highly significant. Editors, among others, are disciplinary gatekeepers (Kelty 2009). We believe we managed a good diversity in terms of gender, including for instance Ben Spatz, whose research also explores their non-binary gender and performance. We also wanted to include early career scholars and those in precarious positions alongside established scholars. However, we wish to acknowledge several failings and challenges. In particular, we regret we did not seek out more Indigenous scholars, and are very grateful to Gladys Alexie, Gwich'in language instructor, for contributing. Considering how much Ingold's ideas draw on Indigenous philosophies, more space should have been given to the bearers of this knowledge. Similarly, though some authors hail from northern and southern Europe, and North and South America, many are from the UK; only one hails from Asia, but none hail from Africa or Oceania. On the one hand, this reflects ongoing major barriers for scholars from the problematically termed 'Global South', as well as People of Colour from metropoles, pursuing careers in academia (Schuller & Abreu 2022, Bafo & Dattatreyan 2021). On the other hand, addressing difference and power through such identity labels is in itself problematic.

Labels can have a stultifying effect, and most labels emerge as part of the very process of externalizing those who are labelled. This is what Spatz (2024) has referred to as a 'demographic' approach to identity. However, only those who are personally unaffected by various forms of subjugation have the benefit of feeling unlabelled and are, therefore, able to dismiss them. It is also essential for us to recognise that such reflections and commitments cannot replace, upstage or dilute the need to prioritise the return of land and cultural resources to Indigenous guardianship (Tuck & Yang 2012) or other forms of material and cultural redress. It is essential for such statements not to become what Sarah Ahmed (2006) refers to as non-performative, which assuages guilt without actually ameliorating anything for those people in disadvantaged situations. In the end, books, such as this one, participate in such political relations and we invite readers to consider in what ways the rich chapters in this book address them even implicitly.

Anthropology

In an article entitled *From Science to Art and Back Again* (2016), Ingold provides an autobiographical account of his 40 years of involvement with anthropology. Rather than considering his doctoral fieldwork with the Skolt Sámi in northeastern Saapmi as a moment of 'radical alterity', Ingold found that the teachings he received from his interlocutors offered guidance in his anthropological quest to find his way back home (2016: 6). Brought up in a happy, supportive, and stimulating household, his father Terence Ingold, a renowned mycologist, had been a formative figure in this quest (2016: 7). Ingold would accompany his father on fungal forays or watch him investigate mycelial life through a microscope while drawing what he saw (2016: 8). Some of the literature on his father's shelves, particularly D'Arcy Wentworth Thompson's *On Growth and Form*, would offer further inspiration (2016: 7). All of this might go some way to explaining Ingold's passion for the environment, lines, making, walking, art and drawing, as well as his biological interests, marked by his implacable opposition to neo-Darwinism (2013; 2016). *From Science to Art and Back Again* offers further clues as to how his teaching at the University of Manchester, in the 1990s, found its way into *The Perception of the Environment*. In his own words, TPE aimed to forge 'a new synthesis, alternative to the mainstream alliance of cognitive science and neo-Darwinism, which would draw together insights from developmental biology, ecological psychology and phenomenology, starting from the premise that the organism-person is not a bounded, self-contained entity, set over against the world, but a knot that is perpetually raveling and unravelling within an unbounded matrix of relations' (2016: 17). As his much later research project *Knowing From the Inside* would go on to explore, Ingold's proposal was for an anthropology considered as 'a speculative exploration … of the creative processes wherein people shape environments, and environments people' (2016: 18).

Ingold has long held the view that anthropology 'is the most anti-academic of academic disciplines' (2013: 2) while simultaneously, and paradoxically, being heavily invested in academic institutions (2018a: 130). In *Anthropology: Why It Matters (2018c)*, addressed to a broad readership, Ingold reiterates his 1992 definition of anthropology as '*philosophy with the people in*' (2018a: 4; 1992: 696, original emphasis). It is an 'art of inquiry' (Ingold 2013; 2018a), or a 'correspondence' (2013: 7). Elsewhere, Ingold understands anthropology as 'a sustained and disciplinary inquiry into the conditions and potentials of human life' (2011a: 3), which entails 'a generous, comparative but nevertheless critical understanding of human being and knowing in the one world we all inhabit' (2011a: 229). It is an inquiry, however, that rather than closing in on definitive answers, tends only to generate further questions (Eriksen 2006).

Ingold situates anthropology's anti-academic stance in opposition to 'a discourse founded upon a claim to the supremacy of human reason and whose natural home and breeding ground is the academy' (Ingold 1996: 1). Anthropology's history, too, is intimately woven with imperial, colonial and nationalistic attitudes, often expressed in narratives of social evolution that place the 'West' at the top with science as its intellectual pinnacle, and other cultures lower down (Ingold 1993: xiii–xiv; see also 2018a). Perhaps we might view Ingold's publications from TPE onwards, in this way, as *an anti-academic, yet thoroughly academic manifesto* aimed at dismantling mainstream academic thinking steeped in Cartesian rationalism, cognitive dualism, and neo-Darwinian evolutionary thinking. His work provides an alternative to conventional academic currents, offering pivotal insights from different disciplines as well as from Indigenous ways of knowing, albeit inflected through the works of Western scholars (see Todd 2016 for a critical review). In short, Ingold wants to lay the foundations for a different science, and throughout his work, he has sought to formulate the concepts needed to do so.

Perception, transmission, education of attention

'How do people perceive the world around them? Why should their perceptions differ?' Many scholars, from within and beyond the discipline of anthropology, have addressed these fundamental questions, set out on the back cover of TPE. Yet Ingold was dissatisfied with the answers proposed in the mainstream anthropological literature, and in TPE he offered an alternative. The dominant theories of perception in anthropology, until TPE, aligned perception with mental representation, assuming that people give meaning to the world by organizing the raw data of experience in terms of a received body of concepts and symbols, otherwise known as 'culture'.

Geertz, for instance, defined culture as 'a historically transmitted pattern of meanings embodied in symbols, a system of inherited conceptions expressed in symbolic forms of knowledge about and attitudes toward life' (1973: 89),

and as 'a set of control mechanisms – plans, recipes, rules, instructions …
for the governing of behavior' (Geertz 1973: 44, in Ingold 2000: 159). That
perception and communication should depend upon the construction and
transmission of conceptual representations, and that action should lie in their
behavioural execution, are particularly problematic for Ingold. His point,
contra Geertz, is that humans are neither pre-equipped by nature for any
kind of life nor topped up by culture with information specifying the kind
of life they eventually lead (Ingold 2000: 379, 2011a: 156). Ingold particu-
larly resists the corollary, that life is a 'movement towards terminal closure'
(Ingold 2011a: 3). Rather, he insists, 'life … is a movement of opening' (Ingold
2011a: 4).

The idea that meaning has its source in cultural schemas residing in
people's minds, which filter the data of perception, had long remained virtu-
ally unquestioned in anthropology. Even Are Knudsen (1998), in a working
paper outlining the constructive and far-reaching implications of Ingold's
approach to direct perception, concludes that perceivers could not possibly
be expected to adjust to continually emerging affordances:

> Instead, we have internalised a specific view of our environment to the
> degree that it becomes routinised. Exactly because we cannot burden our
> sensory and mental capacity by continually trying to fit new sensory data
> into open-ended categories, we 'sink' them into schemes or scripts.
>
> (Knudsen 1998)

Ingold (2000: 158) finds the source of these representationalist views in
Durkheim's (1973) notion of *homo duplex*. As the name suggests, for
Durkheim the human person is formed of two parts. One part, pertaining to
the individual, is constantly in flux. Even if the individual has not changed,
the world around them has. What is available to the senses through the indi-
vidual aspect of the person, according to Durkheim, cannot be communicated,
simply because it is constantly changing. But the human person also has a
'serene' part (Durkheim 1957 [1915]: 434–435). Collective representations
reside in this serene part of the human. Durkheim believed that such
representations are communicable precisely because they are not drawn from
the individual but from society.

But as Ingold shows, there is a fundamental flaw in this model. If humans
perceive the world indirectly, through cultural categories, then these very
categories would have to be learned through some process of enculturation
or socialization (Ingold 2000: 394). Yet how could this be possible if the cat-
egories would need to be already in place for them to learn anything at all?

During the late 1980s and early 1990s, Ingold found inspiration in the
works of ecological psychologist James Gibson (Ingold 2000: 2), philosophers
of phenomenology Maurice Merleau-Ponty (Ingold 2000: 168) and Martin
Heidegger (Ingold 2011a: 9), and biologist Jakob von Uexküll (Ingold
2000:154). Following Merleau-Ponty, Ingold came to understand that 'since

the living body is primordially and irrevocably stitched into the fabric of the world, our perception of the world is no more, and no less, than the world's perception of itself – in and through us' (Ingold 2011a:120). The world, thus understood, is both sentient and open. From Gibson's ecological psychology, Ingold drew the four conditions of perception: that perception entails action; that what we perceive depends on how we act; that the information available for perception is inexhaustible; and that learning is an education of attention (2000, 166–8). It was his discovery of the resonance between Gibson's critique of conventional cognitive science and his own criticism of representationalism in the works of Durkheim and Geertz that led Ingold to develop his own ecological approach to perception (2000, 2011a, 2022a).

Ingold's theory of perception depends on two notions. The first is that before all else, human beings, along with beings and things of every kind, dwell in a world. This implies that all and any knowledge can only ever issue from this condition of always already being in the world. Here, Ingold draws on both Heidegger's notion of dwelling (see Harkness & Simonetti, this volume) and von Uexküll's theory of *umwelt* (see Schroer, this volume), to argue that no cultural constructions can be built outside of, or prior to, living beings' habitation of a world.

Second, Ingold adopts and develops Gibson's notion of 'affordance'. For Gibson perception is an exploratory process, in which a living being, while carrying out an activity, is constantly adjusting and reorienting its sensory organs. Perception is characterized by 'the looking, listening, touching and sniffing that goes on when the perceptual systems are at work' (1982 [1976]: 397–8, cited in Ingold 2000: 166). For Ingold, there is a 'coupling of perception and action' (2011a: 53; Ingold 2000: 289) as we go about our lives:

> The knowledge obtained through direct perception is thus *practical*, it is knowledge about what an environment offers for the pursuance of the action in which the perceiver is currently engaged. In other words, to perceive an object or event is to perceive what it *affords*.
>
> (Ingold 2000: 166, original emphasis)

Affordances, as theorised by Gibson and further developed by Ingold, are not to be confused with representations. Perception does not work by providing symbolically encoded, conceptual representations with a stimulus input. Rather, the world becomes meaningful through the perceiver's movements in life (Ingold 2022a: 341). Or as Ingold writes, following Gibson, we learn to perceive in a way that is appropriate to a culture, not 'by acquiring programmes or conceptual schemata for organising sensory data into higher-order representations, but by "hands-on" training in everyday tasks whose successful fulfilment requires a practised ability to notice and to respond fluently to salient aspects of the environment' (Ingold 2022a: 341). In other words, a culture, or indeed a way of life, is actually a particular 'education of attention' to the affordances of the world.

While Ingold adheres closely to Gibson's notions of perception, he reworks them by drawing on examples from a wide range of societies, as well as by incorporating Indigenous perspectives. In addition, in his later development of the concept of affordances, Ingold (2007b) avoids the deterministic undertones of Gibson's vocabulary. For Gibson, as Ingold notes, an object affords what it does *because of what it is*, regardless of whether the affordance is perceived by anyone or anything in the vicinity. In this sense, Gibson is a *realist*. Ingold's approach, by contrast, is *relational*. Affordances, for him, are not fixed 'objective' attributes (Ingold 2007b). It follows that perception does more than reveal a world that already exists, in all its particulars. Rather, it actively participates in the world's ongoing generation.

Ingold finds similarities between this view of perception and anthropologist Jean Lave's idea of 'situated learning' (Lave 1998: 323). Ingold interprets what Lave calls 'understanding in practice' as a 'process of *enskilment*' (Ingold 2000: 416, original emphasis) in which 'learning is inseparable from doing, and in which both are embedded in the context of a practical engagement in the world – that is, in dwelling' (Ingold 2000: 416, original emphasis). Ingold puts the 'education of attention' to work to further critique conventional theories in cognitive anthropology (e.g., Sperber 2001) which attribute learning processes to deterministic cognitive mechanisms. For such theories, cultural variation lies in the content of what is acquired, whereas the mechanisms are assumed to be innate and universal. Ingold's argument, to the contrary, is that human 'capacities are neither internally pre-specified [innate] nor externally imposed [acquired], but arise within processes of development as properties of dynamic self-organization of the total field of relationships in which a person's life unfolds' (Ingold 2001: 131).

Ingold's (1992) theory of perception became the basis for a much broader proposal in TPE. Starting from the premise that person and organism are one and the same, Ingold argues that every person, like every organism, emerges as the locus of development within a field of relationships, 'which is in turn carried forward and transformed through their own actions' (Ingold 2000: 3). In other words, the organism-person is constituted in an environment through relations with other organisms-persons and with things. Ingold refers to this, interchangeably, as the 'ecology of life', the 'relational model', or the 'dwelling perspective'. What is now widely known as Ingold's 'dwelling perspective' treats the immersion of the organism-person in an environment as 'an inescapable condition of existence', owing to which 'the world continually comes into being around the inhabitant, and its manifold constituents take on significance through their incorporation into a regular pattern of life activity' (Ingold 2000: 253).

In his preface to the 2011 re-issue of *The Perception of the Environment*, however, Ingold acknowledges a growing dissatisfaction with the 'facile' notion of dwelling, with its 'connotations of snug, well-wrapped localism' (Ingold 2011c, xviii), and proposes 'inhabitation' as a better alternative (2007a, 2011a, 2011c). The 'inhabitant', he goes on to say, lives in a

'weather-world' in which 'there are movements, occurrences, growths, swellings, and protuberances. But there are no objects' (2011c, xviii, original emphasis). Here, Ingold returns to one of the conditions of perception drawn from Gibson's work, namely, that perception entails movement (see also Ingold 2011a: 12). His books *Lines* (2007a), *Being Alive* (2011a) and *Making* (2013) address movement in more detail. Perceivers, he argues, are wayfarers, and each has to be seen as the 'line of its own movement or – more realistically – as a bundle of lines' (Ingold 2011a: 13). This emphasis on the primacy of movement (Sheets-Johnstone 1999) also informs his revision of notions of knowledge, according to which to move around in an environment is itself to know. Or as Ingold puts it, 'movement is knowing' (2011a, 160, original emphasis).

Genealogy, evolution, ontogenesis

Evolution has long been a central concern for Ingold. As mentioned above, *The Perception of the Environment* is in part pitched against neo-Darwinism. To clarify his position, Ingold juxtaposes two models in TPE's eighth chapter, entitled *Ancestry, Generation, Substance, Memory, Land*: the *genealogical model* and *relational model*. The genealogical model is concerned with *procreation*. In this model, the life of each person is collapsed 'into a single point, which is connected to other such points by lines of descent' (2000: 142). The relational model, on the contrary, is about the *progenerative* engagement of persons in the world, by which Ingold means 'the continual unfolding of an entire field of relationships within which different beings emerge with their particular forms, capacities and dispositions' (2000: 142).

Let us start with the genealogical model. In the Judeo-Christian tradition, the Biblical imagery of the tree has often been used to depict kinship as starting with the first human on earth: Adam. Adam forms the trunk of the tree from which all other humans are derived. Such a view of the ancestry of humankind underscores the idea of an evolutionary hierarchy based on descent. Ingold argues that in this genealogical conceptualisation, history is compared to beads on a string, with a clear distinction between past, present, and future. Each person's birth, likewise, is a moment in time, in a linear progression. Every generation marks a particular bead along the string of descent. Thus, we speak of the Millennials, Gen-Z, our parent's generation, our grandparent's generation, etc. These notions of generation and ancestry are intimately woven with understandings of substance.

With the genealogical model, the person – fixed at a point along the progression of time and evolution – is composed of a substantive, material body and a mind furnished with cultural ideas. Metaphors relating to blood, as in 'we share the same blood' and 'it is in my/his/her/their/our blood' are replicated in gene theory, where relatedness is placed 'in the genes' or 'in the DNA'. Both imaginaries, of blood and genes, are based on the image of the genealogical with its consecutive and bounded moments of procreation.

The material and ideational qualities passed down through this genealogical line reinforce particular actions or ideas as part of that grouping (culture or generation, for instance). The ideational has now come into play: it is because of ancestral history that one does or thinks as one does. Or, as Ingold writes, in the genealogical model, 'persons embody certain attributes of appearance, temperament and mentality by virtue of their ancestry, and … these are passed on in the form that is *unaffected* by the circumstances or achievements of their life in the world' (Ingold 2000: 137, emphasis added).

Following Susan Oyama (2000 [1985]), Ingold objects that the genealogical model severs the developmental processes in the lives of all living beings from what is passed on to subsequent generations. According to the model, the genotype is entirely unaffected by the phenotype. Ingold does not argue against the genome per se. In fact, he supports the idea that 'the composition of the genome changes across generations through a process of natural selection'. What he does deny 'is that the DNA sequence in the genome encodes a *context-independent* design specification, and with it, the idea of natural selection as a design agent' (2001: 124 emphasis added). The distinction between genotype and phenotype, as Ingold shows, maps precisely onto that between innate capacities and acquired competencies, or in other words, between nature and nurture (Ingold 2001).

With the genealogical model, memory – as one of the ideational components of a person – passes in the same way down the line of descent. The knowledge needed to function properly in a culture or society is transmitted as a complete script from one generation to the next. In cognitive science, this is equated with 'social learning'. In this view, as Ingold writes, remembering 'is a matter of retrieving from storage … items of information relevant to the situation at hand' (2000: 138). Putting this 'social' knowledge into practice is what cognitive psychologists call 'individual learning'. Sharing this learning, or sharing memories, is made possible because of the common script inherited from the previous generation.

From this, it follows that land, or the environment, is a stage upon which the succession of generations is enacted. The transmission of knowledge, human evolution, and generational progression can all proceed without any necessary connection to a particular tract of land. 'Land and history', as Ingold observes, 'figure as mutually exclusive alternatives' (2000: 139). The genealogical model reproduces the conventional model of Enlightenment science, which posits the world as a vacuum in which only specific entities, such as genes, innate cognitive functions or cultural scripts, have the capacity to act and generate (Ingold 2001).

The relational model tells a quite different story. Ingold draws ethnographic examples from studies of a range of Indigenous peoples to show that animals, rocks, hills, mountains, rivers, celestial bodies, and spirits are considered ancestral beings that have come into being through particular movements and relationships. These relationships eventually also bring about the existence of humans. Hills and rivers, for example, or animals for

that matter, are spoken of as parents or grandparents. These explanations of creation also entail *progeneration* in Ingold's terms.

There are many ethnographic examples of such progeneration, for instance when animals are considered to give themselves to hunters. If properly spoken or thought about, killed, butchered and eaten, then the dead animal's soul will renew into another animal body. There are similar understandings of human progeneration, such as when Inuit regard a child as a grandparent. What stands out in all these examples is that time makes loops, and that lives are not distributed at successive points along lines of descent but are rather ongoing movements in which past, present, and future are intertwined. In fact, in the Néhinaw (Cree) language, the word for life (*pimaatisiiwin*) is transcribed as 'continuous birth'. For Ingold, this means that 'every being is instantiated in the world as the line of its own movement and activity' (Ingold 2000: 142). Therefore, in Ingold's relational model, the inhabitant is not a natural entity endowed with a cultural script for giving meaning to the world. Ingold presents animals, materials, and humans from the outset as constituted by, and constantly generating, relations – or in a word, the world (Ingold 2000: 51). The entwinement of lines of movement conjures up another image, of the trail or path (see Manning this volume). One's personal path is a trail of growth and movement which weaves with the trails of other persons, human and nonhuman. Hence, the personal substance of body-mind is grown and nurtured through relationships with others.

This brings us to memory and knowledge. As you might guess, the idea that knowledge is transmitted in pre-packaged blocks of information does not hold up in the relational model. With this model, there is no ready-composed cultural script to be passed from the minds of one generation to those of the next. Rather, knowing is a trail of discovery involving skilled and sensuous engagement in the environment. In a similar vein, remembering entails that 'memories are *forged*', that they are 'generated along the paths of movement that each person lays down in the course of his or her life' (Ingold 2000: 148). Importantly, the relational model does not set up a distinction between mind and body, nor does it locate knowledge inside the mind such that can be transmitted as packaged blocks of information.

Finally, we turn to the land. Ingold shows that in the relational model, the land is not a platform on which life is enacted, but the very weave of paths of trails laid down by living beings as they carry on their lives. Land or environment is a field of relationships in itself. Thus, land and history cannot be separated, and neither can a person be placed outside of the land. Instead, as Ingold shows, the land is imbued with the vitality of life which constitutes its inhabitants, human and nonhuman alike, even as they constitute the land. As such, the land is like a woven tapestry in which history is *congealed* (Ingold 2000: 148–50).

In sum, Ingold gives priority to *ontogenesis* (2022: 358), and this, in turn, overturns mainstream conceptualisations of evolution and history. Instead of analysing what beings *are*, Ingold argues that we need to investigate what we

and they *do*. Here, Ingold takes leave of Heidegger and Merleau-Ponty and turns instead to Deleuze, to support his understanding of living organisms as becoming rather than being. Evolution, in this conception, is topological: the unfolding of an entire tapestry. Here, the tapestry is life: that is, an all-embracing matrix of relationships wherein manifold forms of life emerge (2013: 8). Thus, unlike the structures posited by sociologist Pierre Bourdieu (1990), forms in Ingold's view emerge through relationships. Furthermore, the tapestry is never finished or complete. One does, however, find patterns, rhythms or regularities in the tapestry; these are what have classically been described as 'cultures' or 'societies'. As Ingold argues, 'cultural forms arise within the weave of life, in conjoint activity' (2013: 8). 'Forms of life', he continues, 'are neither genetically nor culturally preconfigured but emerge as properties of dynamic self-organization of developmental systems' (2013: 8–9). With this, the environment is reconceived not as the surroundings of an organism but as an open-ended zone of interpenetration, bounded neither on the inside nor on the outside.

Ingold's work and wider debates

Nature-culture

Throughout the 1990s a debate was carried on across a number of disciplines, in both academic contexts and mainstream media, centred on the question of social constructivism. In the United States, this debate was known as the 'Science Wars', and it pitted scientific realists against scholarly postmodernists. On the one hand, postmodernist critics of science, drawing on the post-structuralist writings of figures such as Derrida, Deleuze, and Lyotard, argued that all scientific methods and theories are social constructs. Scientific realists, on the other hand, argued that scientific knowledge is objective and empirical. Accusing postmodernism of having turned its back on realism, empiricism and even science itself, they proceeded to question the validity and meaningfulness of research in cultural studies, feminist studies and, above all, science and technology studies (Latour & Woolgar 1979, Gross & Levitt 1994).

Ingold's proposals for a world of ongoing, mutually constitutive relations undid the foundations of this debate. Both nature and culture, he argued, are the products of particular discourses which actually prevent us from understanding how we learn from and make sense of the world – hence the seemingly intractable oppositions of the science wars. Ingold's reformulations have contributed to the rise of what we referred to above as ontologies of emergence. This broad tendency is popularly associated with the idea of the 'anthropocene' (Crutzen & Stoermer 2000) – an idea which has inspired scholars and practitioners, across both natural scientific and humanistic fields of study, to question the division of nature and culture.[2] Evidence of Ingold's influence in this development is evident in the number of publications and

events on the topic in which he is cited, or for which he has been invited as a key interlocutor.[3]

The ontological turn and one world anthropology

Scathing critiques from postcolonial scholars and others, from the 1980s, had made it clear that anthropologists could no longer claim their ethnographies to be individually produced and politically innocent descriptions and analyses of their ethnographic subjects. What became known as the crisis of representation eventually resulted in a discipline-wide acknowledgement that anthropological writing had real political consequences. As part of these discussions, anthropologists explored reflexivity, acknowledging that any 'knowledge' that anthropologists claimed to 'produce' was necessarily not only situated (Haraway 1998, Okely & Callaway 1992) but also jointly created with the people with whom they worked and lived in their fieldwork (Tedlock & Mannheim 1995).

Despite the discipline-wide changes brought about by the crisis of representation, as late as 2001 George Marcus, one of the key figures in these debates, could still complain that anthropological efforts remained limited to written recognition that knowledge in fieldwork is co-produced. And in fieldwork, he poignantly notes, such supposedly collaborative methods amount to nothing more than 'rapport under erasure' (Marcus 2001). For it was still the anthropologist alone who would decide on the research questions and design the research project, going on to produce texts on their own, in order to benefit their own careers. Thus, for various reasons, the radical anti-colonial hopes that accompanied the crisis of representation failed to dislodge more deep-seated disciplinary structures.

From around 2007, another debate began with the publication of the volume *Thinking Through Things* (Henare, Holbraad, & Wastell 2007). This came to be known as the 'ontological turn' (Carrithers et al 2010). As with the crisis of representation, the ontological turn (OT) opened radical possibilities. Its proponents had managed to foreground the elephant that had long filled the anthropological room, namely, the professional fear of being dismissed as having 'gone native', with all its racist and colonial overtones. No matter how much fieldwork was aimed at understanding the other's point of view, it rarely led anthropologists to question their own ontological assumptions (Holbraad 2012, Willerslev 2004). Until the OT, its proponents made out, anthropological treatment of cultural differences was characterised by an 'implicit relativism' (Holbraad 2012, see also Bloch 1998).

In the last decade, however, there has been a significant shift, and many anthropologists have begun to acknowledge that Western scientific ontologies and epistemologies are not givens but forcefully imposed complexes. In fact, many of the people that anthropologists work with are engaged in onto-logical struggles, where their ability to determine for themselves how they

inhabit the world is constantly threatened by various ongoing, often intensi-fying, forms of subjugation (Blaser 2010, de La Cadena 2015, Escobar 2018, Robinson 2020). The positive result of the OT is that even in the mainstream, anthropologists no longer assume that their own ontologies are naturally correct and everyone else's are *mere* beliefs.

Although Ingold's proposal for a single world characterised by an ongoing mutual constitution had long offered the basis to counter the relativist underpinnings of anthropology (cf. Knudsen 1998), the OT's proposals made more ripples in anthropology explicitly about this issue, at first. We believe the reason for this is they were more palatable to anthropologists still sensi-tive to the charge of 'going native'. Specifically, the OT's proponents claimed that their arguments touched only on ethnographic methods and writing and were not 'ontological' proposals (Henare et al 2007). Some, indeed, criticized Ingold for merely trying to replace one grand theory with another (Amiria Salmond pers comm, Martin Holbraad pers comm, James Leach pers comm). Yet surely, the very assertion that anthropologists can and should be open to alternative ontologies *is*, in itself, an ontological proposal, otherwise how could one explain the existence of possible alternative reals and the per-ception of them? When a thorough reflexive analysis of one's ontological assumptions does not extend to perception, or when the relation between ontology, epistemology and perception is not elaborated, serious conceptual and political problems ensue.

The OT has since grown and diversified into multiple schools of thought (Holbraad & Pedersen 2017). Many of these resorted to the idea of mul-tiple worlds to account for radical alterity (e.g. Escobar 2018, de la Cadena & Blaser 2018). Holbraad has changed the position originally advanced in *Thinking Through Things*, and now refutes a multiple worlds theory (Holbraad & Pedersen 2017). Escobar (2018) certainly makes important arguments against what he calls 'One-World World' models, which have been used to justify the forceful colonial imposition of one ontology over others. However, proposals for a multiverse of many worlds are weakened, even rendered counterproductive, by the failure to explain how such worlds can be distinguished in perceptual practice. An explanation of difference that assumes the existence of separate worlds:

1) distracts from the harm done by one 'world' to another (Gopal 2021);
2) obfuscates the contribution of subjugated people to the formation of what is currently understood as Western knowledge (Safier 2010, Giraldo Herrera this volume);
3) forecloses possible routes towards decolonisation (Gopal 2021);
4) tends towards essentialising 'different worlds' (Graeber 2015);
5) cannot explain how anthropologists, or anyone else, can learn anything at all that is not already part of their way of life, their native 'world' (Ingold 1993).

Therefore, we agree with Ingold (2018) that if anthropologists want to take the ontological struggles of the people they work and engage with seriously, they will need to account for differences in a *shared* world, and how those differences can be perceived. But this means taking their share of responsibility (Ingold 2021: 8). In fact, Arturo Escobar has also shifted his position towards a relational understanding of a pluriversal world, inspired in part by Ingold's work (Escobar et al 2023).

Ingold's work indeed offers an ontological proposal, or in his terms an onto*genetic* one (2018b), as we discussed earlier. We suggest that Ingold's ideas are an instance of what Joel Robbins (2010) calls *proposals* for universals. It is, nevertheless, crucial to note here that, fully mindful of the implications of the universal, Ingold (2018b: 160–1) also redefines the 'whole':

> The English language has a beautiful word, longing, to describe the exposure of going along. In longing, an imagination that lies beyond the horizon of conceptualization loops proleptically back to meet an origination that lies beyond the reach of memory, as in the cycling soul-life of the Inuit, in a place where past and future merge. It is a place we perpetually dream of and strive for, but never reach…In its very open-endedness, the whole, it seems, is spatio-temporally self-encompassing: we live on the inside of eternity, as Australian Aboriginal people have long been trying to tell us with their ontology of the Dreaming or 'everywhen'.
>
> ([c.f.] Stanner 1965)

Ingold's proposed understanding of the one world, characterised by ongoing and open-ended mutual constitution, enables the stance of openness to difference which is so crucial to anthropology. In Ingold's version of emergence ontology, or *ontogeny* (2022a: 363), any action or engagement contributes to the ongoing formation of the world. Thus, new possibilities are being formed all the time; moreover, anything anyone does, including thinking or imagining, contributes to that worlding (Ong 2011). All the authors in this book take these premises, drawn from Ingold, as their point of departure, such that what they and their fieldwork colleagues perceive and address in their research is *really* real. In this regard, they give voice to a new generation of anthropologists who are actively participating, some explicitly and emphatically, in ontological politics.

Critiques of Ingold's work

Politics

Despite all this, Ingold's writings have been criticised for their lack of explicit engagement with politics. For instance, while acknowledging the usefulness of Ingold's ecological anthropology for understanding the

material conditions and effects of life, Penny McCall Howard (2018: 64) argues that the 'emphasis on practical situated activity and unifying the analysis of humans and nonhumans has led Ingold … to reduce the scope of human intentionality and therefore elide the effects of alienation and class divisions within human society'. Similar critiques have long been levelled at Ingold's 'dwelling perspective'. In a 2005 essay entitled 'Towards a politics of dwelling', Ingold admits the term 'dwelling' conveys a misplaced impression of comfort, and that the conspicuous absence of the political is 'entirely just, and troubling' (Ingold 2005: 503). More recently, Ingold responded explicitly to the critique around politics (2024: 66–75). He considers, for example, his work on neo-Darwinism and style of writing as 'intensely political' (Ingold 2024: 66). Perception is heavily political[4] and since his admission in 2005, Ingold could certainly have developed a more nuanced political approach, including for instance engaging with the wealth of feminist, anticolonial, political ecology, class and queer scholarship that could strengthen his arguments.

Despite this, what scholars who work with Ingold's ideas have found, including McCall Howard (2018), is that they make it possible to develop accounts of power and politics which take into account materials and environments in much more cogent ways than other theories which background nonhuman or non-symbolic aspects of the phenomena in question (e.g., Gatt 2018, Loovers 2020, Gruppuso & Krause, Giraldo Herrera, Loovers, Curtis et al, Winter, Gatt et al, all this volume). So we are inspired by Virginie Magnat, who inferred from her conversations with Indigenous Elders, Traditional Knowledge keepers, scholars, and artists, that giving up on challenging ancestors is not responsible. At first, Magnat felt compelled to exclude her intellectual ancestors for the part they played in patriarchal and colonial subjugation. However, Secwépemc singer Glen Denault advised her instead, to enlist these ancestors to her aid. She understood that she should barter with these illustrious interlocutors: 'If they are willing to support my research on vocality, I will return the favour by citing them in my writing', Magnat concluded (2020: 29).

A further challenge related to power and politics in Ingold's work is the apparent incompatibility between a relational ontology and forms of political debates, such as identity politics. In the 1990s, the processual paradigm that was developing in anthropology came to understand tradition as inherently dynamic (Armin Geertz 1997). Invention was inherent in all culture and tradition; 'tradition and culture are constantly in the process of renegotiation and redefinition, such that invention is a normal and inevitable part of the perpetuation and use of all culture and tradition' (Hanson 1997). Yet anthropologists found that their academic work along these lines was rejected by Indigenous communities in New Zealand (Hanson 1997, Linnekin 1992, Wiener 2007). It was rejected not only by the Indigenous activists and scholars Hanson worked with but also by the anthropology

department at the University of Auckland because it threatened to dismantle the carefully constructed land claims, based on tradition, that had only recently begun to make some headway. The relational ontology so carefully elaborated in Ingold's work comes up against these very same problems. Robert Wishart explained how First Nations elders he has worked with for a long time in Canada find a lot of resonance between Ingold's ideas and their sense of being in the world (pers comm). However, they explained that in the context of the importance of the land claim trials and political struggles they are engaged with they cannot work with it. Canadian state and courts work with 'Western' ontology, variably referred to as 'fixist' (Meulemans 2016), explicate (Bohm 1980), Modern (Latour 1993). In this system, any hint of fluid or relational ways of understanding groupings, therefore without clear boundaries, is interpreted as a lack: a lack of continuous history, a lack of group identity, or a lack of identity itself. The ongoing and urgent need for strategic essentialism (Spivak 1988) in the ontological struggles of people around the world (Blaser 2010), makes a relational ontology of little help. In fact, as Todd (2016) has written such relational ontological proposals anyway derive from those Indigenous peoples themselves.

On the one hand, what these issues highlight is the need for relational and emergence models like Ingold's to be put to work not with Indigenous peoples but directed towards Western contexts perpetuating coloniality; in institutions like universities, governments, and transnational governmental bodies. On the other hand, Ingold's relational ontology does not need to be taken as a finished project. For instance, working with Friends of the Earth International, for whom power inequalities (both human and ecological), are the heart of their lives' work, Gatt (2018b) needed to take into account how even within a relational ontology some relations have more power than others, although this is never a static or one-dimensional situation. In order to address this Gatt built on Ingold's work, and what she learnt working with FoEI activists, and Haraway and Latour, and specified further concepts within a relational ontology, which are vectors, direction of attention and unprotected backs (Gatt 2013, 2018b). In fact, this is what this book primarily wants to showcase: how scholars have found resonance in Ingold's work and then developed it to address the specifics of their research.

Sensory anthropology

David Howes (e.g., 2011, 2019) has waged a long-running campaign against Ingold's work. First, he claims that, for Ingold, the senses are interchangeable (Howes 2019: 22). Second, he argues that Ingold treats the body as a universalized, pre-reflexive entity while remaining 'oblivious to all the ways in which the senses and sensations are gendered (Classen 1998), racialised (Stoever 2016), and also structured by social class (Bourdieu 1987)' (Howes 2019: 22). Third, he (2011: 321) portrays Ingold as a naturalist, perhaps

due to his background in the natural sciences, who 'naturalizes perception, disallowing any cultural influences', and denies the significance of differences in ways of life. Another recent critique of Ingold's theory of direct perception comes from Webb Keane (2018: 45), who associates it with a yearning for unmediated contact with the world, symptomatic of 'religious mysticism and aesthetic romanticism'. Like Howes, Keane also seems to read Ingold as proposing an individualistic understanding of perception and action (2018: 46).

Our initial reaction to these remarks is that neither anthropologist can have read TPE or any other of Ingold's writings on their own terms, but rather allow their presuppositions to colour their readings of his work. This is especially so in relation to the 'individual', a notion that Ingold thoroughly unpacks throughout his entire opus. We refer to them here mainly because they voice misunderstandings which often seem to occur in relation to Ingold's work. Ingold addresses this in his reply to Howes, in their 2011 debate in the pages of the journal *Social Anthropology*. After thanking Howes for his reply, Ingold (2011c: 323) writes that 'as ever, it mixes willful misquotation with crude caricature and is delivered with all the finesse and precision of a blunderbuss'. Beyond this lighthearted belligerence, Ingold very clearly corrects Howe's many misunderstandings, by reiterating the point that, rather than 'naturalising' perception, his 'contention is that differences are emergent within the unfolding of these relations and processes, rather than superimposed by "culture" upon a common bedrock of "nature"' (Ingold 2011c: 323).

While Howes's and Keane's objections to the universalisation of the body are certainly correct when levelled at Merleau-Ponty (see Lock and Farquhar 2007), Ingold does not adopt this aspect of Merleau-Ponty's thinking. As Ingold has argued throughout his work, 'what anthropology can bring to ecological psychology and phenomenology is a focus on the *relational*' (Ingold 2011c: 325). And crucially, for Ingold, ' "social" refers not to a domain of phenomena, as opposed – say – to the "natural", but to a certain ontology wherein every being, or everything, is a certain gathering together of the threads of life' (Ingold 2011c: 325).

What we lament about these debates, with scholars whose work has been indisputably ground-breaking, is how much more constructive their exchanges *could* have been. While Howes and Keane may be particularly skilled at bringing to the fore different possibilities of sensory experience, sense-making and ethical striving, Ingold offers by far the most workable understanding of perception that explains how anyone is able to apprehend such differences in the first place. As Arantes (2014) argues, *both* are necessary to anthropological research which attends to the senses.

Organisation of the book

The book is organised along five broad themes that are recurrent in Ingold's work: i) Humans, Animals, and Environment; ii) Sensibilities Beyond Science;

iii) Experiment, Experience, and Education; iv) Creativity, Correspondence, Design; v) Movement, Becomings, Growth. Although the sections are separate, many of the themes are cross-cutting and are addressed by chapters in different sections.

Section I Humans, animals, environment

Contributors to this section address the various ways in which humans perceive, know and communicate with nonhuman living beings and their environments, dealing critically with potential tensions inherent in such relationships such as those of similarity and difference as well as dependence and autonomy. Sara Schroer presents her ethnographic research with falconers, whose work involves cooperative hunting between humans and birds of prey. She draws on her ethnography and Ingold's idea of skilled practice to argue that both falconers and falconry birds learn to attend to each other's ways of perceiving the world. Their shared learning processes generate human-avian ways of knowing which demonstrates at least one way in which communication functions in a more-than-human world.

Carlos Sautchuk takes us to the Brazilian Amazon. He develops an Ingoldian ontogenetic analysis of the relationship between the *pirarucu*, the world's largest-scaled fish that lives in Amazonia's rivers, *ribeirinhos* (river dwellers), and environmentalists and their policies. Sautchuk shows not only how the skills of *ribeirinhos*, fish farmers and environmentalists bring the fish into different relationships with people and their policies, but also that these relationships *engender* the particular lives, bodies and modes of attention involved.

The third chapter in this section is by Paolo Gruppuso and Franz Krause, who consider their research, respectively on wetlands and river deltas, in the light of Ingold's (2015) distinction of 'between' and 'in-between'. By means of this distinction, they unpack the variable tensions in the wetlands of Agro Pontino in Italy, and the Mackenzie Delta in Canada, 'where modernist approaches have converted the regions' inhabitants' endeavours from *in-between*, at the centre of their social and material worlds, into marginal positions *between* other, more powerful realms or categories' (*infra* p75).

Section II Sensibilities beyond science

This section takes as its focus the 'rupture between the real world and our imagination of it, which underpins the official procedures of modern science' (Ingold 2013: 734). While anthropological research has explored myriad alternative conceptualisations of both human and nonhuman agency and causation, anthropology's engagement as a discipline with non-secular ways of being has been limited. Under the broad rubric of conversations between science, religion and theology, Celia Deane-Drummond and Norman Wirzba show how it is possible to engage with Ingold's anthropology without

translating their work into secular conceptual categories. They build on Ingold's framework to develop an ethics in which humanity is not separated from the rest of 'ecological living space'. Their theological interpretations generate resonances between themes in scripture on the meaning of a world as created and the nature of human embodiment. They find Ingold's critique of modern philosophical formulations of human subjectivity 'generative' for theologians, like themselves, working to articulate the character and practical significance of (the Christian) God's salvation purposes in this world.

Key to Ingold's approach is his rejection of the assumption that knowledge is founded on empirical study – an assumption that, in treating people as both objects and sources of knowledge, restricts anthropology to the study *of* people or things – in favour of doing anthropology *with*, *through* or *by means of* other ways of being and knowing. In his chapter, César Giraldo Herrera first traces how Indigenous peoples have had their knowledge appropriated and 'purified' of meanings and structures, or dismissed as 'myths' or 'ill-conceived religious beliefs'. He then develops a speculative analysis based on an anthropology *with* the understandings of Taíno, an Arawak people indigenous to the Caribbean, *and* cochlear anatomy and physiology, thereby challenging the image of Science as a unique and distinct Western achievement.

On the other side of the coin, studying with Western practitioners such as soil scientists and European artists, Germain Meulemans and Marc Higgin explore how Ingold's work has shaped their research on soil and clay respectively. For them, it offers the possibility of anthropology in the minor key which, 'contrary to the universalizing tendency of the major key… allows to better account for how different paths of becoming emerge – for ontogenesis in the plural' (*infra* p126).

Section III Experiment, experience, education

In his work, from his writings on sensory perception and embodiment to his engagements with improvisation and education, Ingold strives to present life as experienced in the doing and the undergoing, in the making, within the flux and flow of the environment-world. This section engages with the experiential mode and explores the connected matters of experiment and attention. Ingold encourages critical revision of anthropological ways of writing, observing and listening, learning skills and producing creative works. He has elaborated these ideas in part through the course known as the 4As (Anthropology, Archaeology, Art and Architecture), developed from a seminar convened while he was still based at the University of Manchester and taught in Aberdeen from the spring of 2004. As he writes in *Making* (Ingold 2013), in which he describes the experience of the course and what came out of it, his ideas have been forged in collaboration with the students involved, and in various other workshops, walks, making sessions and collaborations with doctoral students, artists, craftspeople and other skilled practitioners.

Such 'thinking through making' brings into focus the open-endedness and unfinished quality that creative practice, anthropological ways of working, and life-living more generally, have in common. This section brings together contributions which engage, theoretically or methodologically, with these ideas that – as Ingold also argues – are needed for environmentally and socially conscious ways of studying and teaching.

In his chapter, Peter Loovers weaves together the teaching he received from Ingold's TPE and Teetł'it Gwich'in in northern Canada. From Ingold, he draws an understanding of a world in which every living being is 'a singular locus of creative growth within a continually unfolding field of relationships' (2000: 4–5). From James Herbert Thompson, a Teetł'it Gwich'in Elder, he learned that 'you have to live it', a phrase that encapsulates the educational practices Gwich'in advocate for 'living on the land'. The weave Loovers creates of his life, following these principles, leads him to argue that 'concepts, born out of ethnographic experiences and anthropological contemplation, are not only good to think with, *but they are to live with*' (*infra* p150).

Elizabeth Curtis, J. Edward Schofield, and Jo Vergunst present their collaborative research on young people's relationships with trees, woods and forests in northeast Scotland, basing their thinking about trees on Ingold's relational model. In their project, they offer schoolchildren various activities including planting, caring for and playing in a 'wee forest', and an introduction to the palaeosciences, in particular pollen analysis, which means getting to make sediment cores, preparing samples, and using high-magnification binocular optical microscopes. They aim to understand how to better involve children and young people in creating and caring for treescapes, especially in the present circumstances of climate change and habitat and species loss.

Judith Winter's is the final chapter in this section. She explores the pedagogy of the core founders of the Bauhaus school of art. Established in 1919, the Bauhaus founders developed their pedagogies as they were forced to flee growing Nazi oppression in Germany in the inter-war period, in dialogue with the educational philosophies of John Dewey and John Andrew Rice in the United States, and Richard Hamilton in the United Kingdom. Through her detailed analysis of this pedagogical history, Winter argues that Art School education in the UK needs to be reoriented towards *unlearning*, specifically in order to enable students to find their calling.

Section IV Creativity, correspondence, design

Hallam and Ingold (2007) argue that creativity is not wholly cognitive but arises in the nexus of mind, body and environment. The chapters in this section explore how creative practices are grounded in ways of engaging with and describing the world. Questions of design and descriptive practice are crucial in anthropology: how do differing forms of notation and making shape our knowledge practices and the ways we come to understand and

perceive what we know? Following Ingold's work on *Lines* (2007a) and *Making* (2013), this section gives further support to anthropology's aspiration to move away from retrospective analysis towards prospective participation in life as it unfolds (Gatt & Ingold 2013).

All three chapters in this section take up this challenge. Wendy Gunn shows how the theories and practices of design anthropology, a subdiscipline dedicated to exploring prospective and speculative approaches, influence discussions, research, policies and ideas beyond the discipline. Gunn describes three projects in which she was involved as a design anthropologist: The Making Futures project, a doctoral training network teaching processual and speculative approaches to anthropology, architecture and design students; a workshop called Designing for Growth and Well Being, in which architecture and engineering students made prototypes to explore the biotic and abiotic components of hospital ventilation in order to find ways of improving air quality; and finally The International Space Station Archaeological Project, the results from which will be used 'to inform future research design experiments and to improve the design of mission equipment and spacecraft design for future space missions' (infra p197).

Caroline Gatt questions what anthropologists make, and what they *could* make. Could they remake scholarship? She is joined by Gladys Alexie, Joss Allen, Gey Pin Ang, Valeria Lembo, Amanda Ravetz, and Ben Spatz to speculate imaginatively on what a pluriversity might be like. What principles would it be based on? What practices would be enacted? Joining forces to imagine forms of *regenerative* scholarship, the authors explore what can be done to combat the ongoing epistemic colonialism, along with crushing precarity and overwork, caused by the colonial and neoliberal extractivism of current university structures.

Rachel Harkness and Cristián Simonetti consider what is required to reconcile their roles as researchers, studying with archaeologists and eco-builders respectively, with their responsibilities as citizens in a shared world. They show how the skills of using different types of trowels in archaeology, and in building off-grid eco-buildings, bring materials into combination with critical reflection and imagination. Building on Ingold's work, they propose 'to cut what is still a hopeful path through these landscapes of the Anthropocene (infra p237)'. They draw on the practices of the people they work with to develop renewed understandings of how humans intervene in the world, whether in the revision of notions of building to acknowledge the ongoing histories of relations between people and materials, the reconstruction of an imagined past through skills of excavation, or the descriptive and analytic work of the scholarly writer.

Section V Movement, becomings, growth

In the edited volume *Biosocial Becomings*, Ingold and Pálsson (2013) set out an ambitious programme to reconfigure the relations between biology, psychology, and anthropology.[5] The concept of ontogenesis is key to this

programme, and contributors to this final section ground notions of ontogenetic becoming in their analytic and autoethnographic descriptions.

In her chapter, Paola Esposito elaborates on her personal experience of self-managing chronic pain. She explores how, through her years of dancing *butoh*, she has cultivated a form of somatic attentiveness that has enabled her to enter into a correspondence with her pain, offering relief from it sometimes for several days. It is widely held that butoh generates metamorphosis. However, building on Ingold's critique of hylomorphism, and his work on perception and imagination, she argues that the metamorphosis butoh brings about is *more than metaphorical*, resulting in actual bodily transformation – as she experienced herself. Esposito's chapter shows how 'anthropology with art' (Ingold 2013) can become part of one's life, not only of thinking 'about' life.

Montse Pijoan, herself a seasoned sailor, presents an ethnographic analysis of the experience of trainees and permanent crew aboard traditionally rigged sailing ships. She argues that this training offers an education of attention that sharpens sailors' ability to perceive movement. Pijoan shows how at sea, sailors develop skills that enable them to engage with rhythms, or relationships between movements, in their relentless cycling of duties. When they disembark, the experience of movement and rhythm they learned at sea persists, leading them to a heightened awareness of movement on land. Pijoan argues that by way of their apprenticeship on sailing ships, sailors learn to perceive movement as a fundamental quality of the world.

The final chapter in this volume is by marathon runner Paolo Maccagno and kayaker Deborah Pinniger. Together, they explore the experience and potential of 'limits' in their respective practices. Maccagno reflects on his recent projects encouraging prisoners in Scotland to run marathons within the prison walls, and Pinniger describes key aspects of kayaking based on her lifelong engagement with the sport. Together, they ran a workshop for students studying for a degree in Adventure Education, at the University of the Highlands and Islands (UHI). They bring their skills and reflections on limits into conversation with Ingold's idea of education as *ex-ducere*, leading out. They conclude with the suggestion that for educational processes to generate responsible and equitable ways of being and relating, it may be necessary to understand education as a form of mutual surrender and support.

Notes

1 See Ingold (2022b: xii–xiii), for the 32 postgraduate students he supervised in the last decades.
2 Other theories and approaches which have together generated significant momentum for a shift from a fixist understanding of the world to an emergence ontology are: chaos and complexity theories (cf. Mosko & Damon 2005); activist movements such as the Hearing Voices Movement, which have shaken

the sovereignty of biology in the psychiatric sciences (cf. Blackman 2016); and Indigenous scholarship (cf. Cajete 1994, Aluli-Meyer 2014, Wilson 2008).

3 The following are only a few examples: The 'Anthropocene School' organised by the University of Lyon, invited Ingold as their guest of honour (2023), https://medium.com/anthropocene2050/a-lecole-de-l-anthropoc%C3%A8ne-5-c-est-bient%C3%B4t-ce3e298d7858. In 2022, the 'systems and futures' editor of the website Public Books invited Ingold, together with painter Andrea Hornick, to explore each other's work and then have an exchange; the editor called it "Designs for the Anthropocene", www.publicbooks.org/andrea-hornick-and-timothy-ingold-designs-for-the-anthropocene/. The Kenan Institute of Ethics at Duke University invited Ingold for a conversation entitled 'Facing the Anthropocene' (2021), www.youtube.com/watch?v=dd9UUDdSaBA. Finally, Ingold is cited many times in publications and events on the Anthropocene curriculum and Anthropocene Commons websites.

4 See for instance Robinson (2020) for a pointed discussion of settler colonial perception and its effect on First Nations peoples, and Sun Eidsheim (2018) on how listening in the United States is racialised and creates further racial discrimination.

5 Other examples of work along these lines are Deleuze & Guattari 2003; Dolphijn & Van der Tuin 2012; Hallam & Ingold 2007; Ingold & Pálsson 2013; Oyama 2000.

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Section I

Introduction

Wind, wing, fin, water: Co-constructing relations, ontogenesis and enskilment

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> Neither innate nor acquired, skills are grown, incorporated into the human organism through practice and training in an environment. They are thus as much biological as cultural. To account for the generation of skills we have therefore to understand the dynamics of development. And this in turn calls for an ecological approach that situates practitioners in the context of an active engagement with the constituents of their surroundings.
>
> Tim Ingold (2000: i)

Humans are never alone, nor are they ever passive bystanders. The bio-eco-cultural enskilment that characterises the human niche, the way *Homo sapiens* are in the world, as Ingold reminds us, is always situated in active relations. Understanding these relations, the dynamics of the interactions of organisms and landscapes with mutual ecologies – those that co-produce and co-construct each other's niches in behavioural, ecological, and physiological ways – is an important theoretical, methodological, and practical necessity in the Anthropocene.

One might view these relations as kin-making and kin-breaking (Clarke & Haraway 2018, Fuentes & Porter 2018), and as dynamic ontogenetic

processes. One could make the argument that, in the world, there is nothing more important than kin. Kinship is the central currency and dynamic of existence. For humans, kinship is the perceptual glue that unites persons, defines place, and describes relationships. Kinship is simultaneously at the core of evolutionary biology and the centre of human societies. In biological, historical, and social realms, making kin, being kin, and aiding kin are the fundamental features of life. If kin are those closest in space, time, and flesh, then kinship, by definition, is a multispecies endeavour. Considering how humans remake bodies, selves, and relations with and alongside other beings and places prompts a conceptualisation of kinship, and multispecies relations, that recognises how culture, ecology, biology, history, and futures inflect on and merge into one another without the need for clear and discrete patterns of cause and effect.

The process of *humans* is kin-making. Kin is a wild category (Harraway 2016), evermore than genealogy; it is sets of relations, creations of affines and other odd kin, lines of connection and disconnection. As Ingold (2004) persistently reminds us, it is a dynamic that involves a constant state of becoming; the human interface with the world is always relational, bio-logical, and social, simultaneously. The three chapters in this section heed Ingold's call to lean into these dynamics of ecologies, situating beings (human and otherwise) in the context of an active engagement with the elements of their surroundings. In doing so, the authors weave narratives of multispecies relations, the making/breaking of space and place, and force the reader to think with and through an Ingoldian frame of co-constitution of person, organism, and place.

A niche is the structural, temporal, and social context in which a species exists, including space, structure, climate, nutrients, and other physical and social factors as they are experienced, and restructured by organisms and other agents in a shared environment. An organism's niche is, in many ways, akin to what Jacob von Uexküll ([1934] 2010) referred to as '*Umwelt*', or lifeway. However, many organisms overlap and entangle in their lifeways, and for humans, these entanglements are everywhere. In *On the Wing: Skilled Practice and Learning in Human/Avian Relationships*, Sara Asu Schroer offers a glimpse into a particularly fascinating example of these relations: the one between falcons (and related birds) and humans. The chapter deploys Ingold's notions of enskilment, an inspired narrative of the atmosphere (espe-cially wind), and vivid descriptions of human-avian material and sensual interactions, to immerse the reader in the (en)skilled practices of humans and birds. The chapter narrates the dynamic of a co-constitution of knowing and communicating that emerges from bird-human collaboration in falconry activities. The result is an argument, and narrative that places 'falconers and falconry birds as participants in situated communities of practice in which knowledge evolves through human/avian ways of knowing, perceiving and acting within their environments'. Moving between the UK, Italy, and Germany, the reader spends time with the author and other humans and birds who train together melding their different perceptual abilities into a

form of cooperative relationship that is centred on a degree of cross-species communication and sense-sharing. While not negating or ignoring the issues of domestication, especially the human capture and use of the birds, Schroer offers a frame for considering the overlapping of *Umwelten* and a mutual enskilment. In centring the co-learning relationships of falconers and falcons (and other birds of prey), and their subsequent perceptual and behavioural changes, the chapter reinforces how the Ingoldian concept of the 'organism-person' and the perspective/theorem of enskilment can do solid sensory, explanatory, and perceptual work beyond the more common application to human persons. The relationships illustrate overlapping realms of human and falcon personhood – wherein a dynamism of perception and action is constitutive of perceptual development and concomitant behaviour in both species resulting in the introgression and fusion of *Umwelten*.

In *Displacing the In-Between: Wetlands, Urbanity and the Colonial Logics of Separation*, Paolo Gruppuso and Franz Krause play on and with Ingold's attentiveness to lines (2015) and invite us to consider wetlands and river deltas as points of anthropological focus. Following Ingold's invocation of the 'In-between' they present the dynamics of '*in-between*-ness' as research material and method. This offers a cultural-ecological frame wherein the assumed material substances of landscapes (in this case the reclamation district of Agro Pontino in Italy, and the Mackenzie Delta in the Canadian Arctic) are best seen (narrated, experienced, thought of) as unfolding relations. The chapter invites the reader to immerse in dynamic relationalities exploring how 'the tension of between and in-between emerges in wetlands and river deltas'. Taking the reader through a narrative that entangles people, politics, and ecologies, the authors illustrate how in both regions modernist/colonial projects seek to restructure relations via land reclamation, landscape classification, and the implementation of urban infrastructure, to make people and places more legible, governable, exploitable. It is through these processes that attempts to restrain and curtail fluidity and the 'vagueness of the in-between' are seen. Gruppuso and Krause narrate how the attempts at creating solidity and certainty prepare the ground (literally and figuratively) for governance, taxation, and control. But most of the world is fluid (especially wetlands and riverine deltas) and resists such attempts. By spending time with the land and water, people and places, the reader begins to understand that a former marshland in the Mediterranean region and a river delta in the Canadian Arctic offer particularly fascinating foci for contemplating the emergences and dynamics of 'in-between' places. Comparing the infrastructures, policies and economies in these seemingly very disparate places on earth one comes to ruminate on a diversity of possible articulations of the making of spaces and places via dynamic 'in-between-ness', and how such perspectives might help foster a serious and anthropological rethinking of relations.

In *The Fish's Turn: Ontogenesis and Technique in Amazonia*, Carlos Sautchuk introduces us to the *pirarucu*, paiche, or arapaima (*Arapaima gigas*), an enormous and very charismatic air-breathing Amazonian fish. The *pirarucu* is a long and significant source of protein for many Amazonian

peoples and has become increasingly of value to consumer markets in the wider Brazilian region, China, and the United States. The hunting, and management of the *pirarucu* straddles multiple realities from Indigenous traditions of stalking, harpooning, spirit masters, and the relations between persons (human and not human), to contemporary aquaculture, conservation management, global markets and the complex and often conflictual relations between forest, soils, water, farming and development. Through the interweaving of *pirarucu* lifeways, specifically their breathing of air, and the modes of hunting humans use (material and perceptual), we are offered a narrative wherein tools, environments and bodies are mediated by forms of relation marked by the techniques and objects that connect fish and human. This, Sautchuk argues, is a project of ontogenesis, of becomings. With Ingold's argument of ontogenesis as a guiding light, the chapter draws on numerous others (e.g. Leroi-Gourhan, Bateson, von Uexküll, Simondon), offering a robust and visceral theoretical toolkit to assist the reader in navigating between *pirarucu* and human *umwelten* of hunting and domestication, enskilment and tools, extensions and relations. In the end, it is easy to conclude that the ontogenetic frame offers much more than yet another invocation of an ontological turn.

When reading these chapters, Ingold's older (1980, 1986, 1987) and more recent (2011, 2013, 2022) insistence on challenging the notion of human-animal categories is always at the forefront. Long ago, Ingold argued that it is relations and not categories that anthropology should be engaging with; his most recent assertions invoking heterogeneous becomings for humans and other animals, drive one to see not stable beings or nouns, but rather actions, verbs, as our foci. Nearly 20 years ago in an invited 'anthropological' response to J.M. Coetzee's novel, *Elizabeth Costello*, I wrote that there is humanity in animals, but even more essentially, there is animality in humans. It is true that we are animals, specifically mammals. We can feel like primates because we are primates, a particular kind of ex-ape that manipulates ecosystems across this planet and is capable of intense cruelty and amazing compassion via symbol, language, niche construction, and interaction with other animals and ourselves (Fuentes 2006). Because of this, and as each of these authors note, thinking with and through Tim Ingold's worldview(s) is both a central tool and an absolute necessity for an anthropology that is not *beyond the human* but rather *with* humans and many others in relations, perceptions, enskilment and becomings.

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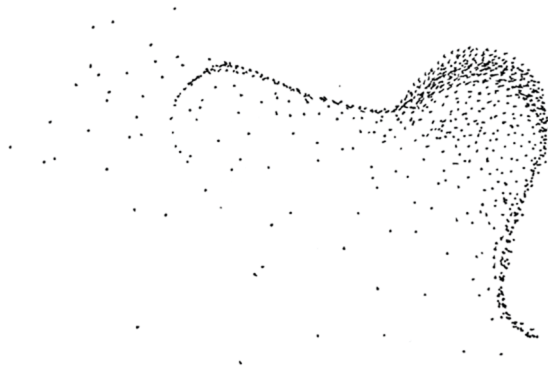
1 On the wing

Skilled practice and learning in human/avian relationships

Sara Asu Schroer

Introduction

Anthropologists have long been preoccupied with understanding the social and cultural practices of 'humankind' and have focused on human activity in the way they approach research topics and analyse ethnographic materials.[1] Other living beings have always been part of these studies. However, they have mostly only been included based on their function for human culture and society, such as their symbolic or subsistence value.[2] While such perspectives still play a role, they also tend to be limited if the aim is to reach a nuanced and holistic understanding of human-environment relations – one in which other living beings are not reduced to mere objects of human meaning-making but are rather approached as playing an active role and as participants in socio-ecological worlds they share with diverse human communities. To acknowledge different animals, plants, and other living beings as playing such an active role means to shift our gaze beyond the idea of the 'Human' as the sole subject of social, cultural and historical analysis and with it to adopt an understanding of ecology that eschews the binary division of nature and society (Ingold 2013). A rethinking of domestication and the relationships between the wild and the tame are examples in which these

broader intellectual developments have manifested in recent years (Anderson 2017; Anderson et al. 2017). Challenging the idea of domestication as being based on a linear history of increasing human dominance over animals and other 'natural resources', these contributions contest the idea of human control and show that boundaries between domesticated and wild realms are not so easily drawn (Oehler 2020). These highlight the more-than-human dimensions of sociality and meaning-making.

While Ingold has not made it a central aspect of his work since TPE to explore human/animal lifeways through ethnographic fieldwork, his concepts allow an opening of anthropological inquiry into social worlds shaped by humans and other living beings. In my ethnographic work on falconry, a practice that involves the cooperative hunting between humans and birds of prey, I was inspired by Ingold's attention to skilled practice and learning as it resonated with the falconers' own narratives of what it means to learn to hunt in cooperation with a bird of prey.[3] In my research, I traced the processes of co-learning as a way to understand how hunting cooperation is developed. Through this, I came to understand both falconers and falconry birds as participants in situated communities of practice (Lave and Wenger 1991) in which knowledge evolves through human/avian ways of knowing, perceiving and acting within their environments. Following the skilled practices of both humans and birds revealed the always partial co-constitution of knowing and communication that emerged from situated activities such as breeding, training, hunting, etc. Learning to cooperate with a bird of prey also means learning to pay attention to landscapes in a different way and becoming attuned to the atmospheric currents of the air that ebb and flow in relation to the ground. This chapter gives an insight into this ethnography of falconry practice by exploring human and avian movements in the 'weather world' (Ingold 2010).

Learning to fly: ethnography with humans and birds

Engaging with ways in which non-human creatures perceive and act upon the world is part of the everyday experience of falconers, and this acknowledgement is an essential part of negotiating a social bond and successful communication with their 'hunting companions'. Falconers' narratives of handling and cooperating with birds of prey resonate to a certain extent with the Uexküllian notion of 'subjective *Umwelten*', yet also reveal a more dynamic understanding of the affective abilities of lived bodies (Schroer 2018a, 2019). A focus on co-learning and shared meaning-making reveals the dynamism of perception and action as being constitutive of the development of birds and humans, which goes beyond that of predetermined perceptual structures and their subsequent actualisation through performative acts (Ingold 2001).

During fieldwork, mainly based in the UK but also Italy and Germany, I accompanied falconers and their birds during three hunting seasons as well as during training and general caretaking practices. Falconers in the UK fly different birds of prey, largely falcons (such as peregrines, but also

hybrid crosses derived from cross-breeding closely related species) as well as goshawks and Harris' hawks. The 'quarry' that is hunted depends on the falconry birds that are flown as well as the landscape practitioners have access to. Falcons usually hunt other birds in the air (typically pheasants or crows in the UK) and learn to cooperate with the falconer whilst flying high above in the sky. Hawks may hunt birds (e.g. pheasants), but they also hunt hares or rabbits and are usually flown directly from the falconer's fist. The different types of hunting require varying skills and aesthetic ideas about the flying performances to be achieved (Schroer 2015).

Traditionally, falconry birds were obtained from the wild, where they were either caught as nestlings directly from the eyrie (the eyass), as young birds on migration (the passenger), or as experienced adult birds (the haggard). This traditional classification of birds of prey is not solely based upon particular biological or physical traits (as, for instance, found in taxonomic species categories), but rather depends upon an emphasis on the life experience of the birds and, with it, the affective relations they have developed with their environments. Nowadays, taking birds from the wild is illegal in most places and only possible subject to strict licensing rules. The birds falconers in the UK keep today are derived from captive breeding. Pioneered in the 1970s, today's captive-bred birds of prey are being bred both privately and by large commercial breeders (Schroer 2018b). Nevertheless, the characteristics of these classifications according to life histories remain relevant in the practical engagement with more or less experienced falconry birds today.

Throughout my ethnographic research, I have been particularly interested in the question of how living beings with different perceptual abilities can establish a cooperative relationship that is based on partially shared communication. I paid particular attention, therefore, to the learning practices in which both humans and birds are involved. These practices, which include different stages of taming, training, and hunting with birds of prey, are particular to falconry and involve a gradual process of familiarisation in which the falcon, hawk, or eagle is gradually accustomed to humans and their associated world (comprising sounds, movements, tools, infrastructure, other domestic and non-domestic animals, etc.).

One of the falconers I worked with in the UK described the beginning of this familiarisation process as follows:

> When you have a new bird, you need to understand that this bird has absolutely no idea what is going on. Up until now she was flying about with other birds in an aviary, only seeing humans from time to time without actually being handled much, and now she sits there on your fist, threatened, and without any idea of what to expect.

The aim of the first weeks in the falconer's care is directed towards overcoming the bird's initial fear and, crucially, to establish a 'common ground' of communication through which the bird and human gradually learn a set of shared and

meaningful ways of interacting. Falconers described this process of familiarisation as a gradual attunement of the bird's senses to the unfamiliar surroundings, having to consider the bird's particular temporal and spatial experience in the way they move and behave towards them. The raptors' visual experience of the world, for instance, allows them to be much more acute and fast in their responsiveness to what is happening around them, thereby allowing them to perceive movements that remain unrecognised by their human caretakers. The techniques adopted in the familiarisation process structure the bird's perceptual engagement with the world and influence it in ways that allow certain aspects to be revealed to the novice bird while others remain hidden. These techniques work by gradually orienting the bird's attention away from sights that might threaten them to more pleasant activities. Feeding especially plays an important role in the creation of positive experiences and expectations associated with the presence of the falconer. This active and structured influencing of the bird's perception (perhaps most clearly illustrated in the use of the leather hood) is aimed at making the bird comfortable in this new environment and hence, is a precondition for the learning processes that are involved in the subsequent training and hunting practices.

This process of familiarisation, however, is not one-sided; falconers routinely underline the importance of being able to attune to and open up towards the particular sensory and perceptual abilities of the bird they are working with. Working with birds of prey in shared tasks, both in regard to concrete learning events as well as lifelong learning experiences is often described as a transformative process. With increasing skills, over time, the falconers' bodily and perceptual abilities change and are significantly shaped by their engagement with their winged companions. Falconers usually perceive the birds as active participants within these learning relationships who, like falconers, can act as mentors or novices depending on their level of experience. As much as the birds play an active role in the enskilment of the falconer, they are also gradually learning skills that attune them to their human hunting companions, thus going through what Ingold, following Gibson, has termed an 'education of attention'. An education of attention is a gradual enskilment of the body and, with it, a shaping of perception and experience (Ingold 2001). Birds and humans can be understood, therefore, to be involved in mutually constitutive relationships of learning practices that shape the way they know, experience, and act upon the world. Through these shared tasks, a particular repertoire of skills and shared meanings emerge that entwines humans and birds in a more-than-human community of practice (Schroer 2015) or hybrid community (Lestel et al. 2006).

When especially explaining the challenges involved in training and hunting with falcons and hawks, practitioners highlighted the difference between the experiential, perceptual, and sensory abilities of birds in contrast to those of humans (humans in these comparisons usually emerged as rather clumsy creatures – lacking in visual acuteness, manoeuvrability, and responsiveness). However, while specific differences were acknowledged, this did not entail an

understanding of a fixed or static species body and corresponding subjective *Umwelten*. On the contrary, the methods and techniques used by falconers to establish hunting cooperation with birds are based on the development of a partially shared set of relationships in which humans and birds learn to interpret the world and each other's movements through a shared set of communicative practices. In contrast to a cognitivist view, in which knowing other creatures' worlds is possible for humans only through reconstructing them in the mind's eye but never directly through their bodies, falconry practice reveals how knowing other worlds emerges from the lived body as a nexus of learned and skilled capabilities. A closer look at the learning relationships between falconers and birds of prey shows that Ingold's concept of the 'organism-person' as well as his ecological understanding of the centrality of skill, applies not only to humans but to living beings more broadly. It encourages us to study human-animal relationships, and communication specifically, not through simplistic notions of anthropomorphism, but rather to be curious about the possibilities and variabilities of living beings (and their bodies) as they are shaped by their learning histories (individual, generational etc.). Whilst species belonging of course matters for the way we perceive and act in the world, specific worlds are not closed in upon themselves but may be more or less connected with each other, depending on the skilled practices different living beings come to share.

Soaring in thermal currents

I am walking with Alistair, the falconer I am currently working with. Trying to keep up with 'Rio', a young Bonelli's eagle flying several hundred meters above us in the sky. We are moving slowly, stumbling over the stony Sicilian hillside, almost blinded by the light of the midday sun. I am trying to keep an eye on the family of honey buzzards that spiral higher and higher in the bright sky above. Fascinated by their effortless flight, I observe them soaring on motionless outstretched wings until they become nothing more than a little black speck. Hot gusts of wind ascend from the stony, dusty ground, forming thermal currents that support the birds ascending into the cooler air above. Pausing to take in the view of the buzzards I am cautioned to keep on going. Alistair is nervous – even though he is not letting it show. Rio, the young Bonelli's eagle we are training with, has decided to go on an exploratory trip in the cooling air above. Used to living in the hilly terrain, Alistair is already far ahead of me, waving his falconer's glove over his head, whistling, sometimes shouting, in the hope that the eagle might still pay attention to his clumsy human companion on the ground. At times Alistair stops to check his telemetry receiver, which gives a faint signal showing that Rio might be catching a soar with the buzzards that now drift further off over the valley. 'Chasing a soaring bird – no point!' Sweaty and exhausted, we retreat to the cabin. We only return in the early evening, when cool air calms the heated world and slowly the birds return closer to the ground. Eventually

we locate Rio. Alistair tempts him with a morsel of food, hoping to lure him back to the glove. Rio descends to perch on Alistair's fist, where he eagerly starts to feed, grabbing the meat with the strong grip of his talons.

When training Rio, we spent much time during the hot midday sitting in the shadow of a tree overlooking the valley and observing buzzards, sometimes eagles, enjoying their soaring flights through the warm thermal winds above. I observed with fascination how they spiralled effortlessly upwards, seemingly without any movements of their wings. Gazing up, I followed their movements until I lost sight of them in the brightness of the summer sky. Whereas to me, the silhouettes of the soaring birds at best revealed whether I was observing an eagle or a buzzard, Alistair – who was sitting next to me – seemed to be able to observe much more. According to the way in which the birds were soaring and how skilfully they managed to stay within the thermal currents, he could tell whether the birds were youngsters or more experienced adults. From time to time, he pointed out when a buzzard would fail to soar within the rising air and 'drop out' by flying into the area of cold descending air that flows down the 'sides' of a thermal. When falconers talked about the soaring of birds in thermals, their stories often seemed to imply that the birds very much enjoyed this kind of flying. If a bird is flown in the summer and catches one of these thermal currents, they are often said to be in some kind of trance in which they just forget about the waving and despairing falconer on the ground and go up to join other birds in their spiralling ascent – just like Rio did.

As I learned from Alistair: for the birds, the thermal has the effect of a lift that they learn to take advantage of by using 'their wings as sails' when flying. Being able to make use of the thermal lift by soaring is a technique that birds learn progressively and can take a great deal of effort for the inexperienced bird. Alistair said that he could observe just how much energy the birds he was training were using by taking account of what he fed them in the evening and how much muscle and general fitness they acquired during the weeks of free flying. To stay within the rising wind and to be able to maintain control and balance requires skill and experience. Through Alistair's explanations, I began to realise that the apparent effortlessness or freedom often associated with bird flight only appears as such to the uninitiated observing the flying birds without understanding the air in which they are moving, which can be supportive at times but also challenging and difficult to manoeuvre in at others. For the falconers to develop their knowledge of flight, it seems to be crucial that they are not just watching birds in the air, but also much more closely, thereby enabling them to understand how the birds' metabolism and strength are influenced by the conditions in which they are flying.

Through learning how birds are influenced in flight, falconers also seemed to be alerted to how airflows are intimately connected to the textures and materials of the ground. As Alistair explained to me, for instance, fields and sandy patches of land tend to absorb the heat of the sun more than other ground conditions. These differences in air temperature, then, create thermal currents that are often

topped with a cumulus cloud. These clouds are often the only clearly visible signs of the thermal to the human on the ground. However, the absence of clouds does not mean 'there is nothing going on up there', as Alistair reminded me when we were walking through the hills trying to find a good spot to train one of the young eagles. Once, we were walking over the hilly fields and buzzards were soaring right above our heads in a clear cloudless sky. In my position on the ground, I did not feel the effect of the rising air, but when Alistair threw up a handful of dry leaves, they immediately spiralled towards the birds above, being drawn upwards on a trail of rising air. For a few seconds the leaves, just as much as the clouds or the lines of flight of the soaring birds, made visible the transparent texture of the moving air in which we were immersed.

Thermal currents are, of course, not the only movements of air that become relevant when flying birds. Especially in hilly or mountainous country, the air becomes what one falconer referred to as 'the white water' of falconry. When helping to train the birds in Italy, I soon learned that, compared to lowland countries, hilly areas have much more turbulent and irregular flows of air currents, and therefore, posed a greater challenge to us as we needed to anticipate how these flows influence the flights of both quarry and bird. In fact, when talking about the air, falconers often drew comparisons to the element of water, or rather rivers and the ocean, possibly to give a more visible impression of the air and its currents. Another falconer, for example, compared flying falcons to surfing waves:

> I would imagine that being a falconer looking at the air is quite similar to how the surfer looks at the ocean and its waves, not just because he enjoys their beauty but also because he can see the potentials they offer. Also, just like a surfer, you have to understand how the shape of the land as well as the prevailing weather conditions create the waves or, in my case as a falconer, air currents you are looking for.

Indeed, as I learned through engaging with falconers and their birds, in many ways, the air and its movements do share certain characteristics with the fluidity of the river or ocean. Their movements are created by the landforms through which they are channelled and dispersed, whilst the form of the land, on the other hand, is also created through the fluid movements of wind and water. Learning to perceive the world through a close relationship with a bird of prey, then, shows that land and air possess a kind of texture or topography, whilst, at the same time, being non-static and always in movement. With Massey (2006), then, landscapes and places can be understood as events, as being caught up in continuous processes of transformation. The conventional language of landscapes and seascapes, however, is ill-suited to capture such a fluid reality, and it would not be helpful to coin the term 'airscape' to complement the other two for these terms confer on the elements of earth, water and air a formal solidity that they lack in practical reality (Ingold 2011); they also confine these elements to separate and mutually exclusive domains.[4]

Observing how falconers and birds of prey move together on the ground and in the air, the contrary shows how earth, air, and water are intimately bound up with one another and are influenced by the forces of the weather with its varying intensities of wind, temperature, light, and shadow. Weather and air movements here, do not seem to be an object of knowledge as, for example, in scientific understandings of meteorology, but are rather understood through the intersubjective, situated, and skilled practices through which they are experienced by humans and birds.

Walking with falcons

This awareness of the air and its movements is also present in what might initially appear to be 'grounded' activities. Not only when flying a bird freely as in the examples above, but also when carrying birds on the fist, falconers need to develop their sensitivity to the air and position themselves accordingly in order to make the fist a comfortable perch for the birds. Certainly, birds of prey have a delicate sense of keeping in balance even during strong wind conditions; when roosting on the swaying branch of a tree with one leg up, for example, they still manage to rest. Yet when on the falconer's fist they are not free to perch where they like and their movements are impeded by jesses, thin leather straps attached to their ankles. Hence, the falconer needs to take care that they are not too badly blown about. This is particularly important as any negative experience for a bird is said to be directly related to the falconer, and if a bird is repeatedly 'annoyed' by unpleasant situations, this can result in a lack of cooperation with the falconer in the future. When carrying a falcon, it is, therefore, necessary that a falconer learns to adapt both his or her walking rhythm and his or her posture to the bird's movements on the fist. To attune to the bird's movements also means tuning into the manifold forces that influence the falcon, hawk, or eagle, especially the weather and air currents in which it is immersed.

On one occasion during my fieldwork, a falconer who owned several falcons that were being trained for the upcoming hawking season took me and a few other novice falconers who were keen to learn from him to carry the birds in some hilly terrain in Wales. The hawks' owner saw it more as training for the novice falconers than for the hawks, who were already experienced hunting falcons. After we walked away from the vehicle and got the birds on our fists, I started to feel the wind that was blowing into the hills, and it dawned on me that this was not going to be just a relaxing stroll. To me, the strong wind seemed to blow from many directions; at times, I needed to lean into it when it was blowing from the front. At others, it pushed us forcefully from the sides. We were six people, each carrying a falcon, as we started to make our way up the hill, walking one behind the other in order to be at least a little bit sheltered from the wind. The grass on the hillsides was bending and twisting in many directions and there did not seem to be a single spot within reach that offered cover from the wind.

Walking up the hills in this strong wind was already a challenge in itself for me, but carrying the bird on my fist at times felt like an almost impossible

task (but, of course, in order to avoid teasing from the others I struggled on). Having a lightweight and winged creature on my fist, I felt for myself how important an adequate positioning of my arm and fist was in order to keep the bird in a steady and calm position despite the tearing winds. The others who were walking ahead of me seemed to walk through a completely different place. Whilst their hair and clothes were blown about by the wind just as mine were, the hawks on their fists looked as though they were not moving a single feather; perching on their fists seemed easy and relaxed. My bird, on the other hand, did not have a great time. When the wind was blowing from the front, she sometimes spread her wings and was shakily lifted. At other times, the wind was blowing up her back, pushing up against her tail feathers, which threw her out of balance and made her flap her wings sharply to regain control. On other occasions, the hawk got so frustrated that she started bating in an attempt to get away from her uncomfortable perch. Once she realised that this did not work, she let herself fall, now dangling her head under, flapping about with her wings. After a while – probably out of concern for the wellbeing of the hawk – one of the others returned to help me get the bird back on the fist.

Clearly amused by my clumsy ineptitude in carrying the hawk, Michael, one of the young falconers, showed me how to adjust my arm and recommended that I try to keep the hawk close to my body, always setting her face into the wind so that the air would flow over her wings rather than get under her tail feathers. I tried it again and in the course of our walk through the hills I managed, gradually at least, to improve the bird's position by trying to always place myself into the wind with the falcon held close to my chest, although 'my' bird never seemed as comfortable as the others.

Carrying a hawk turned out to be a task that required skill and experience, as well as the ability to be responsive to the bird, whose signs of discomfort, if properly understood, needed to be answered immediately. However, this negotiation between human and birds was not only dependent on their interaction but was also influenced by other factors such as the conditions of the ground, and, significantly, the air that flowed around us (and through us) and that forcefully influenced our movements.[5]

Attunement and Atmosphere

The experience of walking with a falcon perched on the fist, similar to collaborating with a bird in flight, highlights the learned corporeal attunement necessary to do these tasks smoothly. Attunement here, as Vinciane Despret (2004) has argued, is related to a sense of becoming with others and learning to be affected in novel ways. Building on Ingold's notion of enskilment as education of attention, the case of falconry reveals that this process of attunement is not directed towards individual beings isolated from their particular environments. On the contrary, it helps us to understand relations in an ecological sense, in which co-constitution renders a conceptual separation of experiencing being and environment flawed.[6]

For Ingold, enskilment plays a central role in broader discussions of how mind and body, environment, and experiencing subject, culture, and nature are related. Skills, in this context, are not reduce-able to 'techniques of the body', but are understood as 'the capabilities of action and perception of the whole organic being (indissolubly mind and body) situated in a richly structured environment' (Ingold 2000: 05). Capabilities of living organisms (human and otherwise), skills, and the practices through which they grow, are thus as much biological as cultural or social. Underlying this understanding is a critique of the idea of the transmission of cultural knowledge as pre-formed and handed down from one generation to the next. Instead, he argues that skills are not so much transmitted from one generation to the next but rather *regrown* in each, 'incorporated into the modus operandi of the developing human organism through training and experience in the performance of particular tasks' (Ingold 2000: 5).

Studying these tasks and emerging skills, in turn, requires a perspective that situates the practitioner in landscapes co-constituted by the activities of a myriad of living beings (and other processes). This perspective he called the 'dwelling perspective' allows us to conceptualise human beings as 'organism-persons' that form part of the fabric of biological and social relations in a world inhabited by beings of manifold kinds. Hence, aiming to move beyond the conception of humanity as standing outside the 'natural realm', towards situating social and cultural relations within a wider web or as Ingold would later call it, a 'meshwork' of ecological relations (2007, 2011). Responding to critiques of the dwelling perspective that is related to phenomenological perspectives, e.g. as represented by the work of Martin Heidegger, Ingold, in later work, qualifies this notion further. With a critical view towards Heideggerian philosophy and the sharp division between human and animal, world and environment, and the being and existence it entails, Ingold points out that one of his 'aims in developing the dwelling perspective was to show that organism-and-environment and being-in-the-world offer points of departure for our understanding that are ontologically equivalent, and in that way to unite the approaches of ecology and phenomenology within a single paradigm' (Ingold 2011: 11).

To understand the constitution of humans and birds in this processual reading, Ingold's figure of the organism-person (2000: 47) is helpful as it emphasises the co-constitution of the social and biological development of living beings that influences their ability to sense, perceive and ultimately know the world. Falconers gradually learn to experience or perceive the environment, in relation to the airborne creatures they are working with daily. Hence, they learn to respond to the world in ways that may otherwise be inaccessible to them. This, I would argue, is especially the case for atmospheric forces of the weather and the aerial topography of the places they are moving through.

In current anthropological writing, atmospheres are often identified as intermediary phenomena (Bille et al. 2015; Throop 2014) and as a medium

of perception (e.g. Ingold 2011). In his writing on the 'weather-world', Tim Ingold accuses current philosophers of atmospheres of having emptied the atmosphere of air (Ingold 2015: 73). Following philosopher Irigary (1999), he argues that social analysis of landscapes has often lacked the inclusion of less solid and tangible phenomena such as weather, wind and the air we breathe (e.g. Ingold 2010). This, he argues, is related to the modernist notion of nature in which the surface of the earth has come to stand in for the boundaries of materiality, rendering the air immaterial. In order to get away from this modernist ontology, he calls for a more holistic understanding of atmospheric phenomena as at once aesthetic/emotional and physical/meteorological.[7] Despite this call, for a holistic understanding of atmosphere, Ingold falls back on an idea of the world as comprised of earthly substances, on the one hand, and the aerial medium, on the other:

> On no account, however, can the air be converted into an object that the child, or anyone else can have a relationship with. Thus the walker does not interact with the air as he sets his face to the breeze, but feels it as an all-enveloping infusion which steeps his entire being. It is not so much what he perceives as what he perceives in.
>
> (Ingold 2015: 12)

As the ethnographic stories above show, when flying or walking with birds, air currents indeed have an immersive quality, but they also allow for response and interaction. Understanding these atmospheric forces as a medium of perception does not help to account for the manifold ways in which humans and birds come to know and interact with currents of air as they negotiate their cooperation across the lands. As Caroline Gatt (2018) argued, Ingold's notion of atmosphere as a medium, and thereby as a precondition for any world-making activity, renders the atmosphere immutable by social and ecological change. Rather, walking with a bird – either flying in the air or perched on the fist – draws attention to the forces of the weather and how the air ebbs and flows in relation to the ground. Materiality here is a relational achievement and the experience of falconers sensitised to the aerial perceptions of birds reveals that air currents have material qualities and textures that influence those moving within them. At the same time, this experience of air also corresponds with an experience of the ground that is not that of a fixed or solid substance (see Pijoan in this volume), enveloped by surfaces, but rather constituted by different materials that mingle, evaporate, and change through varying intensities of light, temperature, humidity, and wind.

Conclusion

Tim Ingold's work has long dealt with peoples' relationships with their environment and other animals. Drawing inspiration from a wide array of

disciplines and above all Northern Indigenous narratives, practices and philosophies, his work has been central to the development of environmental anthropology and the study of human-animal relationships. In this chapter, I addressed some of his ideas gathered in the Perception of the Environment, i.e. the 'organism-person' and enskilment, as well as the notion of the 'weather-world' (advanced in later works). Based on my doctoral research on the practice of falconry, I have shown that communication beyond species' boundaries is best approached through a focus on the learning histories and enskilment practices creatures with different perceptual abilities are involved in. Cognitivist and human-centric notions of relationship and meaning-making are not able to account for the forms of transspecies communication evident in falconry practice, in which humans and birds learn to build a cooperative relationship. Part of this learning process is the attunement to the environments through which falconers and falconry birds move. Moving with an airborne creature means forming perceptual awareness of the aerial qualities and atmospheric milieux of particular landscapes. Falconers, birds, landscape, and air are all imbricated in processes of differential co-constitution, and it is this understanding that creates openings for more-than-human communicative processes.

Acknowledgement

Notes

1 For an early call for paying more careful attention to humans and other animals in anthropological research, see Barbara Noske (1989, 1993).
2 Classic anthropological texts often mentioned in this context are Edward Evans Pritchard's The Nuer (1940), Claude Levi Strauss's Totemism (1962) as well as the work of cultural ecologists such as Julian Steward (1955) and Marvin Harris (1968).
3 I completed my doctoral dissertation 'On the Wing: Exploring Human-Bird Relationships in Falconry Practice' (2015) at the Department of Anthropology in Aberdeen (supervised by Tim Ingold and Andrew Whitehouse).

4 For a further critique of the notion of '– scape', see Ingold 2011: 136–140).
5 See, also, Louise Senior 2016 for an example of skilled practice in gardener/wind relationships).
6 See, also, Gatt (2018) on the relationships between experimental theatre makers and atmospheres.
7 For an ethnographic study dealing with this aspect in the context of wetlands in Agro Pontino, Italy, see Gruppuso 2018.

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2 The fish's turn

Ontogenesis and technique in Amazonia

Carlos Emanuel Sautchuk

The *pirarucu, paiche* or *arapaima (Arapaima gigas)* is one of the most iconic life forms of Amazonia, having played a key role in the economic and environmental history of the region along with rubber trees, guarana, and açaí, for example. The world's largest scaled fish, the pirarucu can reach up to 3 metres in length and 200 kilograms in weight. In addition to gill breathing, the fish needs to gulp oxygen from the surface an average of every 15 or 20 minutes, an evolutionary adaptation to the low-oxygenated rivers and lakes of the Amazon. Traditionally fished by Indigenous peoples and river dwellers using harpoons, pirarucu catches over the last few decades have been increasing through a community-based scientific arrangement with environmentally sustainable quotas. In more recent years, the fish has also been farmed in tanks and ponds and is even being exported to other areas of Brazil and abroad, where it is even classified as an exotic predator (Pereira et al. 2022).

These different forms of life of the pirarucu involve particular modes of relationship, distinct material and environmental configurations, as well as specific forms of human organisation and abilities. Perceiving the logic of these different arrangements is an important step towards comprehending

the changes that Amazonia has been experiencing. However, how can we establish a comparative framework for these situations without setting out from a preestablished understanding of what is animal or human or without fixing each of these arrangements as stable systems or successive stages in the Amazon region's development?

The dialogue with Tim Ingold's work provides fecund alternatives for our comprehension of this scenario. This begins with the inspiration provided by his early ethnographic focus on human relationships with reindeer as sentient beings (Ingold 1976) and also his wide-ranging endeavour to comprehend the various forms of relationship – hunting, pastoralism and ranching (Ingold 1980) – with this non-human animal. In more propositional terms, Ingold (1988) was one of the first to promote an interdisciplinary renewal in interpretative possibilities that significantly transformed how anthropology explores the relationship between humans and non-human animals.

His pioneering investment in this question would become a landmark in the field. Already at this time, Ingold (1988: 10) observed that the finding that numerous people treat animals as persons did not inevitably signify a mechanism of intellectual anthropomorphisation. In so doing, he indicated the possibility that different forms of communication and relationships need to be researched and considered if we are to be able to answer the question of 'what is an animal'? This argument would gain traction throughout his work, culminating in Ingold's (2022) proposal to consider animals as verbs, explicitly including humans in this relational production. This stance marks the distinctiveness of Ingold's proposal from the movement surrounding multispecies anthropology. Indeed, he observes that this movement does not represent any major novelty in terms of focusing on non-humans in anthropology, bearing in mind, for example, the existing literature on hunter-gatherers. For him:

> The problem with multi-species ethnography is not just its anachronism, however. It lies rather in its very appeal to species multiplicity. For only in the purview of a universal humanity – that is, from the perspective of species being – does the world of living things appear as a catalogue of biodiversity, as a plurality of species. If we abandon this sovereign perspective, then the very notion that creatures can be grouped on the basis of similarity and divided on the basis of difference, and with it the concept of species itself, will need to be rethought.
>
> (Ingold 2022: 307)

In his most recent formulations, Ingold establishes what an approach that eschews the notion of species would look like. He proposes an anthropology by correspondence that focuses on the emergence of heterogeneous becomings that conjugate humans and other animals, not as stable beings but as actions, or *verbs* (Ingold 2022: 322).[1] Seen in isolation, this formulation appears somewhat risky perhaps, lacking empirical backing or maybe

even being overly speculative. However, the author's work has diverse layers and evolutions. To appreciate the true significance of Ingold's argument concerning the relationship between humans and animals, we need to return to some of his earlier ideas contained in *The Perception of the Environment*, comprehending the ethnographic and theoretical roots of his thinking and its subsequent developments.

Since his first writings, Ingold has linked the understanding of the relationship between humans and animals to how we understand perception of the environment and relations with objects. This is why the lasso (Ingold 1993) or the spear (Ingold 1987) perform such a central role in his earlier discussions of the relationship with reindeer or the relations between hunter and prey. However, this stance is far from limited to the author's past work, as shown by the more recent discussion on objects like the cello (Ingold 2013: 100–2). Indeed, other authors influenced by Ingold continue to extract significant results from this approach that associates beings and environmental perceptions with objects and material transformations, such as in concrete expressions of domestication (Anderson et al. 2017) or in human relations with dogs in the Arctic (Losey et al. 2018).

Moreover, his attention to objects, like his distancing from multispecies perspectives, cannot be identified either with another contemporary movement linked to the material or agentive turn, as Ingold (2011, chap. 2) himself has emphasised. One of the points of divergence resides precisely in the way in which Ingold considers this theme from an eminently relational and dynamic perspective, without downplaying human protagonism, visible in his exploration of technique, as clearly demonstrated in Chapters Fifteen to Twenty of *Perception*. However, this strategic interest in an anthropological approach to technology can be traced back to earlier writings, including a conceptual and programmatic investment (Ingold 1997) that benefitted from a close dialogue with authors linked to a study of this topic (Ingold 2001), especially in France (Sigaut 1994). Although something of an ebb can be detected in the predominance of the terms technique and technology in the last phase of Ingold's work, this does not imply any kind of diminution in his interest in the theme of the mediated relationship between humans, objects, animals and the environment.

For the purposes of this chapter, however, what should be emphasised is how Ingold's interest in technique is directly linked to another that, previously more submersed and implicit, has shifted into the foreground, occupying an increasingly privileged place in his writings. This is his concern with ontogenesis, the way in which things and beings – including humans – are open and permanently configured in processes of growth and movement. Indeed, Ingold (2022: 359) goes as far as to advocate an ontogenetic instead of an ontological turn. Consequently, understanding this relational field requires accounting for the terms of the relations involving humans, environments and diverse non-human animals. In this goal, his focus on technique is fundamental.

In fact, Ingold himself (2014) leaves no doubt about this by highlighting the five main works that have had an impact on his thinking. He begins by citing the relational view of evolution by Henri Bergson (1911), a philosopher who transits in different phases of Ingold's thought and who promotes an approach centred on ontogenesis. His list ends with what he considers one of the masterworks of anthropology, written by André Leroi-Gourhan (1993), an author dedicated to understanding the role of techniques in human evolution, in social life and in the relationship with the environment. As these authors are connected and not too much remembered in contemporary anthropology, it seems important to emphasise here the fundamental (but often implicit) role of their ideas in Ingold's thinking.

We should not get ahead of ourselves though. If Ingold can help provide a clearer understanding of the different configurations assumed by the pirarucu and those humans whose life revolves around this fish in Amazonia, I believe that the pirarucu also helps us discern the contours of these less frequently evoked correlated axes of his work: technique and ontogenesis. In fact, I argue that for Ingold it is impossible to speak about non-human animals without perceiving the ontogenetic processes that include – particularly when they involve humans – objects and environments mediated by techniques. Let us see how this presents itself by exploring the different ways in which the pirarucu becoming in Amazonia, maintaining our comparative focus on what would typically be taken as an unusual organic characteristic of this animal – its aerial respiration – to suggest instead that it should be seen as a quality that emerges from the forms of relation marked by techniques and objects that connect fish and humans and its ontogenesis.

The pirarucu in Amazonia

The pirarucu is mentioned by numerous travellers, naturalists, and historians who visited the Amazon. Swiss zoologist Louis Agassiz called it the cattle of the Amazon due to its size and importance in the region's occupation. In his classic work on fishing in the Amazon, José Veríssimo (1895) dedicated a chapter to the pirarucu, typically caught using a harpoon. Today, the pirarucu remains a major source of protein for the Amazon's inhabitants, including some indigenous peoples and rural and urban populations. This includes communities living by the rivers, who are called or call themselves *ribeirinhos* (river dwellers) or *caboclos*. This complex and, sometimes, pejorative category has been discussed by generations of anthropologists (Adams et al. 2009).

The classic modality of harpoon fishing (or hunting) prevails, in which fishermen on paddle canoes search for fish in the lakes and floodplains. When the fish turns, especially as it comes to the surface to breathe, the harpooner tries to approach unperceived, close enough to throw his weapon. If the fish notices his movements, though, a chase ensues. Since the waters are dark, the harpooner is not normally able to see the fish directly but acts based on

signs produced on the surface by the fish's movements below. The pirarucu, which is considered a person, is known to be a clever and skilful fish, capable of tricking and outwitting the fisherman. Many aspects common in the ethnography of hunting are also present here: pirarucus are controlled by spirit masters, and capture actually involves consent, that is, the fish must ultimately give itself up to the harpooner (Sautchuk 2019, 2023).

By the late twentieth century, however, the intensification of other modalities of fishing, involving nets, hooks, and motorboats, along with the increase in the Amazon's human occupation, had led to significant declines in pirarucu populations in some areas. This spurred conservationist concerns that led to bans and limits on fishing, but also to other kinds of relations forming with the pirarucu. One of these is the so-called sustainable *management* of the fish in natural lakes by traditional communities, organised around annual fishing quotas. This system emerged from an alliance between environmentalists and social movements from river-dwelling communities. Since 2004, collective quotas have been set based on the fish stock of the area concerned. The stock size is estimated by means of a counting method based on the harpooners' perceptual expertise on pirarucu behaviour, especially when it surfaces to air breathing. Today, this method is considered a sustainable way of exploiting the fish and is spreading throughout the Amazon region, including across Brazil's border, as a legal alternative for catching this fish.

On the other hand, and in tandem with the recent development of aquaculture in Brazil, scientific institutions as well as private and state-sponsored initiatives have encouraged fish farming of pirarucu on various scales. Besides the quality of the flesh (pirarucu is known as the Amazon codfish), the fish is also valued because of its "rustic qualities" – especially its double respiration system (aerial and gill), which enables breeding in low-oxygen ponds making the fish more tolerant to *in vivo* transportation and handling. Nonetheless, pirarucu farming has faced challenges associated with reproduction and feeding in fishponds. Its reproduction cannot be metabolically induced, and its carnivorous feeding behaviour becomes an economic and logistic problem in captivity. Notwithstanding these issues, pirarucu fishing has been spreading rapidly, supplying urban consumer markets in Amazonia, other Brazilian regions, and even in China and the United States.

How do we respond to this fast-changing scenario without appealing to simplistic and sweeping generalisations based on an intensified human mastery over nature, or on a transition from traditional to modern ways of relating with the fish? The notion of domestication is frequently evoked in support of this kind of meta-narrative. But this unilinear view resonates poorly with the case of the Amazonian pirarucu. First, the three kinds of activity involved – fishing, management, and farming – are not necessarily successive but coetaneous and interrelated, often involving the same groups of people or even the same individuals. Secondly, ethnohistorical and archaeological studies have shown that fish management on lakes and fishing in

artificial ponds existed before European colonization, as well as during the first centuries of colonisation in the Amazon (Erickson 2006, Schaan 2011, Prestes-Carneiro 2017).

Domestication and skills

I agree with Lien (2015) and others (Cassidy & Mullin 2007, Anderson 2017, Stépanoff & Vigne 2018, Swanson 2018) leading a recent movement in anthropology that sets out to revise the notion of domestication to encompass gradual, reversible, and multiple processes, involving non-intentional and unpredictable aspects and, above all, reciprocal effects on humans and animals (Sautchuk 2016). As Lien reminds us, however, this conceptual revision must be accompanied by new forms of empirical engagement (including outside of social anthropology) allowing us to circumvent anthropocentric and monolithic renderings of domestication.

Here, it is worth pointing out that Ingold's proposals for making sense of human-animal relations are grounded precisely in a critique of the wild-domestic binary, evident since his earliest ethnographic work on reindeer herders. Back then, Ingold underscored some aspects that would become central and more sophisticated in his later work: a relational perspective on human-animal relations and an approach unconstrained by the disciplinary boundaries of social or cultural anthropology. In *Hunters, Pastoralists and Ranchers*, which brings a dialogue with biology and archaeology, Ingold (1980) called attention to the conflation (or confusion) of relatively independent processes – taming, breeding, and herding – under the same term of domestication. He also showed that relational modes must take into account scales of action by highlighting the specificities of ecological relations, such as parasitism, predation and symbiosis. He, therefore, came to understand relations with reindeer not as fixed states or forms, but as complexes of relations made up of different combinations – thus distancing his approach from the unilineal and progressivist scheme of the hunting-herding transition (Sautchuk & Stoeckli 2012). He rests much of his conclusions on an appreciation of technical behaviour so ranchers need skills also seen in hunters, hunters often prey on animals with which they have a close relationship, and herders can handle free animals. It is in these relationships that Ingold sees ontogenetic potential, not in pre-established classifications or beings.

In that regard, it is possible to note significant convergences between some of Ingold's concerns and those of the tradition of studies on domestication that emerged from the French tradition of cultural technology (see the Journal Techniques & Culture). Space constraints prevent me from making due reference to the works of Digard (1990) and Sigaut (1988), so I shall recall only two aspects advanced by André-Georges Haudricourt and André Leroi-Gourhan, heirs to the approach to technique first proposed by Marcel Mauss (2006). Haudricourt (1969) laid out an approach centred on how human action comes to be associated with the actions of other beings to

form homologous systems of relations, present among humans and between humans, animals and plants. His argument is quite close to the one Ingold expounds in a debate with Rane Willerslev (Willerslev et al. 2015) when he called into question how the idea of human mastery has been differently manifested in particular domestication systems. Actually, Leroi-Gourhan (1993), in his book *Gesture and Speech*, also turns against abstract approaches in the human sciences to advocate a sort of techno-zoogenesis of the human, coming to understand human-animal relations in terms of different modalities of grouping.

This brief mention of the French school of the anthropology of technique is not random since Ingold himself has maintained a longstanding dialogue with this literature. It is true that he refers to the French debates on techniques with respect less to animals than to tools and humans. But I think it is precisely this kind of perspective that allows Ingold to circumvent species-centered or stepwise approaches to the wild-domestic continuum. In his more recent proposal for anthropology beyond humanity, Ingold (2022) recalls his early work on reindeer precisely in order to advocate an anthropology not based on the notion of species. For him: 'We should regard every living being, in short, as a going on in the world. Or more to point, to be animate – to be alive – is to become'; so 'the scope of anthropology must always strain beyond the threshold of the study of humanity'. Here, Ingold (2022: 308–9) criticises the idea of a mere displacement of agency or subjectivity between humans and animals, thus rejecting the multispecies approach.

Ingold's radically relational and dynamic approach based on notions of animacy, and materials form various connections with Leroi-Gourhan's anthropology of technique, as Ingold (1999) himself has underscored at various moments in his oeuvre. In Leroi-Gourhan's technical-zoological posthumanism, technique is not what goes on between humans and the environment (or between species), but a process encompassing and engendering both beings and tools. We note that this non-anthropocentric stance on technique, which considers it not as an artifice but as a phenomenon of life, is central to Leroi-Gourhan's and Simondon's conceptions of new humanism. It is no wonder that Ingold refers to them at different times since both have as important inspirations as Henri Bergson.

Inspired by this approach, rather than asking about interactions between two species – humans and pirarucu – in multiple situations, I found it more appropriate to explore the relational modes through which the former become harpooners, fish managers and fish farmers, and the latter become prey, stock and reared animal – or, more precisely, the specific ontogenesis that presides over each of these situations. To this end, it is useful to place the focus on tools, in the eminently relational sense of Leroi-Gourhan, as Ingold (2011: 60) reminds us, to understand the tool not as a thing in itself, but as an extending field of actions and movements, immersed in other rhythms.

It is worth pointing out how the focus on techniques and objects is related to the notion of ontogenesis through one of the central concepts in Ingold's

work, the notion of skill. First, we can recall Ingold's well-known citing of Bateson's examples to affirm the ecological dimension of skill, eschewing its consideration as an attribute intrinsic to the organism precisely to include tools in the flow of perception and action. He evokes the central role that Bateson (1972) confers to the axe in the relation between the skilled woodsman and the tree, or the walking stick in the circuit between the blind person and the pavement. Subsequently, when he seeks to move beyond the notion of the organism, Ingold (2013: 103) evokes the notion of transduction, inspired by Gilbert Simondon (2020), to indicate the role of objects – such as the kite and the cello – in the association between bodily flows (of the kite flyer and the musician) and material flows (of air and sound). In other words, here, he takes the technical object as the expression of one flow in relation to the other two. Put otherwise, the emergence of the object is what sets in relation to these two other flows (human and material), thereby marking the role of skill as an outcome of this ontogenetic field, which is at the base of the notion of correspondence. Indeed, this makes it possible to treat the process of learning a skill as the genesis of a relational field that transcends the learner (Sautchuk 2015), allowing us to contemplate the technogenesis of the human.

Amazonian technogenesis

Adopting this approach, we can see how technical objects can provide a gateway for comprehending the emergence of these different relational systems in Amazonia, in the different configurations assumed by the pirarucu and the humans who form relations with the fish. This can without doubt comprise an important framework for us to discern how life forms like the pirarucu fish and its double breathing have been involved in transformations in the Amazon. The harpoon is a weapon that enables a phenomenological convergence, establishing a physical and semiotic connection between two beings that inhabit distinct mediums. For the harpooner, the weapon establishes a subjective space that, in the Amazonian case, is directly connected to the pirarucu's air respiration since it is the animal's surfacing to gulp oxygen that unleashes a set of perceptual and motor dispositions, as well as instituting a singular kind of spatiotemporal system. In this sense, the harpoon can be said to institute the fisherman's *Umwelt*, which I define here as based on a motor-perceptual field that projects itself around the canoe. Inspired by Von Uexkull (2010), we could think the harpooner's *Umwelt* includes some areas where his capacities for capture are more efficient than others, depending on how he is able to engage with the fish. While the fisherman lives in this type of phenomenological space established by the relationship between water and air, the pirarucu, for its part, also moves in this *harpoonmorphic* environment. Its escape strategy involves minimising this amphibious weapon's affordances, whether by switching direction or by hiding behind, under, or away from the canoe where the harpooner's motor-perceptual capacities are nullified.

All of this happens as part of a complex biosemiotics – a grammar of signs that projects itself onto the surface where the aquatic and aerial mediums meet and is perceived and handled by both the pirarucu and the harpooner. However, the harpooner's success is always predicated on the emergence of the pirarucu in his *Umwelt*, and on the harpoon's trajectory convergence with the fish's future movements, which are predicted via signs visible on the water surface. To be skilful with the harpoon is indeed a precondition to this *Umwelt*, but the fisherman is always reliant on the fish's willingness to show itself to him, and then to make a synergetic movement towards the travelling harpoon already launched.

This aerial respiration, in tandem with the harpooner's perceptual ability to discern each particular fish and its size, were key aspects for developing another relationship: the counting method that has formed the basis for the management of pirarucu populations in diverse areas of the Amazon (Castello 2004). This sophisticated visual and auditory perception, based on the size of the bubbles and the intensity of the noise produced by the pirarucu when it rises to the surface at the moment of aerial breathing, is mobilised by a team of fish counters that covers every lake of a region in its entirety. However, by displacing perception from the motricity of the harpoon to that of the pencil, another kind of engagement emerges. Quantitative records and their statistic processing fix a relationship between the group of fish counters and the fish stock, which is followed by a mode of capture normally performed collectively using nets. This estimate will determine the total quota of fish allowed to be captured the following season. The written record changes the harpooner's person-to-person relationship into a relation extended in time and involving a larger collective – a group of fishermen engages in a relationship with the fish population, to increase the latter and therefore enable further and sustainable catches. We could say that the characteristics and skills that emerged with the harpoon are now reconfigured in connection with another technical object – the pencil that records the counts and enables a reorganisation and indeed the very idea of 'herding' pirarucus in a lake, which acquires a sense of community control, protecting this stock over the course of the year for a group fishing activity.

An individual ownership relationship with the pirarucu occurs in the various forms of aquaculture that have been spreading throughout the Amazon region. The ponds (or tanks) should be understood as enclosures, that is, as devices that separate and contain; in other words, they limit the fish's movements and situate them at points well connected to supplies and consumer markets, and so forth. The ponds are part of a new Amazonian geography and infrastructure that links the immobilisation of bodies of water to the fluidity of roads. It should be noted that the domestication processes normally generate alterations in the environment (Anderson et al. 2017), which cause certain types of relations to emerge. In the case of Amazonian ponds, it becomes necessary to feed and reproduce the fish; in order to do so, farmers basically manage the ponds – that is, they allocate the fish in

enclosures and adjust the quality and quantity of water and other variables. It can be said that pirarucu aquaculture has, thus far, involved above all the production hydric circumstances favourable to the animal's development. In Haudricourt's (1969) terms, it could be understood as a negative indirect action – that is, it produces environments that contribute to certain fish behaviours. It is precisely in this sense that aquaculturists define their work as a way of creating water. When it comes to reproduction, for instance, it is indispensable to bring together fish couples and make the ponds suitable for procreation (soil, temperature, water translucence, season, and so forth). Yet this does not guarantee success. Although pirarucu farmers may think of themselves as "fish cupids," the outcome still relies on the properties of the hydric environment and the uncertain "chemistry" between the couples.

Techniques and ontogenesis: on turns

To avoid a unilineal and anthropocentric view on domestication, as well as the hylomorphic perspective of multispecies or material agency approaches, I chose to invest in techniques as the genesis of these relations, also inspired by Ingold's reflections on materials, environment and animacy. In this sense, Amazonian harpoons, pencils and ponds are better understood not as things in themselves, but as part of processes of becoming – or ontogenesis, in the way Ingold (2022) conceives the term, also inspired by the philosopher of individuation and techniques, Gilbert Simondon (2016). For the latter author, ontogenesis (different from ontology) always involves individuation systems (that may be material, biological, psychological and social), which imply metastable tensions. This means that, in such situations, the beings and things involved are always predicated on the actualisation of uncertain relations.

Since *Evolution and Social Life*, Ingold (1986) has included numerous references to Henri Bergson in his work, in particular concerning the influence of Bergson's ideas on evolution and ontogenesis. In fact, as Ingold himself observed more recently, 'the essays assembled in *Perception* are centred, accordingly, on a conception of the human being as a singular nexus of creative growth, or ontogenesis, within a continually unfolding field of relationships' (2022: xi). It is within this framework, indeed, that we should read the comparison that he makes between authors deeply influenced by Bergson, like Leroi-Gourhan and Simondon, who conceive technique as a process for instituting new realities. The technique has a creative potential, which can even generate alterities, mobilising the human from within. This type of approach or technique leads in some ways to a kind of posthumanist approach (Ingold, 2022: 319, 1999), quite different from the notion of technology present under Western modernity (Ingold, 1997: 107, Marx, 1997), which is nothing more than an ontological claim in favour of the role of rationality and instrumentality over an inert world (Ingold 2011: 251; 2000: chap. 16). From the anthropological viewpoint, moreover, this non-utilitarian approach

to technique, by establishing itself as eminently relational, allows human protagonism to be explored still but without anthropocentrism and while avoiding some of the traps of the multispecies perspective, or the focus on the agency of artefacts.

Indeed, the pirarucu's air-breathing cannot be viewed in isolation, as an organic or a behavioural factor, since it emerges as a relational dimension with different properties and consequences depending on the configurations that the fish establishes with processes involving the harpoon, the pencil, or the pond. Breathing has different roles, forms and meanings in these distinct processes of transduction. In this sense, and put somewhat simplistically, the *harpooner-harpoon-prey* ontogenesis is based on a tension where the movements of the harpoon and fish must converge at a certain point in the future for the catch to be successful. In this case, breathing plays the role of establishing (or not) the contact between two beings whose selves are intimately linked to the agonistic relationship of duel and seduction between them. The turn that the fish makes on surfacing to breathe is a sign of the trajectory that it will take subsequently, providing a clue for the harpoon's trajectory.

In the case of the *fish counter-pencil-pirarucu stock* ontogenesis, relations between the team of fish managers and fish populations have to yield an appropriate estimate in order to establish catch levels for the following fishing season, in turn ensuring the growth or maintenance of the stock and, as a consequence, the continuing legal authorisation for management, that comes from environment agencies (Sautchuk 2019). Breathing, thus, enters the equation as a factor in the spatiotemporal unfolding of the encounter with the fish, as well as a trigger for a shift in scale, transforming the extremely personalised relation of this Amazonian fishing into a relation between collectives. The fish's turn on the water surface is an indication of its size and sex, as well as a mark that identifies it, avoiding duplicate counts and establishing the idea of a population in a waterscape. Finally, in the *farmer-pond-reared animal* ontogenesis, the chief variable is the successful procreation of such a sly and obstinate fish. No matter how carefully favourable conditions are set up, the farmer predicates his existence per se on the risky outcome of the fish's decisions to procreate (or not). More than a few have failed to become pirarucu farmers. In this case, air-breathing makes the pirarucu a fish capable of surviving in low-oxygenated environments, meaning less expenditure on aeration and the possibility of increasing stock densities, delineating the specific geography of domestication. The fish's turn when it surfaces to breathe in ponds is a sign of its health and the water's quality.

Thus, I conclude by claiming that 'to human' (as Ingold would say) in relation to the pirarucu – in other words, to prey, to count, or to raise – is to emerge from the ontogenetic tensions triggered by the operative dynamics involved in the harpoon, the pencil and the pond. From the human perspective, if there is learning through the education of attention here, it is aimed

towards integrating these movements of ontogenesis. This means that the relations are not between humans and animals, but rather that humans and animals are emerging from wider flows, involving objects, materials and corresponding techniques. In this context, breathing is transformed into a multiple act that unleashes different possibilities: meeting, collectivising or densifying.

Technical objects themselves do not breathe but they reconfigure the relationship between air and water, as well as the properties and forms of action of different beings, including humans and pirarucus. If Ingold's work helps us observe the different configurations of the pirarucu without starting from a focus on species, it is precisely because of two propositions that do not always gain much attention in his work but that are nonetheless foundational, transversal, and interconnected. In his discussion of the technique in *Perception*, Ingold (2000: 372) already established that 'artefacts grow like organisms, within the equivalent of a morphogenetic field', which includes humans and non-humans. At the same time, he proposes in this same seminal book 'a conception of the human being as a singular nexus of creative growth, or ontogenesis, within a continually unfolding field of relationships' (2022: xi). It is precisely for this reason that Ingold (2022: 359) asserts that if we are to advocate some kind of turn in anthropology, this should be ontogenetic rather than ontological. The creative capacity of the fish's turns when it surfaces to breathe seems to say the same.

Note

1 This kind of proposal has exerted a significant influence on approaches to this topic in anthropology, including those focused on fish, as demonstrated by the excellent work of Lien (2015) on salmon farming.

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3 Displacing the in-between

Wetlands, urbanity and the colonial logic of separation

Paolo Gruppuso and Franz Krause

Introduction

In his work on the history of lines, Tim Ingold distinguishes '*between and in-between*' (2015: 147). The former qualifies things that stand in the middle of other things which are divided from each other; the latter indicates the process through which things come into being, corresponding with each other and joining one another (2015: 147–153). Beyond characterising the position of things, *between* and *in-between* represent different understandings of relationality. *Between* articulates a modernist rationality framed within a cartographic imagination that interprets the environment as an array of discernible objects and measurable physical features. *In-between*, instead, embodies an ecological perspective where defined objects are replaced by unfolding relations. This chapter addresses these different relationalities exploring how the tension of *between* and *in-between* emerges in wetlands and river deltas.

Wetlands and river deltas are – by their very definition in popular and scientific accounts – spaces between other, more clearly delineated things and qualities: *between* land and water, river and sea, or solid and fluid. For their inhabitants, however, they may also be places with their own things and qualities, not reducible to hybrids or liminalities of outsiders'

categories. As this chapter demonstrates, the modern State has often imposed the former cartographic logic by implementing political and infrastructural arrangements aimed at displacing the in-betweenness of wetlands and deltas, thus establishing control and order over these allegedly unruly and ambiguous ecosystems. This is particularly evident in the fate of two regions, the reclamation district of Agro Pontino in Italy, and the Mackenzie Delta in the Canadian Arctic.

Although these areas are as different as can be imagined, they share an important tension. On the one hand, their social and material life has thrived through people's continual corresponding with their shifting ecological, economic and political rhythms; on the other hand, colonial and modernising missions have repeatedly attempted to delineate and control these regions and their inhabitants, positioning their flexible lives in relation to fixed categories and territories (Gruppuso 2022; Krause 2021). This clearly emerges in the main settlements of these regions, the city of Littoria, now Latina, in Agro Pontino, and the hamlet of Aklavik in the Mackenzie Delta, where logics of permanence, modern infrastructure and governmental control have been introduced to replace the ambiguous realities of marshland and delta life.

The Mackenzie Delta's and Agro Pontino's histories and current predicaments suggest that mobile and indefinite spheres of life *in-between* have been turned into 'problematic' infringements of categories and thus converted into a life *between*, through particular interventions and entanglements. In Agro Pontino, these included fascist land reclamation in the 1930s as part of which the city of Littoria emerged first, as an integral part of the infrastructure of reclamation, but soon as a model fascist town, superimposed on and detached from the newly reclaimed landscape. In Aklavik, which grew from a fur-trading post in the early twentieth century, urban infrastructures like roads and pipes run up against the wet landscape, and colonial planners have sought to replace it with a 'modern' town on the edge of the delta.

In our chapter, we do not use Ingold's distinction of *between* from *in-between* (2015) as a frame to compare different and clearly defined areas, such as the Agro Pontino and the Mackenzie Delta. Along with Marilyn Strathern (2011), we realise that arbitrary distinctions are necessary for constructing comparisons. We rather want to overcome the particular version of comparison that relies upon a logic of separation, according to which lines of thinking are imagined to connect separated objects and to run between them, so as to compare them. This version of comparison resonates with 'the logic of inversion', the expression used by Ingold to characterise the process that 'turns the pathways along which life is lived into boundaries within which it is enclosed' (2011:164). In order to avoid this logic, we attempted to correspond with Ingold, telling the stories of Aklavik and Latina in relation to each other and to the tension of *between* and *in-between*. This conceptual correspondence involved a more practical one between ourselves, working on a common argument while being based at different institutions in different places. We exchanged emails and other messages, discussed our ideas and

progress in video calls, and took turns writing and editing the manuscript. This triadic dialogue – between two authors with their research material and Ingold's writing on the *in-between* – helped us develop a different logic where things and positions are not fixed or bounded in advance, but where they become what they are through a process of *correspondence (see Ingold 2017)*. In other words, this chapter developed along with our conversations in which we juxtaposed ideas and insights from our fieldwork with what we had read in Ingold's texts and heard him say on various occasions[1]. As a result, the reader will perhaps learn less about the Mackenzie Delta *as a region* or Latina *as a city* than about the political and material processes that may turn lives and landscapes from arterial knots (*in-between*) into liminal margins (*between*).

Aklavik and the Mackenzie Delta

River deltas, geographically speaking, are the epitome of spaces between other things. Formed by the sediments of rivers settling down as their currents disappear, river deltas come into being as transitions between land and water, or river and ocean. They appear where things are no longer land and river, and not yet open sea. They are held in place by a delicate interplay between sedimentation on the one hand and erosion on the other: extending as sediment load increases, and shrinking as erosion outpaces sediment flows.

The Mackenzie Delta (*Umaq* in Inuvialuktun; *Ehdiitat* in Gwich'in language) can be seen as located between other entities, too, such as the Inuvialuit Settlement Region and the Gwich'in Settlement Area, which border each other in the delta. The Gwich'in[2] are the northernmost First Nation of a large family of groups across Western Canada and the Western United States who speak Athapascan languages. The Inuvialuit[3] are the Inuit of the Western Canadian Arctic, closely related to other Inuit groups in Alaska and Canada. Today, both groups live in ethnically mixed settlements in and around the delta. But this has not always been the case. According to stories told in the delta today, during parts of the nineteenth century, its inhabitants considered it a dangerous no-man's land *between* the Gwich'in on the southern and eastern fringes of the delta and the Inuvialuit along the coast. The stories suggest that venturing into the delta was a risky undertaking, as war parties from both groups occasionally roamed the area.

Ethnohistorical research (Krech 1979; Slobodin 1960a) suggests that this conflict was not due to some basic antagonism between the two groups, who are not known as belligerent warriors. Instead, it is likely to have been fuelled by the fur trade frontier that was advancing from the southeast. Gwich'in hunters and trappers had access to this new opportunity first and were eager to safeguard their position as middlemen between trading companies and Inuvialuit fur producers. They carefully guarded their privilege, for example, in receiving firearms from the Euro-Canadian traders, and in extracting a high premium in their trade with the Inuvialuit, who, in turn, challenged

this disadvantageous setup. Nevertheless, the stories about this antagonism might have been more severe than the conflicts themselves: they were likely exaggerated by settler reports, using the narrative of Indigenous warfare to justify colonial practices (Peter Loovers, pers. comm., who learned this from a Gwich'in scholar). Towards the beginning of the twentieth century, hostilities ceased, which may have been related to a radical decline in the region's population due to a series of epidemic diseases and the fact that trade in muskrat skins was becoming lucrative and popular. Muskrats were especially prevalent in the delta, and only a pacified delta, no longer *between* warring groups, could be hunted effectively.

With the muskrat boom of the early twentieth century, the delta became a centre in itself. A new trading post was set up in the middle of the delta and quickly grew into a settlement, Aklavik, which developed into the administrative hub of the Western Canadian Arctic in only a few decades, *in-between* the people, watercourses, animals and market connections that spurred its growth. Whereas Inuvialuit and Gwich'in people generally frequented the settlement only for trading furs and celebrations like Easter and Christmas, Aklavik made the Mackenzie Delta into a place on national maps. With the prominent presence of government institutions, Aklavik also became a token for the integration of the Western Arctic into the Canadian State. It was no longer on the edge, or between civilisation and wilderness, but thoroughly part of Canada. Perhaps the most striking instantiation of this was during an episode that came to be known as the manhunt for the so-called 'Mad Trapper' (McCartney 2017).

A settler trapper had come to the area in 1931 and was accused of meddling with neighbouring Gwich'in traplines during his first season on a delta tributary. The trapper resisted an RCMP (Royal Canadian Mounted Police) investigation and fled through freezing temperatures and blizzards across the mountains into the Yukon for seven weeks until the RCMP and Indigenous special constables caught and shot him dead. This story, in Euro-Canadian accounts, tells of maintaining settler colonial law and order over the territory and its inhabitants, even on the edges of the empire. The Mad Trapper manhunt added previously unheard-of dimensions to regional police operations, with the collaboration of officers and special constables from the Northwest Territories and the Yukon, the first use of two-way radio on a manhunt, the employment of aeroplane surveillance and the live reporting of the episode on national radio. In Gwich'in accounts, however, these events are less heroic (e.g. Lydia Alexie Elias in McCartney and Gwich'in Tribal Council 2020: 320–22). They show, instead, the understanding that the manhunt signified the end of the era when the Canadian State's authority was limited to settler affairs (Demuth 2013). Although Gwich'in men played central roles in tracking and confronting the fugitive, their ways of dealing with a perpetrator would have been quite different: offenders would not have been chased and killed, but shunned, isolated and allowed to escape (Slobodin 1960b, Demuth 2013).

While Aklavik and the Mackenzie Delta were now in the firm grip of colonial law enforcement, the delta's material processes continued to rub against ideas and practices of orderly life in a modern northern city as imagined by non-Indigenous planners. Between the many lakes, wetlands and river channels, there was only limited solid ground for buildings, streets and other urban infrastructure. The river bend, in which Aklavik was located to provide ample space for water access and boat moorings, was prone to erosion and flooding. But the city was meant to grow in the State's interest of sedentarising the Indigenous population, developing the region's hydrocarbon potential, and servicing the Cold War infrastructure along the Arctic Coast. Therefore, the territorial administration decided in the early 1950s that the settlement was to be moved. The planners identified a location on high ground along the eastern edge of the delta, devised a town plan, and had all State institutions move. The new town site was right *between* land on the one side and the delta's water on the other, rather than *in-between* currents, sediments, lakes and shifting river banks. The town was named Inuvik – the 'place of humans' in Inuvialuktun – in contrast to the 'place of the grizzly bear' as Aklavik translates.

Inuvik came with paved streets, modern standard North American housing and public utility infrastructure (Pritchard 1962; Farish & Lackenbauer 2009). The latter has especially been portrayed as a feat of Euro-Canadian engineering since drinking water and sewage pipes cannot be routed through permafrost ground, which they would inevitably destabilise. Therefore, utility pipes have been routed above ground in insulated tubes and heated at intervals to keep water and sewage from freezing during the cold winters. Aklavik, however, did not vanish with the establishment of Inuvik. It remained and even grew again once the Inuvialuit and Gwich'in had experienced that Inuvik's promises of progress and prosperity were materialising mostly for Southerners. The modern houses with state-of-the-art infrastructure, for example, were reserved for Euro-Canadian professionals, while Indigenous labourers were relegated to the other side of town with simple buildings known as Tent City, a place *between* settler town and delta camp.

As more and more delta dwellers moved permanently to centres like Aklavik and Inuvik, Gwich'in and Inuvialuit people interacted and intermarried ever more with each other and with other settlement inhabitants. The differentiation between the two ethnic groups gradually gave way to a more general difference between Indigenous Peoples on the one hand, and Euro-Canadians on the other. Settler observers of mid-twentieth-century social life in the region seemed to agree that distinct Indigenous traditions were melting into a largely undifferentiated frontier-culture working class (Slobodin 1964), where people spoke broken English, had low-paying jobs, little formal education, and a propensity for binge drinking. Permanent settlement and frontier culture were tightly interlinked with the 'cultural genocide' (Truth and Reconciliation Commission of Canada 2015: 1) of the Indian Residential School system that forced Indigenous children into institutions where they were not only physically and mentally abused, and separated from their

families for months and sometimes years on end, but also systematically instructed that their traditional lifestyles, languages, religions and skills were worthless in a modern world (Fraser 2024).

The more complete economic, legal and infrastructural inclusion of the delta region into the Canadian State came to place its Indigenous population more saliently *between* different realms again. On the one hand, the school system, the media and the everyday proximity to Euro-Canadians created the illusion that the old ways of the Gwich'in and Inuvialuit were obsolete, and that Indigenous Peoples had the same rights and options as Euro-Canadians. On the other hand, however, delta inhabitants experienced the hypocrisy of this illusion as they found themselves occupying only menial positions in the booming economies, subject to racist discrimination and being forced to become ashamed of their own elders and traditions (e.g. Di Mascio and Hortop-Di Mascio 2011). The social and economic flexibility (Krech 1978) and the much-discussed issue of alcoholism (e.g. May 1994), both of which colonial governments often see as typical of Indigenous Peoples like the Gwich'in and the Inuvialuit, are likely not inherent to their pre-contact cultures, but instead, related to the positioning of Indigenous Peoples *between* allegedly inevitable settler colonial modernity and supposedly moribund tradition (Brody 2001). This positioning challenges formal education in Aklavik to this day, where the school struggles to, on the one hand, comply with the curriculum standards of settler society and, on the other hand, allow sufficient flexibility and regional ways of learning (Lewthwaite 2007).

Against these systematic relegations to the status *between* modern and traditional, settler and Indigenous, Southern and Northern, primitive and developed, the Inuvialuit and Gwich'in have been taking things into their own hands and successfully negotiated land agreements, respectively in 1984 and 1992. The negotiators found this initiative especially urgent during the second half of the twentieth century, as they witnessed rapid economic developments in their home regions, with most of the benefits being pocketed by outsiders, while all the environmental risks and contaminations remained with delta inhabitants (Loovers 2019; Lyons 2009). Successful prospecting for oil and gas in the delta and Beaufort Sea, and the plan to build a gigantic pipeline from the delta to the province of Alberta amplified these concerns. This urgency was part of the reason why the Inuvialuit and Gwich'in pursued individual land claim negotiations, instead of linking up with other Inuit and Dene First Nations in the region[4]. These other groups were keen on settling their land claims, too, but were generally less pressed in time to do so, since they were not experiencing the hydrocarbons being drawn out from under their feet, and were generally focusing on more fundamental questions, like self-government.

The successful Inuvialuit and Gwich'in land agreements ensured a number of benefits for the delta inhabitants and conveyed rights to resources and their management. They also meant that ethnic categories have assumed renewed relevance in the delta. Many people from mixed families are now

placed *between* categories again and have to decide for themselves and their children whether to register as Gwich'in or Inuvialuit; membership in both land claim organisations at once is not possible. The choice has concrete consequences for what kind of benefits people can claim, where they are allowed to fish, hunt and maintain camps, and what jobs they can apply for. Thereby, not only are the delta inhabitants split into two distinct groups, but also the delta itself is cut up by straight lines on a map into a northern, Inuvialuit part, and a southern, Gwich'in part. This casts people's identity in clear terms and positions their proud *in-between* heritage *between* these terms, territories and memberships.

Littoria/Latina and the Agro Pontino

The term 'wetland' identifies a variety of ecosystems situated *between* solid ground and fluid water, whose main attribute is the presence of water or wetness in the land, even if in small quantities or for short periods of a year (Meindl 2005). It came into use in the 1950s to raise awareness of the importance of previously despised wet landscapes, nowadays considered vital for the maintenance and recovery of the global biome. Before, the term 'wetlands' was unknown and 'for the proponents of modernism and progressivism [these ecosystems were] regarded as destructive to land and shameful' (Huijbens & Palsson 2009: 310), unproductive and disease-ridden wastelands at the edge of civilisation; good only to be transformed into cities and rationally cultivated fields.

The case of Agro Pontino, 70 kilometres south of Rome on the Italian West coast, testifies to this approach. In the 1930s, this region served as a stage for the most ambitious landscaping project implemented by the fascist regime, namely the *Bonifica Integrale* (Wholesome Reclamation) of the Pontine Marshes, until then one of the largest forested marshlands in Italy. Beyond draining the Marshes, perceived as a wild and primitive wasteland, the regime implemented a massive colonisation of the region that changed its demographic pattern by bringing settlers from Northern Italy and removing local populations. The *Bonifica Integrale* also involved the creation of the Circeo National Park in 1934, and the foundation of Littoria, the most iconic of Italian fascist new towns.[5] In a few years, this intervention of social and ecological engineering transformed the Marshes into an agrarian landscape managed through a highly mechanised system of channels, pumps, and dykes that are still functioning today, and that completely changed the environmental and sociocultural structure of Agro Pontino.

The *Bonifica Integrale* was the manifestation of a modern technocratic power directed at imposing control over the region's waters and inhabitants. However, this was only the last and most successful attempt aimed at bringing order into the 'unruly nature' of the Marshes. In fact, since ancient times, the Agro Pontino has been affected by many projects of land reclamation, particularly in the period between the ninth century and the eighteenth century,

when the region came under the political and administrative control of the Papal State. This period culminated in the reclamation project carried out under Pope Pius VI at the end of the eighteenth century when the lower area of the Marshes was partially drained. This was the last large-scale project of land reclamation carried out by the Papacy, and certainly the most important in terms of general achievements, before the *Bonifica Integrale*. However, this project of reclamation, as the others implemented before, was a process of land management that, although on a large scale, was not comparable with the added imposition of a particular imaginary of nature implied in the 'wholesome reclamation' as implemented in the twentieth century. In fascist historiography, the *Bonifica Integrale* represented the long history of Agro Pontino as 'the history of the land reclamation processes that have been attempted in order to reclaim it' (De Mandato 1933: 64–65). This historical interpretation is still widespread, and accordingly, the Pontine Marshes are understood as a blank spot on the map, as well as in history (Martone 2012; Caprotti 2007). They are a gap *between* more visible and defined geographical spaces: the hills here, and the sea there. In this sense, the Marshes epitomise the etymological meaning of the term 'lagoon', coming from the Latin 'lacuna' meaning 'empty space'.

However, the Pontine Marshes were not a lagoon, although their marshy nature was due to the movements of the sea, which some 900,000 years ago started to recede from the plain, leaving behind the coastal dunes resulting from a process of accumulation of debris brought by rivers, winds and tides. The dunes prevented internal waters from draining away to the sea, eventually creating the Marshes as a natural basin where water coming from the surrounding hills, groundwater, and rainwater merged, locked up between the mountains and the open sea. Beyond geology, the nature of the Marshes was also an outcome of particular activities implemented by local people who, benefiting economically from the Marshes, historically opposed reclamation attempts. Particularly fishing, forestry, and animal husbandry generated conflicts with drainage projects over time. Engineers and technicians working on reclamation projects considered these activities as the main causes of water stagnation, and they blamed local people for keeping the water on the land, and hindering the reclamation (Gruppuso 2022). These contestations concerned not only the economy of the Marshes and their hydrogeology but also the broader identity of the landscape. On the one hand, there were local inhabitants, for whom the Marshes were central to their life, who maintained the region *in-between* land and water by implementing their dwelling activities. On the other hand, there was the State with its technocratic and economic apparatuses (in its different articulations over time), which conceived the Marshes as a marginal area, stuck *between* land and water, to be reclaimed.

The *Bonifica Integrale* epitomises the latter perspective, according to which the fascist State imposed control over the Marshes by separating previously undifferentiated hydrologic regimes and digging trenches through the

dunes to let the water drain to the sea. The system designed for draining the Marshes involved a complex superficial hydraulic network, which still pivots on three main canals collecting different kinds of water. The *Canale delle Acque Alte* (Canal of High Waters), also known as 'Mussolini Canal',[6] gathers water coming from the hills, and the *Canale delle Acque Medie* (Canal of Middle Waters) collects groundwater from the springs at the feet of the hills. These are the main water infrastructures built during fascism on which the hydraulic balance of the region depends. The third canal, the *Canale delle Acque Basse* (Canal of Low Waters) gathers rainwater, and it involves a cluster of channels that had been already excavated in previous projects of reclamation (Incardona and Subiaco 2005).

By channelling water, this sophisticated intervention of hydraulic engineering created land to be rationally cultivated and permanently inhabited, thus setting the scene for the process of colonisation, and for the foundation of new towns, amongst them a town founded in 1932, first named Littoria and then renamed Latina after the fall of fascism. According to the fascist policy of de-urbanisation, it was supposed to be a service centre for the new rural community brought from Northern Italy, an infrastructure of reclamation *in-between* the highly engineered landscape that at the time was still under construction. However, after its foundation, Mussolini changed his mind and Littoria's identity shifted, becoming the most iconic of the fascist new towns (Folchi 2015), superimposed over a landscape from which it grew apart, according to a modernist logic of separation of the urban from the rural (Gruppuso 2022).

This sudden repositioning of Littoria's identity is clearly discernible in its historic urban structure, characterised as an agglomeration of a few monumental buildings, mostly public offices and squares, which served as a background for public ceremonies aimed at staging the political and generative power of fascism. The uncertain identity of Littoria, more a frontier outpost than a rural centre, reflects the general lack of a plan for the agricultural economy of the wider area. In fact, Agro Pontino's allegedly flourishing agriculture collapsed with the fall of fascism, leaving behind a fragmented landscape and an economically, socially, and culturally ambiguous situation (Cefaly 2021).

An interesting interpretation of this ambiguity emerged during a public meeting in 2013, organised to raise awareness of the opportunities for economic growth based on tourism and sustainable agriculture offered by the Circeo National Park, the main conservation area of Agro Pontino. On that occasion, in order to explain the ecological, social, and economic problems that affect the region, the President of the National Park likened the Agro Pontino to a 'middle earth' not in the sense of Norse mythology or Tolkien's fiction, but as a place stuck *between* other things:

> I have always had the feeling of this place as a middle earth. A middle
> earth can be understood in different ways: a place between the sea and

> the mountains; between one culture and another; but most importantly, a middle earth is that land which had, in a particular historical period of our country, a perspective related to an industrial and advanced development […] that for several reasons has stopped. This land still lies there, in the middle, neither tradition nor innovation, it does not know anymore where it is going […] it is a land in search of identity.

Although he was certainly referring to the geology of Agro Pontino, as a plain between the mountains and the sea, by using the image of the 'middle earth' the president aimed to emphasise its uncertain condition as a region stuck 'in the middle' of a process of growth. This expression also conveyed a strong political burden since the President's talk aimed at presenting an opportunity for the local community to overcome this situation by re-evaluating the ecology and the landscape of the region, which since the *Bonifica Integrale* has undergone a process of degradation. This degradation is particularly evident in the poor water quality of the region, due to industrial and agricultural activities, and in the general quality of the landscape that has lost its rural identity because of widespread urbanisation.

These problems are exacerbated in Latina, previously Littoria, and exemplified by the ambiguous relation that the city holds with one of the main water infrastructures built during the *Bonifica Integrale,* namely with the *Canale delle Acque Medie*, which crosses Latina's scattered urban fabric only a few hundred metres from the historic city centre. This channel is commonly considered just a canal for draining water, if not a sewer for the agricultural and industrial activities surrounding the city, but it recently became part of a project of urban regeneration, that also involves the Circeo National Park. This project aims at improving the quality of the urban landscape in relation to the wider area, and it involves the creation of a linear park along the channel named *Parco Naturale Urbano del Canale delle Acque Medie* (Natural Urban Park of the Canal of Middle Waters). The different reactions to this process of valorisation reveal the uncertain identity of the city and its problematic relations with the surrounding landscape. On the one hand, there is the land reclamation authority, which according to the original fascist plan, considers the channel as a drain for water to flow away as fast as possible and without obstacles. On the other hand, there are ecologists and nature lovers who propose to implement a process of naturalisation, at least in certain tracts of the channel, in order to enhance water quality and the wider ecology of the area. Then there are groups of local inhabitants who would like to have a path along the channel for walking, and who are suspicious of any naturalisation project that would recall, even remotely, the idea of a marshy landscape.[7]

The complexity that characterises this process of ecological regeneration bears out the legacy of Latina's ambiguous identity. It originated as a rural village integrated *in-between* the surrounding landscape and its network of channels, but it was suddenly abstracted from that landscape and

symbolically superimposed in the middle of it, *between* drainage channels and agricultural fields. This complexity must also be understood in relation to the broader project of the *Bonifica Integrale* as a modernising mission aimed at draining wetlands and establishing a clear and durable separation *between* land and water, thus making possible the development of agriculture and the foundation of new towns (Grupposo 2022:54).

Fascism erased the deep history of the Marshes, replacing their identity *in-between* land and water with an identity based on the separation of water from land and *between* the realms thus created, such as rural and urban. The Canal of Middle Waters is problematic because it crosses these realms flowing through the city, *between* the hills and the sea, drawing a paradoxical waterscape where water is marginal to the life of people, who look at it with suspicion, as an undesired element to conceal, something to be feared, or of which to be ashamed as a remnant of the previous Marshes. This attitude to water held by today's urban dwellers of Latina also reveals a widespread unawareness of the hydraulic system that sustains the city and the surrounding landscape, with all the problems that this lack of awareness creates from the ecological perspective in times of climate change and environmental uncertainty. In fact, the increasing frequency of extreme meteorological events, such as floods and rainstorms, unsettles the identity of Latina as a 'modern' city detached from an invisible water infrastructure, concealed and independent from the lived experience of its inhabitants. Floods and rainstorms make water visible in the landscape, challenging the rhetoric of the reclamation as a historical, technological enterprise that drained the marshes once and for all. They reveal, instead, the presence of a diffused water system that needs to be continuously maintained, thus making evident that the modern city is not a bounded and stable space *between* a network of channels and drained fields but an ongoing process *in-between* land and water.

Conclusion: displacing the in-between

The tension identified by Ingold, of the *between* and the *in-between*, helps us to make sense of the variable relationalities of life in Agro Pontino and in the Mackenzie Delta, where modernist approaches have converted the regions' inhabitants' endeavours from *in-between*, at the centre of their social and material worlds, into marginal positions *between* other, more powerful realms or categories. In fact, the very delineation of these realms and categories is itself part of colonial and modernizing impositions on landscapes and people. Beyond our case studies, this has been shown in detail in the context of remaking wetlands and deltas in British India (e.g. D'Souza 2002; Lahiri-Dutt 2014), where policies and infrastructures have attempted to turn dynamic landscapes and mobile populations into clearly demarcated realms of land, water, villages and tax revenue. These interventions reverberate into current problems of flooding, salinisation

and migration, where social and material 'seepage' (Cons 2020) continually spills over colonialist and modernist containment and separation. The *in-between*, in other words, is not easily enclosed between hard and fast boundaries (see also da Cunha 2019).

This dialectic goes beyond the strictly material aspects of delta and wetland life and includes economic, ethnic and other categorisations that follow what Ingold (2011) calls 'the logic of inversion', where lines of life are transformed into lines of separation. This logic follows, imagines and materialises 'lines of occupation' (Ingold 2007) that crosscut lines of inhabitation and that make the Mackenzie Delta in Canada and the Pontine Marshes in Italy into deviant, marginal landscapes not quite one thing but neither another. This chapter has shown that in both regions, modernist-colonial projects have attempted to make people and places legible, thus better governable and exploitable (see Scott 1998) through processes of land reclamation, landscape classification, and urban infrastructuring. The common denominator in these and other processes sketched above is that they all aim at displacing the uncertain fluidity and vagueness of the *in-between* in favour of the solid certainty and sharpness of the *between*, preparing the ground for governance, taxation and control while marginalising people's lives and landscapes.

As anthropologists and academics, we are not innocent of these colonising interventions, as we tend to invent labels and apply them to the world, often reproducing divisions and creating 'betweens' in disciplinary or geographical areas of expertise. When we identify a 'delta' or 'marshes', 'Indigenous Peoples', or 'modernist planners', we must be cautious not to follow the 'logic of inversion' that turns knowledge, and the paths of life along which it grows, into different and bounded realms within which it is enclosed. In other words, we must attempt to remain truthful to the lives and landscapes through which we learn, resisting the urge to classify and order, and dwell, instead, in the *in-between*. This is a never-ending challenge in an academic culture that shares the logic of the 'frontier' (Lund & Rasmussen 2018) with the colonial approach to the Mackenzie Delta and the fascist reclamation of the Pontine Marshes, where resources are made by breaking up, reordering and inverting social and material relations.

In this chapter, we have attempted to avoid 'inversion' and, instead, to explore the resonances of dynamics in a former marshland in the Mediterranean region and a river delta in the Canadian Arctic. Our argument is not an assemblage of First Nation, Inuit and Italian people, a contrast between arctic and temperate wetlands, or a comparison between fascist and colonial politics. Beyond the logic of comparison *between* different regions, our chapter has tried to make our research join *in-between* our reflections as they developed in correspondence with each other. We have brought together insights and reflections on infrastructures, policies and economies in two very different regions to consider various articulations of the making of 'betweens' in formerly 'in-between' worlds. Considering the fundamental *in-between*-ness of research material and method, we must conclude by wondering to

what extent the categorical distinction of *between* and *in-between* itself creates new 'betweens' that we may better avoid. Perhaps there is scope to treat this relation, too, in a more *in-between* manner.

Acknowledgements

Notes

1 Tim Ingold kindly supervised both our doctoral research, and we refer here also to the many discussions we had individually with him as part of this supervision.

2 Today, the term *Gwich'in* commonly refers to the participants in the Gwich'in Comprehensive Land Claim Agreement in the Canadian Northwest Territories and to related groups in the Yukon and Alaska. *Gwich'in* translates as 'those who dwell' and is usually qualified by a locality indicator, such as *Ehdiitat Gwich'in* for those living in and around Aklavik. *Ehdiitat* means 'among the timber stands' (i.e., the delta, where trees grow unlike in the adjacent hills). The group's linguistically correct name is *Dinjii Zhuh*, but this is rarely used in Aklavik.

3 *Inuvialuit* translates as 'the real people' from Inuvialuktun and refers to the beneficiaries of the Inuvialuit Final Agreement.

4 Originally, these land negotiations had been pursued by much larger collectives beyond the current confines of Gwich'in or Inuvialuit lands and peoples. The same is true for the current self-government agreements, which in the Mackenzie Delta region originally included a Gwich'in-Inuvialuit coalition but are now handled separately, with some voices even proposing individual settlement-level governments. Critical commentators in the communities have identified this as the result of a 'divide-and-conquer' strategy employed by the Canadian State; in our vocabulary, this is the production of more 'betweens' at the expense of 'in-betweens'.

5 The fascist regime founded three new towns in Agro Pontino: Littoria in 1932, Sabaudia in 1934, and Pontinia in 1935.

6 This canal has become famous in recent years thanks to the novel *Canale Mussolini* by Antonio Pennacchi. The novel tells the story of a family of settlers arriving in Agro Pontino from Northern Italy during the *Bonifica Integrale*. In 2010, this novel won the Strega Prize (*Premio Strega*), the most prestigious Italian literary award, and it was then translated into English and published by Dedalus Books with the title *The Mussolini Canal* in 2013.

7 The process of valorisation of the Canal began when we started writing this piece, so these are observations not supported by in-depth ethnographic fieldwork. Nevertheless, I (Paolo Gruppuso) am a native of the region and have researched the landscape of Agro Pontino for more than a decade, recently also following this process of valorisation.

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Section II

Introduction

Lines against linealogy

David G. Anderson

Before we congregated into a line, there was a lot of to consider. Where is the best place for us to stand? We simply must make a decision because we have to let others know. Exactly how many people are enough to form a line? How many can we get away with? Is it best to have one big, raucous line or better to have many segments so that wherever you turn we will encounter you? Please dress warmly. We may be out together for a long time, and we are standing not only to support each other, but also those who will come to take our places. Yes, our line certainly is involved in manifold ways not only with histories but with futures.

i

Everyone in this section, and this volume, owes a great debt to Tim Ingold. Anyone who reads his work will come to look at the world differently. More often than not, most of us will be struck by how an unremarkable inscription or object – be it a slowly drying stone or a globe carved up into national territories – when seen through Tim's eyes is enlivened in a mesh of relationships. Tim brings a remarkably erudite, and entitled, personal view to each situation. But I do feel that he encourages us all to share his view – even if some are unfortunate enough to serve as examples in his polemics. For those of us

who have had our lives and careers supported by Tim in person as a mentor, referee, Department Head, Head of School, or Thematic Lead, we have had a special insight into his pragmatic creativity; his remarkable ability to perceive opportunities within the crumbling chaos of academic restructuring. Who else has the patience to keep building castles on the beach only to have them swept away by the next wave of innovation? I believe that even his critics will acknowledge his generosity in reading, improving, and often re-writing the texts that we share with him. His generosity is tangible in his sincere belief that everyone, regardless of status or background, can come to share his point of view. It is also present in his enthusiasm that everyone is able to inscribe their views, no matter how humble in materials, notations, and words. Unlike the masters he cites, who always seem to inscribe a perfect line instantly and effortlessly, in day-to-day life he is willing to show how any first attempt can be made better.

ii

The three essays in this section are by people who have collaborated with Tim as colleagues, students, translators, and post-doctoral researchers. The common theme is the play of perception – about how we can attune ourselves to encounter a hopeful world behind the most unremarkable things – germs, clay, and even ancient spiritual texts. To a great degree, these chapters are translations. They show how some of the remarkable (although not always consistent) terminology that Tim uses can be employed to re-animate the fields of soil science or scriptural interpretation.

The authors, each shyly, hover around another controversy – that of how one can show solidarity and commitment within those inscriptions that we are incited to enliven. The authors here do this respectfully, if not fearfully. Wirzba and Deanne-Drummond rejoice in the creativity of the wayfarer who discovers wonders when they are unaware or even indifferent to the *sacred*. Higgins and Meulemans perhaps most respectfully ask us to read Ingold's works 'in the minor key' – both a reference, it seems, to Manning's (2016) work, and a reminder of Tim's love for his cello. Perhaps they are not being entirely forthright about the fact that most of those works are certainly intended to restructure, recover, or re-calibrate Anthropology in the major key. In their introduction, they do admit that Tim's ontology 'by default plays in the major key, leaving little place for other points of view'. Finally, Giraldo Herrera beautifully uses Tim's characteristically close and empathetic reading of ethnography to suggest that we all can hear as shamans do, and therefore, have direct personal experience of dragon-like germs. However, he points out that even our own scientific-technical notion of the germ can only be truly understood by remembering an early Modern fascination with dreams and specifically the Taino word for a type of animating spirit (*çemies*), without which we would have no microbiology. With this example, he shows that even stark orthodox scientific notations – Tim's favourite bugbear – also have their own minor key, even if it is difficult to hear. The question then becomes

if one should not stand in solidarity with dragon-dreaming prophets, as Giraldo Herrera does, to build a theory of lines-as-life instead of slaying opponents in polemic.

We are mindful of the official guidance. The Home Office has published a document that defines "best practice" as congregating into a line of no more than six people (but I guess seven is not strictly illegal either). The Police want us to name a supervisor who will keep count and redistribute bodies as necessary. I get to wear a high-vis reflective vest and carry a clipboard. I wonder about the theory of lines with its traces, threads, and my own favourite, the ghostly lines. But what about the lines that are managed? Must the line managers always be colonisers? Certainly, they have to figure things out too – to adapt the guidelines to the situation at hand?

iii

I think all of us have our favourite Ingold. The contributors in this section were clearly deeply influenced by *The Perception of the Environment* (2000), which, in turn, was a compilation of many different essays over a decade which Tim aligned into a single plot. There are other Ingolds. The Canadian historian of science Jeff Kochan (2022) identifies, with Tim's approval, an early and late Ingold. In his wide-ranging and sympathetic review, the year 1988 marks a 'sudden swerve' from social analysis such that 'Ingold's evolving account of personhood becomes increasingly mysterious' (Kochan 2022: 784). A less patient critic, another Canadian – David Howes (2022a,2022b) – also identifies a break in Ingold's thinking, which he locates in the chapter of *The Perception* devoted to the senses. It is interesting that, here, he finds first an agnosticism and then a 'skipping over' the social in order to favour an ego-centred or individualist theory of personhood (Howes 2022b: 450). For those of us in Aberdeen who used to work together to defend an independent anthropology programme against the rising tides of corporate mergers and audits, we listened in seminars as Tim's *Perception* turned into a linealogy (Ingold 2007a; 2015). I think it is fair to say that we all were equally challenged, inspired, and uncomfortably perplexed with this development. It seemed a bold step – definitely not a note in a minor key – from the earlier phenomenology of globes and spheres to equating life itself with lines.[1]

There were many moments when I experienced this puzzlement. I vividly recall sitting on a train to Edinburgh together with Tim and most members of our small, young department. While we were talking about – who knows – television or childcare – Tim looked up from his book and declared that Inuit string games were really just like schematic metro maps. I have to admit, I would never have dreamt of this connection then (nor now). In this mini-ethnographic moment, we witnessed Tim playing with the linealogy that he would set on paper maybe five years later. Putting words into his

mouth, I imagine that Tim was thinking that the resulting form – the string figure – could only be truly appreciated by the solitary viewer by the steps that it took to create it. Therefore, the string figure itself was a journey – and similarly one would need to think like a wayfarer to read a metromap. However, to address the issue of major and minor keys, there is still a confusing tension in the allusion. Classically, these figures are known as 'Eskimo string games' which place more emphasis on the element of playfulness and exploration, and less on achieving a pre-determined form. Diamond Jenness (1923) described the games as open-ended activities with many possible final patterns, and frustratingly for him, no one set was ever displayed in any one location. This master of the North failed to create a linealogy. Moreover, the classic patterns – the so-called figures – would have to reflect the wayfaring intuitions of two people.[2] They would, by definition, be born social and not be a singular artefact created by a skilled engineer/craftsperson. To make Tim's analogy work there would have to be a singular way – the fastest or quickest way – to achieve a pre-defined string pattern. Similarly, to make a metro map truly useful, you would have to add to it your innate local knowledge of topography, daily peak hours, and the ensuant overcrowding. Perhaps in your mind's eye, you would playfully combine journeys with scooters or with bus lines run by competing companies. In short, the playful and social quality of the string games, and the maps, would make each of them so much more than a line.

Another image comes to my mind. We were sitting in the large lecture theatre in the Scott Polar Institute as part of a meeting of one of the first, multi-nationally sponsored Arctic projects: BOREAS (https://site.uit.no/boreas/). Through some accident of reviewing, I was chosen to lead an experimental comparative project on tents and lodges across the circumpolar North. Tim was an enthusiastic and loyal supporter from within the network. He told me a story – I don't know if it is true – that an irate peer reviewer from California tore our unconventional project apart – but blinded by his impatience confused his scoring card, giving it one of the highest numerical scores. At the Cambridge meeting, Tim went out of his way to improvise, as only a virtuoso can do, on the theme of the conical reindeer skin tent. His vision saw the structure as entangled between the earth and sky worlds, united by the curling plume of smoke coming from the hearth. I was live-translating his commentary for a Russian archaeologist who just kept shaking his head in disbelief. This improvisation in a minor key later came out in our book (Ingold 2013). I have built and lived in a lot of conical tents – although quite a long time ago now in Taimyr. Contemporary taiga-dwellers have warm memories of their old skin tents. However, most have a real passion for canvas now. This material is far more practical in that it dries quicker and can be patched easily. Often, it is even lighter. I remember sharing this not-insignificant fact with Tim who seemed dismayed. He thought that the sound of rain falling on canvas (or on the plastic tarp that sometimes protects it) would disrupt the intertwining of the Earth and Sky in what was to become

Figure SI2.1 The sky as seen from within a forest Nenets conical tent. Photograph by the author.

a theory in a major key. However, I have to confess that I still find Tim's original improvisation haunting. Residents of contemporary (canvas) conical tents, today from IАmal to Zabaĭkal'e deeply value the view of the sky which is visible through the opening at the top of the tent when you are reclining on the bed of fresh fir branches that insulate the floor below. If you have set the tent right, you rejoice in the delicious smoke which, rather than wandering into the sky, hovers just above your head to protect your blood and your sanity from the swarms of insects outside (Figure SI2.1). This image is sometimes used as a logo for Indigenous organisations working to protect their forests and tundras from galloping industrial development. The tent inscribes one's place in a cosmos – but a cosmic environment which is both nurturing and sometimes foreboding. The cosmopolitics of it will always be entwined with the fact that the structure protects and insulates the people inside from the environment, as much as it defines them (Blaser 2016). But it will not be one or the other – it will be both.

iv

There is a tension sometimes between telling a good story – with a gripping plot – and telling a true-to-life story which sometimes has no ending (Ingold 2007a: 90–2). The heart of my life project with Tim Ingold was in discussing

and teaching the philosophies and worldview of Arctic hunters. Tim sometimes described himself proudly as an armchair ethnographer – a master reader and interpreter of global ethnography – who confessed to having been shocked out of fieldwork while staring into the panicked and angry eyes of a reindeer having notches carved in its ears. The lives of Arctic hunters and herders, who he touches primarily through the work of his students, are a constant guide to his anthropology. Their rituals, inscriptions and dreams have pulled him out of his study to reflect on how life could be understood differently. What he evocatively calls his circumpolar night dream (Ingold 2000) is a world where rocks (sometimes) speak and animals make gifts of themselves. This classically relational world grew step by step into a meshwork of lines – meandering plotlines of individual stories entangling themselves with stories of other sentient beings. These lines are open-ended, never-ending, and always forming – but they somehow seem quite lonely. They solemnly trace their path and never have to worry about having to negotiate detours around others who might be standing in the way – or indeed to stop and make common purpose with them.

The image that really united and sometimes divided us is that of the trail through a sub-Arctic forest. For many northern peoples, a trail is a metaphor for life (Ridington 1988; Paine 1987; Johnson 2010; Nemtushkin 1990). And, I suppose, a trail is a sort of line – but I have never truly been convinced that it could be the defining component of a linealogy. I have made trails and have followed trails. I know enough about following trails to know that I am very bad at it. According to Tim's typology, a trail should really be called a reductive trace since it inscribes itself into its surroundings by bending grass or compacting earth or snow (Ingold 2007a: 43–4). I suppose if all trails were reductive traces I would be a very good trail guide indeed. But in my experience, they rarely appear like that outside of national parks. Most trails are materially present only at certain points. They appear as impressions made in soft mud, bent grass, or a sheltered bit of snow, which tend to be visible longer since not enough time has elapsed to dry them out or fill them in with drifts. Therefore, to follow a trail, you usually have to put yourself in the minds of the animals or persons who have passed here before in order to extrapolate from a single footprint where they most likely went next. The minds that you are sharing are more likely than not part of your own society – be it a society of humans or a society of humans with non-humans. From past experience, you will know that reindeer run into the wind ('Don't you remember from which direction the wind came last night?'). You will know from past encounters (and stories) that both people (and bears) follow the course of rivers and tributaries often avoiding the thick underbrush on south-facing slopes. You will probably also know that in any given valley there are really only a handful of places where you might want to camp since you have been there many times before. Armed with this social knowledge, following broken and incomplete traces is much easier.

When you catch up with your friend, they might tell a tale of their journey by inscribing a line in the sand. This reductive trace would represent a moment from a life. It would be a performance. But like with many performances, you probably knew the outline of the story already based on the 'dots' of interaction that you had encountered. The performed journey entertainingly fills in the details. In other words, this story is both a trace and a set of publicly visible steps.

In *The Life of Lines* (2015: 60–1), Tim distinguishes footprints from true traces since they only impress or the relative weight of a body indicating direction but not inspiration. He concludes that 'footprints are individual; paths are social' (p.63) His definition of a social trace is that of an artefact made by countless journeys superimposed one upon the other such that the identity of each body blurs into a single social body. It is much the same as the metaphor of the market where the rational decisions of individual consumers create a set of signals that determines value, and thereby life. I hope that my mini-ethnography of reading trails above is enough to convince the reader that even individual footprints must have a sliver of social context that determines both where they are placed and how they can be read. This further implies that to understand a footprint, one has to think collectively.

This is not (only) a pedantic debate between Arctic specialists. It is just one apt illustration of how ethnography is important to anthropology. The story of lines folding into a linealogy is entrancing. It has a plot, a sub-plot, and drama ('How on Earth is Tim going to be able to fold musical notation into this argument?'). It is a page-turner. To me, *The Life of Lines* is most convincing where Tim argues about the indeterminacy and hopefulness of action. He describes this as the 'in-between' (Ingold 2015: 147–53) or as Hannah Arendt's 'inter-ests' (Ingold 2015: 20). The liveliness of the line is perhaps best described by a careful account of how a linealogy 'calls for a concept of the line that exceeds the narrowly geometric' (p.53). The necessary corollary of this is that a philosophy of life calls for a concept that exceeds that of the schematic. At heart, I am sure that Tim agrees, but sometimes, that recognition gets in the way of a good story. In his clearest manifesto of the linealogy in Chapter 11 of *Life*, Tim draws the obvious parallel with human genealogies – which British Social Anthropologists (under the deadening influence of the Medical Sciences) are trained to represent as lines, triangles and circles. It is a mark of Tim's brilliance that he enlivens these lines with the metaphor of the whirlwind wherein generations of kinship partners are cast out in exchange between moieties creating a stormy, circulating, vibrant unity. I am not sure, however, that the storm is where the liveliness is to be found. Surely, as anthropologists and ethnographers, we would find life in the everyday dramas of these relationships – some desired, some broken, and some reluctantly accepted. By extension, I would argue that the life of the line will be found in the small crevices that Tim's critics find in his work.

iv

David Howes engages with Tim's own statement to a Finnish colleague that his work can't be completely apolitical in the sense that he '[writes] against the grain of mainstream understandings of human cognition and action'. In answer Howes comments, 'Perhaps' (Howes 2022b: 451). This feeling of equivocation is a sentiment echoed often in many criticisms of Tim's grander schemes. This *perhaps-ness* is the feeling that there is a task here that is not quite done. It speaks, in my view, to the implicit openness of Tim's work that is sometimes distractingly framed within his polemics. Jeff Kochan tries to reconcile the submergence of social relations in Tim's later work by tracking how he seems to link it to an 'unknowable nothing', 'a force', or a 'continuous becoming' which sneaks social relations back in (Kochan 2022). Kochan classifies these examples as an understandable – and not so uncommon – 'neo-Platonic' approach to science. He invites Tim to reach out and stand up and be counted together with other philosophers working towards the same end.

   To return to the three essays at hand, we can discover the same type of generous but elliptical reading of Tim's work. Higgin and Meulemans describe Tim's 'minor key' as an 'anthropology of practice' which is like a tradition 'that shapes us, shapes our capacity to respond and improvise'. What they further describe, citing Stengers, is an 'instinctive faith' that there is more to nature than first meets the eye leads them to co-opt a similar list of Tim's critics as I have assembled above. I find it fascinating that the critics they cite chime-in citing 'bioalatry' or 'vitalism' as proof that Tim is only reproducing yet another map to lay over the world. Higgin and Meulemans, masterfully, ask us to instead pay attention to what is not-quite-said – a key which suggests a generative 'way of inquiring'. Like Kochan, they extend their arms and invite Tim to stand with them joining a community of scholars in Science and Technology Studies devoted to renewing our links to the world.

   Giraldo Herrera's chapter is a *tour de force* which follows dragons and dreams across several continents, religious traditions, and many, many centuries. My mind is attracted to one rediscovered sound – the 'homophony' between early Indigenous Taino *çemes* and its Latin translation as 'seeds' *seminae*. When this early theory of contagion was folded into germ theory, the word *germen* erased 'the tracks of its inspiration ... with Taino'. I tip my hat to Giraldo Herrera who is an expert trail guide – reconstructing an epic journey based on just one footprint. He shows us how Amerindian peoples were 'radical empiricists' and pragmatists before Bacon. Moreover, he shows that lab-coated scientists today should once again congregate beside shamans to find openings in the world. Giraldo Herrera accepts Tim's invitation to rediscover the religion, and in his own words 'diplomatically' shows the potential of Tim's work to inspire.

   Wirzba and Deanne-Drummond, in their chapter, almost like the song of the subaltern, thank Tim, for 'taking theology seriously'. This is perhaps the

most prophetic dream of all for an ontologist to encounter! They describe themselves as eco-theologians who thank *The Perception* for 'a recovery of the dynamic, open-ended, mutually-involving character of God's creation'. They seem to forgive Tim's more polemical moments of 'triumphalism' and point, like many do, to the elements of open-endedness and dialogue which also happen to overlap with the methodological prescriptions of some theologians or indeed papal leaders. Like Giraldo Herrera, they find Tim's re-reading (*re-legere*) of religion a source of inspiration and a welcome anti-dote to a theology that puts too much emphasis on 'the individual as an isolated subject'. They recreate, as Tim does, a society around that solitary wayfarer in a society of non-human species – although I suppose they forgive Tim again for the fact that his human wayfarer is always lonely, cut off from human society. In conclusion, they find common ground, and like all the others, invite Tim to stand with them in 'bold resistance'.

A generous reading of *The Life of Lines* would be forced to admit that the description of Tim's linealogist is playful. He self-depreciatingly admits the madness of his task, and like a jester, dresses himself in the uniform of a ritual specialist interpreting lines. Tongue-in-cheek, he makes an ontology out of reading lines in order to draw attention to how futile and self-defeating such a project would be. I suspect that Tim himself would be forced to admit that his lively, non-Euclidean lines would have to be anything but linear. Can we invite Tim to come and stand beside us ethnographers to describe the beauty and playfulness of living relationships without fanfare? (Figure SI2.2)

There are six of us at the entrance to Dunbar street, and far more at the Regent street entrance. According to official documents these should both be picket lines, with the Regent street group tending towards a mob. But when you look at them there really isn't much that is linear about them – even if you assume that the adults, children, and dogs are dots – and you sketch connections between them. Most of the time we reach out to pedestrians to give them a flyer, or to talk to them about events of concern – about equal pay and workload. Often, we huddle together and exchange stories. In these cases, we congregate, which is a coming together of the like-minded to achieve a sacred purpose. I suppose each individual picketer could stop and give a lineal-like account of what brought them to this place. Are these entwined stories really best described as a blob or a knot? The etymologies tell us that picket lines originally consisted of soldiers advancing in a line with sharpened pikes, and that only in the mid-19th century did the term fold over to describe industrial action. Some students bring us coffee. Perhaps there once were picketed barriers around the factory mills which used to organise social life in Aberdeen. Our picket is really not a line that divides nor confronts. It is place of encounter. These days it is perhaps the most vibrant place where we encounter students and colleagues and feel we can speak freely about the things that matter. It certainly wouldn't be in a meeting room. We invite you to stand with us.

Figure SI2.2 The picket line at Regent Street, February 2023. Photograph by the author.

Acknowledgements

I am grateful, first and foremost, to Peter and Caroline for inviting me to participate in this collection – and I apologise to them that it took too long for me to gather the courage to write this piece. I am also grateful to Jeff Kochan who has been a wonderful collaborator on this journey.

I also wish to acknowledge my place of work, the University of Aberdeen, which at various points in its history has harboured intolerance, and profited from plantation slavery, but also has sheltered inquiry, resistance, and scholarly community. I am not sure there is value in declaring which is the Major and Minor key – but it is a place where there is potential to do good as this collection attests.

Notes

1 Tim's 'linealogy' is developed most self-consciously in his *Lines: A Brief History* (2007a) where he playfully describes himself as a linealogist who can describe any aspect of life through the metaphor of a line. The guiding inspiration, as alluded to by the spelling, is that of the genealogy where anthropologists (and medics) make

schematic representation of descent in order to induce kinship 'systems' (or to trace a congenital disorder). By almost setting himself a dare, Tim shows that almost any relation can be represented by a line – and that lines serve to define the knowledge that we hold. In this similarly playful section introduction, which is loosely based around his essay 'Materials against Materiality' (2007b) I try to develop critiques that Ingold's work is often apolitical and that his examples are often solipsistic. He often speaks about himself observing phenomena, such as a stone, in isolation from other communities. This criticism is also implicit in the three chapters in this section.

2 Jenness also noted that the string games had to be performed in a concealed space for the fear that they would attract a spiritual audience which could not easily be shed. Therefore, they are social in a very limited sense, but not public – another perhaps strong difference from a metro map.

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4 Listening to microbe-spirits dancing

More-than-imagined dreams and emerging infectious diplomacies

César E. Giraldo Herrera
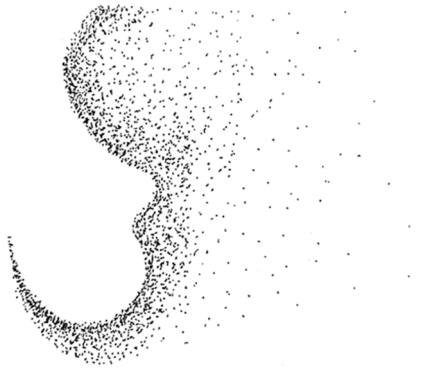
Dreaming with dragons

This is a delayed response to an ongoing conversation that started ten years ago, a couple of days before the conference in Lampeter where Ingold delivered *Dreaming of Dragons*. After our supervisory meeting, he kindly drove me to the train station and, along the way, rehearsed some of the ideas he was ruminating about. He was playing with the reality of imaginary beings, which he was grounding in the shared understandings people hold of imaginary beings: 'We all know what dragons are. Doesn't that mean that they exist, somehow?' Then, he told St Benedict's story of the rogue monk who saw a dragon after abandoning the monastery and, in terror, begged to be let back in. Although no one else could see the dragon, his brothers did not doubt him and took him back into the monastery, where he remained and never again rebelled. 'Doesn't the fear provoked by the dragon demonstrate the capacity for efficacious action of imaginary beings?'

I had to concede that there is indeed something to being imaginary. Playing devil's advocate, I listed the reductionist materialist arguments and suggested that imaginary beings would perhaps elicit closely related neurochemical patterns; as such, they would be real, and even if only partially shared, they

could be efficacious. However, I was baffled by how anthropologists consistently bracket and reduce other peoples' dragons to that limited level of reality, to the status of imaginary beliefs, the long-discredited mythical or spiritual, while simultaneously attempting to substantiate the efficaciousness of symbols and sham schemes. Why have anthropologists been so reluctant to explore the possibility that our untrained perception might be incomplete and incapable of perceiving beings, we understand as real? There have been considerable developments from the ethnosciences, through the ontological turn (Holbraad and Pedersen 2017) and calls to acknowledge diverse realities (De la Cadena 2015). Nevertheless, these efforts still result in a bracketing of other realities. Why do anthropologists so rarely consider that other peoples may be referring to entities Western scholars understand as real, such as microbes? In many cases, accepting the reality of such entities would be more congruent with what anthropologists' interlocutors are describing, as agents in and of themselves independently of human actions, and or imagination, and are more efficacious explanations than even neurochemical patterns. Before Ingold had a chance to retort, I had to run to catch the train. A couple of days later, in Wales, his dragons flew over our heads.

Five years on, I was invited to review the rendering of that lecture in Spanish. In the text, Ingold argued that Enlightenment philosophers like Bacon, Galileo and Descartes had forcefully instituted the solid schism with dreams and imagination on one side and the reality of rational science on the other, which arguably, Modernity took to heart. This schism with the subsequent devaluation of dreams, fantasies, and the imagination, he argued, was at the basis of the rupture between humanity and the world, the objectifying silencing of nature, and its submission under antagonistic exploitative relations that underlay the world's contemporary ills. While medieval scholars had seen nature as a book guiding our actions, Bacon & co understood it as an encoded cypher which only proffered truths when submitted to the violent torture of analysis. In the text, Ingold recognised that the Enlightenment was preluded and tightly associated with the Christian Reformation. He finds it paradoxical that literalism in the interpretation of the Bible accompanied the rise of empirical science in the West. But reconciles them, noting that both emphasise the same distancing objectification, prioritising words and data over meanings and experience. He proposes that mediaeval monastic and Indigenous approaches to reality demonstrate how dreams and the imaginary constitute realms of existence and knowledge, which might illuminate paths to pull ourselves from our bootstraps and out of the current ecological crisis. Religion, he argues, is derived from *re-legere*, which he interprets as performatively reading the book of nature.[1] He argues that the contrary of religion is not atheism but neglect of the world. Hence, Ingold's response to the challenge of our times would be embracing the possibilities of these 'religious' sensibilities.

The translation caught me by surprise. It made apparent that Ingold was reviving religious faith as reality. Having endured a Catholic education, the idea was disturbing. It recalled:

…those perilous times when faith moved mountains and you had to keep
alert for any saint in the neighbourhood who might accidentally overrun
you with a loose boulder or a volcano.

(Carlos Arturo Mejia, Pers. comm)

How could religion, i.e., the Church, the institution that prosecuted and
sought to eradicate so many forms of Indigenous knowledge, now seek their
alliance and protection in their ranks? Why would the realities and know-
ledge of Indigenous Peoples, art and literature side with religion (of all things)
and be set in contraposition to science?

Of course, that association had already happened, and by now, it is the default
understanding. From the earliest contacts onwards, Indigenous knowledges
have either been plundered for their content (Safier 2010; Gruzinski 2013) or
side-lined as 'myths' and 'ill-conceived religious beliefs' (Lévy-Bruhl 1926).
Anthropology, the once rational heir of theology (Douglas 1984), further
reified these understandings classifying myths as precursors to religion and
science (Weber 1922; Evans-Pritchard 1976; Durkheim 1969 [1915]; Tylor
1958 [1871]). Meanwhile, despite many attempts to show the contrary, by
and large, science continues to be understood through a unilineal theory of
evolution, one largely focused on European sceneries, even in anthropology.
Science continues to be presented as a unique and distinct Western develop-
ment, i.e., European, but simultaneously emergent and independent from the
religion and myth that purportedly preceded it (e.g. Latour 1993, 2010).

Religion and science: a history of translations, displacements, and betrayals

Ingold draws part of his argument on the etymology of religion as *re-legere*, re-
reading and readying. This description is accurate for Judaism, Christianity,
and Islam. These are indeed reading religions. However, their focus is on
the scriptures; the Book of Nature is not and has not been their primary
source of authority, wisdom, or moral fortitude. Even while St Augustine
regards natural philosophy as a discipline whose dominion is necessary to
convince and convert pagans, he still claims that it ought to remain subor-
dinate to the theological interpretation of the scriptures (De Mowbray 2004).
Readying people to certain scriptures, and coordinating their perceptions and
actions to specific interpretations are their conduits to power. Hence, from
their premises, these religions privilege those who read or could potentially
learn to, i.e., humans, and subordinate worlds to the universalist narratives
of their scriptures. Book religions control reality by determining who can
read which text and regulating those interpretations; that has been one of the
main functions of theology (Eisenstein 1980), and it has often been at odds
both with dreamworlds and the imagination.

Contrary to what Ingold argues, Western prejudices toward dreamworlds
long precede the Enlightenment. There is, in the Bible, a record of the

importance of dreams and visions in books like Daniel and Revelations. There were also Christian mystic traditions such as the Franciscan Spirituals. Mysticism played an important role at various points in the history of the church. Nevertheless, following Deuteronomy 18: 10–11, Canon Law condemned the consultation of dreams as a heathen and potentially heretic practice (Kruger 1992, 11–14). Through the Middle Ages and well into the Early Modern period the difference between admirable mystics and condemned prophetic visionaries was tenuous and tightly controlled by the Holly Offices of the Inquisition (Shuger 2022; Elliott 2009). Christian missionaries were already hoisting those same colours of censorship of dreamworlds from the earliest contacts with Amerindians (e.g. Pané 1988 [1500]; Breton 1665), while seeking to '*reduce*' Amerindian peoples, which meant vanquishing and eradicating Indigenous knowledge systems (Owensby 2011) through processes of translation and purification (Latour 1993, 2010).

Elsewhere, I have explored in more detail the relations between Amerindian and European knowledges and realities through the Encounter (Giraldo Herrera 2018); in the following three paragraphs, I will present an abbreviated version of that argument. Early Christian missionaries in the Caribbean and the Americas like Ramón Pané (1988 [1498]), who arrived with the second voyage of Columbus, describe Taino *behiques,* authorities akin to modern Amerindian shamans, as 'idolaters' and 'quacks' '*scamming innocents with the aid of inebriating substances that mashed their brains and made them see what was not there'*. Simultaneously, these friars employed as a translation for spirits and deities *behique* notions of *çemies*: the entities that constituted the beings of walking life, the bodies of animals, plants, rocks, soils, rivers, winds and clouds, and which transmigrated between them, permeating and protecting or inflicting them with diseases – the beings with which *behiques* dealt. Although employing Amerindian terms, these missionaries dismissed Indigenous understandings of spiritual matters as naïve and characterised Taino *çemies* as false deities or demons. The missionaries seeded animosities towards *behiques,* overtook their sacred sites and forbade idolatrous cults of figures made of guaiac wood.

Meanwhile, the natural historian Oviedo recognised *behiques* as expert medics with deep knowledge of diseases like the pox, which Columbus and his crew 'had brought back from the Americas', and the botanical remedies to cure them. Eager to commercialise spices like guaiac wood, Oviedo transmitted this information to pen-pals, like the Veronese polymath Fracastoro. Fracastoro became widely renowned for a poetic medical treatise naming and describing syphilis and its cures. He renders into European canons (Fracastoro 1863 [1535]) the Pan-Amerindian Myth of the Sun and the Moon, which describes how syphilis became the new Sun dominating their worlds. 20 years after this treatise, Fracastoro postulated the earliest theory of contagion involving *seminae* (Fracastoro 1930 [1546]): seeds, which he describes as living beings that reproduce and attack the body causing contagious diseases. Fracastoro, himself, did not understand the importance of his theory, undermining it as a sidenote to humoral theory and dissociating it from the history of syphilis, which he attributed to astrological causes. Indeed, Fracastoro hoped to pass

to history in astronomy, where he developed a heliocentric theory (also coinciding with Amerindian ontologies), arguing that the sun was at the centre of the universe and the earth rotated about it. However, Fracastoro did not gain the papal patronage to publish the revolutionary heliocentric theory, which instead was granted to Copernicus, the Polish Catholic canon, an authorised clerical academic position (Granada & Tessicini 2005).

Through the following centuries, syphilis would become endemic in the West, chronically affecting large swathes of its population and many of its most important cultural figures such as Beethoven and Nietzsche. As evidenced by the famous saying 'civilization is syphilization', syphilis became a dominating force and a characterising feature of the West, even if Fracastoro and his contagion theory are not acknowledged as sources by later germ theorists (Nutton 1990; Hudson & Morton 1996). The translation *çemes*: *seminae* constituted an ontological scaffold on which *Germ theory* would be built over the next couple of centuries. *Germ theory* purified this knowledge undermining and dissociating itself from Fracastoro's theory of contagion, replacing the Latin *seminae* with its synonym *germen*, thereby erasing the tracks of its inspiration and any homophony with Taino *çemes*.

A century later, while Galileo was being dealt with by the Inquisition for defending the heliocentric theory and Descartes moderated his discourses, Fray Raymond Breton, whom Richelieu had commissioned to Christianise and make alliances with the Carijuna in the Antilles, echoes Panè's complaints about Caribbean peoples: *'Making them believe in an invisible God, was not an easy task… They would not believe in anything they could not see or use …'* (Breton 1665). And yet Breton continued to lament they credited what they saw and heard in dreams or under the influence of the songs and the inebriating substances provided by the scamming *boyaicou* (Breton 1665).

Before Bacon could formulate his Principia, the Carijuna and many other Amerindian peoples were already showing staunch inclinations toward something akin to radical empiricism and pragmatism, which made them impervious to the idea of an imperceptible and unresponsive universal deity. The positions of Amerindian peoples and their insights into the world's workings constituted a fundamental challenge to Christianity and its natural philosophy. The initial reflex through the Renaissance had been to resort to Classical philosophy and mythology. Ultimately, the situation called for a more profound Reformation and Enlightenment.

Although the rise of rational science through the Enlightenment is presented as a fundamental rupture with the past, the science of the Enlightenment was already heir to the encounter with Amerindian, African, Asian, and Oceanic knowledge traditions. It was simultaneously the result of the appropriation of the knowledge of these others and, like the Reformation too, a reassertion of positions characteristic of Christian orthodoxy such as universalism, individualism and human exceptionalism (Schaeffer 2005), in response to the challenges posed by these epistemologies on Christian doctrines.

The breakthrough of the Reformation was to democratise the act of reading the Bible, opening to the masses of converts the useful technology

of reading (Scialabba 2013; Eisenstein 1980). The emphasis on literality was the means to retain control, foreclosing alternative interpretations, which remained guarded and reserved to pastors and priests with formal theological training. Similarly, recasting scholasticism and natural philosophy into the new enlightened attires of rational empiricism Science was marked by an unprecedented publication effort. The emphasis on objectivity was the means to retain power over which experiences counted (Visvanathan 2006), i.e., those achieved within the context of theologically authorised institutions like the University.

Through the Enlightenment and most of the Modern period, Science (understood as the explanation of reality) remained subordinate to Christian authorities, either Catholic or Protestant. Many of the troubling aspects identified by Ingold are derived from the persistence of Christian religious dogmas at the basis of modern scientific epistemologies and institutions. Enlightened and modern Science, perpetuated through its institutions and theories a reading of the world that closely parallels theological interpretations of the Christian scriptures in its fundamental characteristics: the monotheistic premise of universalism, Thomistic definitions of individualism (Aquinas 1920), and human exceptionalism (Schaeffer 2005). Universities continued emphasising the purported universality of being and knowledge, perpetuating the established social hierarchies and power monopolies. The constant quest for a unified theory in physics attests to this monotheistic drive. From Descartes, through Weber and Durkheim and onwards, social sciences continued reifying and fostering the notion of the individual, which is not universal (Strathern 1988). Even the biological theory of natural selection fosters the notion of an omnipresent, omniscient, and omnipotent force to explain the evolution and behaviour of living organisms other than humans.

Nevertheless, through contact with others and the challenges posed by their realities and ways of understanding that plurality that is the West has changed and adopted a more reflexive tone and other ways of doing science and religion. It has come in contact with and expressed other ways of readying and reading worlds beyond 'holy scriptures'.

Holding to your ear

In recent years, there have been significant developments in cognitive justice (Visvanathan 1998, 2006) and the decolonisation of knowledge (Mbembe 2015; Vierros et al. 2020; Thaman 2003). It has become evident that science is not monolithic and has been fed from many different sources, with knowledge travelling back and forth (Safier 2010; Raj 2013; Elshakry 2010; Tilley 2010; Sivasundaram 2010). However, it is also crucial to substantiate how Amerindian epistemologies reach their knowledge. This might seem counterintuitive; cultural relativity has been a tenet of anthropology (Holbraad 2012, *Truth in Motion*). Hence, we assume that to respect non-Western traditions, it is necessary to regard them as valuable for themselves and on their own

terms rather than measuring them by Western or other extraneous standards. However, this attitude has a proclivity to become reified in the purported inherent incommensurability of realities often proclaimed by constructionists or in the complementary bracketing of non-Western 'knowledge' under the guise of tolerance by reductionists. Either of these alternatives undermines these knowledge practices. Either of them dissociates their assemblages and ruptures their alliances, limiting their capacity to continue to constitute their worlds amidst everyday interactions through partially shared realities. Native American and other Indigenous knowledge traditions can be measured too; have contributed to sciences and continue to do so (Vierros et al. 2020). Validating traditional knowledge through scientific perspectives can help restore the alliances, assemblages and capacities broken by earlier purifications, and thus reinstitute these onto/epistemologies as valid methods. Indigenous communities and Indigenous scientists develop approaches bridging worlds, satisfying their interests, articulating their understandings and finding validation beyond their cultural frameworks (TallBear 2014). I want to offer a potential path in this direction: informed speculation on how auditory amongst other forms of perception affords access to microbial worlds, and how Native American understandings of reality constituted an ontological scaffold over which microbiology developed.

According to an infamous story, a friar presented the Bible to Atahualpa, telling him it was the 'Word of the Lord'. The Incan emperor, a descendent from the Sun, examined the book, held it to his ear, listened attentively and said: 'I cannot hear a thing', and smilingly returned it. The friar took offence that 'Atahualpa had refused the Word of the Lord'. Pizarro weaponised this rejection as an excuse to lunge with cavalry and artillery. The Incan emperor was captured and, despite paying a heavy ransom, was tortured and sentenced to death. This story was likely embellished in British versions to emphasise Catholic Spanish fanaticism and to reify the claim that Amerindians lacked writing. Surviving Incan khipus and Mexican hieroglyphics attest to the fallacy of the latter claim.

However, there may be some truth to the story. Hearing plays a fundamental role in many contemporary Indigenous epistemologies and communities in Peru and Ecuador (Morse & Lomay 2021; Kohn 2013). For many communities, it is perhaps the most important of the senses in waking perception, but also through dreaming and hallucinogenic or otherwise enhanced forms of experience (Santos-Granero 2006). Entities like Master of Game sometimes reveal themselves to a person through sounds or songs, which are often inaudible to others. These songs communicate and constitute potent forms of knowledge. When intoned, these songs permeate and become consubstantial to the things, and beings sang upon, altering their properties and capacities (Brabec de Mori 2015). They can cause or treat diseases and madness (Hayans, Wassén, & Holmer 1958). Atahualpa could have expected to hear something from the Bible, something like the entities contemporary shamans deal with. He would have expected the Christian god to speak to

him, or perhaps better to sing, to sing a song of power. If it were true, the episode would evidence a dramatic conflict of expectations regarding literality and authority: the expectation of Atahualpa of a literal phenomenon vs the assumption of literality of the content (the claim that what is written in the Bible is the dictum of a god). The authority of the word by attribution, qua message from a God (Christian) vs authority associated with the power to communicate the experience of listening to a Master of Game (Inka).

Now, in line with missionary positions delineated above, since the nineteenth- century Western medicine has characterised hearing voices or songs in the absence of acoustic stimuli as meaningless aberrant phenomena linked to brain disorders, which were meaningless other than as key diagnostics of schizophrenia (Blackman 2016). Such diagnoses were employed to pathologise shamanism and its practitioners in Eurasia and the Americas (Langdon 2007; Kehoe 2000). Nevertheless, as suggested by Blackman, these experiences are meaningful.

Following Ingold's invitation to explore religious sensibilities, readying with the world, reminds me there is an alternative etymology that derives religion from *re-ligare* or re-joining (OED 2011), to make things converse into being. I want to explore an alternative approach to how these experiences constitute forms of perception undergirding their meanings, brought by a memory which echoes Atahualpa's story and makes me resound. When I was six years old, my grandmother placed a seashell on my ear and revealed how I could hear the ocean within. Someone, perhaps my uncle or my dad, broke in and explained that what I was hearing was the blood flowing through my inner ear. There was a brief standoff, an exchange of murderous glances between the poetics of reality and the reality of explanation. However, amusement aside, I was busy with the seashell, and the explanation did not break the spell; on the contrary, it completed the enchantment: The seashell was a mirror of sorts. With the seashell, I could hear the ocean inside me.

The phenomenon of the seashell is closely associated with some forms of tinnitus. Tinnitus encompasses a wide variety of some of the most baffling phenomena encountered by ear specialists. Some, like a brief whistling sound, are frequent, occasional experiences. However, some tinnitus can be associated with hearing loss and with hearing hyperacuity. These sounds may become an unbearable torment to many affected people. Many forms of tinnitus are thought to be *subjective,* purportedly auditory hallucinations centrally generated by the auditory nervous system in the apparent absence of actual acoustic input. In many instances, tinnitus persists even after the surgical section of the auditory nerve (Lockwood, Salvi, & Burkard 2002). However, complicating the panorama, tinnitus can also be *objective,* the experience of auditory stimulus derived from acoustic phenomena produced inside the head or within the ear, i.e. *entotic* (de Waele, Selesnick, & de Corbiere 2007; Lockwood, Salvi, & Burkard 2002).
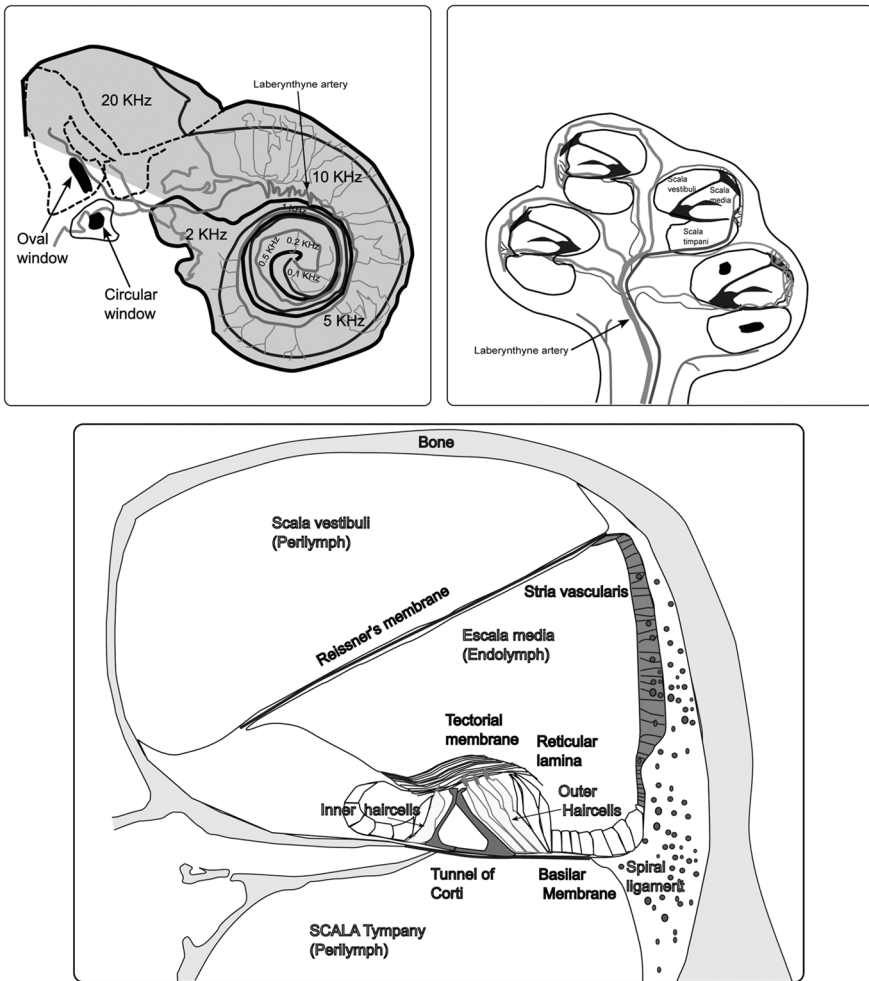
Figure 4.1 A seashell in the ear, the mammalian cochlea. Above the vessels of the cochlea. Hearing range in KHz corresponds to the human range. Below the Corti organ. Line drawing by the author based on diagrams in Fettiplace and Hackney (2006) and Keidel and Neff (1974).

Tinnitus and the seashell phenomenon demonstrate some of the paradoxical capacities and features of the mammalian auditory system (See Figure 4.1). The *mechanosensory hair cells* of the mammalian *cochlea* (the seashell constituting the inner ear), its structures and mechanisms constitute an exquisitely sensitive auditory organ transducing soundwaves. Moreover, the inner ear does not passively register sound but actively

amplifies and modulates vibrations even before any signals reach the nervous system. However, the system requires copious blood irrigation, which is extremely noisy.

Sound reaching the external ear is first transduced by the tympanic membrane through the ear bones or *ossicles* in the medium ear and connecting to the *oval window*, whereby air vibrations turn into displacements of cochlear liquid in *the scala vestibuli*, one of three parallel compartments filled with fluid inside the cochlea: The *scala vestibuli,* the *scala media* and the *scala tympani,* of which the last one also has a circular window to the middle ear. The *scala media* is separated from *s. vestibuli* by Reislers's membrane and from the *scala tympani* by the *basilar membrane* and houses the *organ of Corti.* This is a sensory slip along the basilar membrane covered by the semidetached resonating *tectorial membrane. Inside* the organ of Corti, there are four rows each with about three thousand mechanosensory *hair cell* receptors, which transduce liquid vibrations into neuronal electric signals. The organ of Corti registers vibrations in the fluid, from the highest frequencies near the windows at the basis of the cochlea to the lowest tones at its apex.

To wonderfully complicate matters, the Corti organ is not a passive receptor. Most of the information conveyed to the central nervous system (about 95%) is relayed via the cochlear nerve from only one of the rows: the *inner hair cells.* Meanwhile, the three other parallel rows and the *outer hair cells* mechanically amplify and modulate frequency-specific vibrations, changing their form upon stimulation, tensing, and deflecting the basilar membrane to increase the effect of vibrations on *inner hair cells* (Strelioff, Flock, & Minser 1985).

What might come as a surprise is that the lower hearing threshold is about 20 µPa or 0.5 nanometres of amplitude at the organ of Corti, which means that the *cochlear hair cells* are sensitive to atomic size vibrations (Patuzzi 2011; Gillespie & Müller 2009). To protect these cells from the noise of the rest of the body, this organ is encased in bone, the *osseous labyrinth*, suspended and isolated from the rest of the skull. However, these cells must operate in a hyperpolarised solution, the endolymph. Maintaining the polarity of the *endolymph* involves high energetic demands, provided by that profuse blood irrigation. However, the heart's beat, changes in pressure associated with it, and even minor turbulence would hyperstimulate and deafen *hair cells.* Dampening pressure alterations and the noise brought by the pulse, the circulation to the cochlea is protected by a system of long and convoluted or *tortuous arterioles* that reduce the speed and homogenise the flow of blood before it penetrates the walls of the *osseous labyrinth* to feed the *stria vascularis,* a complex network of capillaries and a thick layer of epidermal cells and macrophages constituting one of the membranous walls of the *scala media* in the cochlea (Keidel & Neff 1974). This epidermal layer constitutes the *blood labyrinthic barrier*, which drastically restricts the

passage of particles from the capillaries into the cochlea and muffles their noise (Nyberg et al. 2019). However, the sound and pressure of blood flow and even movements within the inner ear remain noisy and may be perceivable, especially when lacking alternative auditory stimuli, like in outer space or anechoic chambers, or when there are alterations in the normal blood flow, under the influence of some antibiotics, hallucinogenic substances, or when suffering from systemic infections such as those produced by bacteria *Treponema pallidum spp* (Bewley & Ruckenstein 2016), the causal agents of diseases like syphilis or yaws, but also culturally cherished medical conditions like pinta (Biocca 1945; Guimarães & Rodrigues 1948; Carrillo 2013).

Echoing speculations listening to microbe-spirits dancing

Following the Christian definitions of humans as individuals, Western sciences and medicine were reluctant to acknowledge germ theory for a long time. Even after accepting the role of microbes in disease and their presence in the intestinal tract, medicine continued to pathologise their presence inside the body, assuming that blood was sterile unless affected by a systemic infection. Moreover, it was assumed that the brain and the cochlea were protected by the blood-brain-barrier and blood-labyrinth-barrier (Davis 1993). Only recently, genomic studies are increasingly demonstrating that under normal conditions, bacteria circulate and establish communities through the circulatory system, including the inner ear. With microbiome research, the perspective of our bodies as permeable and constituted by a multiplicity has been widely accepted (Lorimer 2017; Lorimer & Hodgetts 2017). Moreover, it is becoming evident that microbes influence behaviours (Dinan et al. 2015; Lyte 2013; David et al. 2015; Selhub, Logan, & Bested 2014, Greenhough et al. 2020). Hauptmann et al. (2020) demonstrate beautifully how bacteria generally considered dangerous pathogens are made innocuous for instance through Greenlandic Inuit traditional food preparation methods.

The first speculation I have sketched elsewhere (Giraldo Herrera 2018) is that contemporary notions of microbes are a translation of *çemies* and other beings initially translated as spirits. As demonstrated by Kapono (2018), current understandings of microbes parallel many of the characteristics describing tutelary 'spirits': They permeate our bodies and relate with specific animals, plants, soils, or bodies of water. While a tiny proportion may produce specific infectious diseases, even these are innocuous and often necessary to their host species. Like master spirits (Morales 1990), microbes can settle in and be transmitted through objects or fomites. On the other hand, like 'master spirits' (Kopenawa & Albert 2013), bacteria and other microbes communicate through displays equivalent to singing and dancing: Microbes develop quorum sensing (Ben Jacob et al. 2004; Velicer 2003; de Kievit and Iglewski 2000; Xavier & Bassler 2003; Hastings & Greenberg 1999)

employing chemical substances, light, electric currents, and sound to coordinate their behaviours (Reguera 2011). They produce sound through their movement and activity. Specific frequencies within human hearing ranges affect their behaviour, metabolism, and reproductive rate (Matsuhashi et al. 1998; Sarvaiya and Kothari 2015).

Single bacteria produce oscillatory movements with amplitudes of circa 60 nm (Rosłoń et al. 2022), meaning that they are within the threshold range of *hair cells*, and our ears could fulfil an alternative role as nano microphones. Given the dense level of irrigation, the tortuous and slower flow through the *stria vascularis* could constitute an ideal medium for bacteria to settle down. Bacteria settling in specific sites of the stria vascularis along the inner ear could produce sounds resonating in specific audible frequencies through their movements. These bacteria could also employ the resonating properties of the cochlea to hear the waking world, communicate it to the world inside, or collaborate with shamans and other singers (Gatt 2020) to communicate and affect deeper layers under the waking world. The possibility of blurring the boundaries of perception hints that the realities experienced through dreams and visions are part of a dense system of communication with the microbial world.

Now proposing these speculations is just an initial step. Of course, it is crucial to test, which might imply refuting and coming back again to speculate on the drawing board. However, it is also an important step in two other ways: first, it is crucial to avoid repeating reductive translations, that is, we should not be content with translating only the aspects that match with already accepted scientific tenets. Rather as Ingold suggests, we should also rescue those classified and dismissed as 'religious', and still others that neither religion nor science were capable of grasping. Second, it is crucial to find ways to be ready with and re-join the world, questioning the persistent doctrine of human exceptionalism that continues to blindside us to the interests of other-than-humans like microbe-spirits. Perhaps then we might open a path for diplomacy in our interactions. It is vital to dream and recognise dragons when we feel them.

Acknowledgements

Note

1 Latour (2018) traces the alternative etymologies of link and scruple.

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5 Belonging to this World

How Tim Ingold Inspires Two Theologians

Celia Deane-Drummond and
Norman Wirzba

Tim Ingold is one of the rare anthropologists who are prepared to take theology seriously, along with a host of other disciplines in the arts and humanities. His intellectual freedom to draw on sources from multiple disciplines, and his commitment to return again and again to concrete, lived experience (Ingold 2022: 7), make his writing genuinely invitational and dialogical, and thus capable of influencing a wider public beyond the academy. We cannot possibly do justice to the massive scope and scale of his writing, but it is enough to point out that his corpus embodies what he claims, so reading his work is like becoming immersed in the storied history that has formed his journey, leaving the reader profoundly challenged and changed.

Both of the authors of this chapter, Celia Deane-Drummond and Norman Wirzba, are what is sometimes termed Christian eco-theologians or ecological theologians, and while Deane-Drummond has a prior research background in the natural sciences, specifically the study of plant physiology, Wirzba is a philosopher by training and invested in agrarian practices and communities. Both of us, for slightly different reasons, have had the occasion to draw on and be inspired by Ingold's writing and thinking, especially in so far as he is an ecological anthropologist grounded in a sense of belonging to

the world (e.g. Deane-Drummond 2019; Wirzba 2021). His explorations of an embodied and embedded life in places and among fellow creatures serve as an important corrective to spiritual quests that are often disembodied and other-worldly in their aim, and his account of humans 'humanifying' themselves, i.e., a human being's self-description as having a verbal grammatical form (Ingold, 2015:117), opens fresh avenues for people of religious faith to understand the nature of spiritual formation.

Wirzba has devoted considerable effort to trying to understand the meaning of this world as God's creation and to articulate the difference this understanding makes for how people inhabit Earth. Ingold's critique of spectator models of perception, along with his sophisticated analyses of the storied and developmental nature of places (Ingold, 2000), was an early inspiration for a recovery of the dynamic, open-ended, mutually-involving character of God's creation. No creature exists alone or is the source of its ongoing life, but is always already implicated in divine powers that join creatures to each other and to God. His essay 'Rethinking the Animate, Reanimating Thought' (Ingold, 2011) was of particular importance for reassessing ancient Israelite descriptions of human dependence on soils, waters, and fellow plant and animal creatures, and for a rethinking of human existence as essentially and always open to God's animating spirit moving through every living body. More recently, Ingold's account of the nature of creative action (Ingold, 2007b) has enabled Wirzba to redescribe human work as a creative enterprise in which followers of God seek to participate and extend God's life-creating and life-sustaining purposes in the world (Wirzba, 2021: 212ff). One of the great merits of Ingold's work is that his critiques of modern philosophy, especially his critiques of philosophical framings of the self and the meaning of the world, enable theologians to reassess their own captivity to modern formulations that have distorted, if not occluded, how founders of the Jewish and Christian faiths understood the meaning and purpose of human life.

What we hope to do in this chapter is not just describe how some of his key ideas influence and contribute to our own, but also how several of his key themes can be of considerable value to scholars of religion and theologians more generally. Theology, as in Ingold's discussion of art and anthropology, is also orientated towards human futures as well as the past, 'forged in the crucible of collective lives', and in joining these lives seeks to find a way of 'fashioning a world fit for coming generations to inhabit' (Ingold, 2019: 660). If religious thought and practice (as suggested in the etymology of *religio*) centre on 'joining or binding together' life, we should not be surprised that Ingold's recent stress on *correspondence,* which is the *co-responding* of lives that are always together, always moving in and through each other, and developing together, will be highly generative for scholars of religion (Ingold 2021). Moreover, the style of Ingold's thinking and writing isn't simply multi-disciplinary. It is convergent, like the life he is trying to describe and understand. The principles of convergence as Ingold (2019) lays them out could equally be applied to anthropology and theology. These

principles are first those of *generosity*, namely, paying attention to what is offered; second, *open-endedness*, that is, revelatory rather than closed, 'making room for everyone and everything' (Ingold 2019: 661); third *comparison*, that is realising that there are other options when developing an idea and being discerning about what path is taken; and finally *being critical*, that is, acknowledging the limitations of any area of knowledge. His belief that 'we make the future together' in a way that 'can only be achieved through conversation' (Ingold 2019: 661) resonates with Pope Francis' stress on dialogue in an integral approach to addressing the pressing issue of care for the earth in the face of the global ecological emergency (Pope Francis 2015).

Of course, like art, not all theology will necessarily follow these principles, but in so far as theology suffers from the same temptations as the observational sciences that Ingold critiques in a post-Enlightenment world, it too can become enclosed and monological, bent on classification and the transmission of knowledge rather than inviting others to join in the never-ending search for wisdom. In this context it is helpful to distinguish the two academic disciplines of Theology and Religious Studies. Whereas the latter draws on the standard methods of the social sciences to describe the histories of religious traditions and the material (scriptural and artistic) expressions of religious communities, the former tends to work within a specific tradition to determine the truth, coherence, and practical implications that follow from its core faith commitments. Put another way, theology is fully immersive (self- and other-involving) in a way that religious studies generally is not. The temptation theologians must avoid is the temptation to what Ingold calls 'totalisation' (Ingold 2019: 665), or, in theological jargon 'triumphalism', is the moment when theologians fail to acknowledge human finitude and fallibility and claim to have a "God's eye view" of the world, and comprehensive insight into the meaning of time's unfolding. Triumphalism is so dangerous because it assumes a (divine) spectator position that exempts people from the concrete, complex, and enmeshed realities of everyday practice. Moreover, it forecloses on life's open-endedness and its ever-fresh co-development. The challenge for theologians is how to talk about the future in relation to the divine without leaving behind the concrete everyday rhythms and lifeways that shape our human becoming. Ingold's insights help provide some important clues as to ways forward in that task.

Entering life's meshwork

Ingold's argument for conceiving social communities as a meshwork rather than a network is integral to his desire to focus on actual lifeways, rather than what he terms the *inversion* that converts activity to bounded points. Similarly, in the case of theology, engagement with science, such as evolutionary explanations of religion, runs the risk of being *reduced* to that science. Such engagements with science can become a type of narrowing that occludes lived (and embodied) religious experience. Even within theological studies, more systematic approaches can reduce religious beliefs and practices to conceptual frameworks that seem out of touch with the experience of the

sacred. Ingold's clearest argument outlining his notion of a meshwork is in *Being Alive* (Ingold 2011), though meshwork thinking makes its appearance in many other texts as well (e.g. Ingold 2008 2012; 2018b; 2022). Central to this argument is a 'way of being that is alive and open to a world in continuous birth', giving rise to 'astonishment' rather than 'surprise' (Ingold 2011: 63). In the world of becoming, in contrast to the surprise of unfulfilled scientific predictions, astonishment is common even in the ordinary events of life. A life suffused by astonished wonder is also resonant with a life attuned to sensing God's immanence in the world, where God's presence, as the mystics understood only too well, can become evident in the ordinary events of the everyday rather than just confined to the out of the ordinary or the surprise of the miraculous (Deane-Drummond 2004).

Ingold's critique of the 'logic of inversion' is doubly important since it challenges the soul-body dualisms of philosophical *and* theological thinking. According to this logic, most influentially articulated by Socrates in Plato's early dialogues, the essence of the person resides in an ethereal soul that enters a body at birth, resides and animates it temporarily from within, and then exits the body upon death to return to an immortal heaven. The many expressions of this dualistic understanding of personhood that followed resulted in spiritualities that denied the importance of the material world and human embodiment. Its latest popular form can be found in various versions of transhumanism where discontent with embodiment and a desire to escape Earth and terraform other planets are often expressed. The central problem with dualism is that it fails to appreciate the porous, dependent nature of flesh, what we might call the body's susceptibility to and the constant need for a living world to nurture it. Human beings are not self-contained or self-animating. They live in the mode that Ingold develops as the 'middle voice' – acting, but always being acted upon, moving, but always feeling the movements of others within themselves (Ingold, 2015: 145). The idea of a self-standing human being is a delusion that needs to be resisted because it simply is not true to physiological and ecological experience. Theologically speaking, the elevation of the soul at the expense of the body also needs to be rejected since it denies the material world that the God of the monotheistic traditions is believed to create and sustain in its unfolding.

Ingold's discussion on meshwork is important for theology since it gives a different way of perceiving how humanity might connect with other creatures, and even provides an alternative way of approaching what it means for life to encompass the spiritual. Traditionally anthropocentric in the narrow sense, theologians, especially after the post-Enlightenment rise of modern science, have given far more attention to a 'God of history' focused on human concerns rather than a 'God of nature' focused on the world's diverse creatures and places. It is as though scientists and theologians came to the agreement that science would concern itself with the material world and theologians would keep their focus on the spiritual matters of the soul's salvation. (Ingold [2022] describes the elevation of new scientific models of explanation over religious frameworks in his essay "Dreaming of Dragons").

Taking natural habitats and non-human creatures as topics worthy of serious theological reflection was, for more conservative Protestant and Catholic theologians, to edge towards the crime of 'pantheism', a belief that God and the world are the same.[1] Over time, the centre of gravity for academic theological studies has shifted, so pantheism or positions close to it are common and even celebrated as opposing what are considered to be dualistic alternatives which stress transcendence (e.g. Keller & Rubenstein, 2017)[2]. Ecclesial authorities, however, have tended to remain traditional in orientation, emphasising God's transcendence to and immanence within creation.

Pope Francis opened an important new chapter in ways of being in the Roman Catholic Church by putting much more emphasis on the need to listen to Indigenous spiritualities and engage in dialogue with diverse cultures and religions so that all branches of knowledge are included (Pope Francis 2015). Moreover, Pope Francis' elevation of the goodness of Earth as our home, and nature as 'a magnificent book through which God speaks to us', signal a desire to restore material reality to the centre of theological reflection. This world is not absurd or a cosmic accident. Nor is it believed to be a mere play of material forces. It is *created* by God, and thus is the material expression of divine love. In his words, 'Every creature is thus the object of the Father's tenderness, who gives it its place in the world' (Pope Francis 2015: §77) His integral ecology has some echoes in Ingold's expansive approach to ecological anthropology that stitches people deeply within a meshwork world. Ingold provides a way of learning from Indigenous traditions that can be a model for theologians looking to challenge the rootlessness and placelessness of so much modern, Western life.

Under the influence of Bruno Latour, actor-network theory and other forms of system thinking have become increasingly influential in contemporary thinking, including in theology, as they provide a theoretical basis for thinking about how individuals relate to other beings in communities (Howles 2025). Ingold shows the paucity of this theory by enacting a conversation between ANT and SPIDER, ANT = Actor Network Theory and SPIDER= Skilled Practice Involves Developmentally Embodied Responsiveness (Ingold 2011: 63–65; 89–94). For ANT, the effects of agency are distributed throughout the network of interconnected points. For SPIDER, the lines do not signify connectivity but are the ways in which tangled threads and pathways emerge along particular lines of perception and action. This storied conversation illustrates clearly the limitations and indeed the impasse of attempting to draw up *any* theoretical models for understanding the actual lifeways within which dynamic interactions between beings take place. Modelling, along with the desire to categorise things as discrete, and therefore identifiable, substances, is currently fashionable insofar as it gives the impression of empiricism and the hard sciences. We might doubt if modelling will cease to be applied in the social sciences. But Ingold argues persuasively that this approach occludes the much less discrete, tangled character of real life that is better characterised in narrative rather than categorical terms. Narratives are unending and entail multiple perspectives, and thus encourage

greater humility in those seeking to understand life's complexity and mystery. The desire for an empirical scientific footing can, therefore, create a scenario which is an inadequate reflection of real life. While Deane-Drummond has used the language of networks in the context of multispecies approaches to ethics (Deane-Drummond 2019: 139, 177), its intended meaning was much closer to meshwork thinking (c.f. Deane-Drummond 2019: viii).[3]

Deane-Drummond argues in *Theological Ethics Through a Multispecies Lens* that far too much attention has been placed in contemporary theological ethics on considering the individual as an isolated subject, which fails to account sufficiently for the evolutionary entanglement with other creatures living within a multispecies commons that is fundamental to human emergence. Such an approach offers an alternative to individualistic considerations of animal ethics expressed in forms of animal rights that focus on the worth of individual creatures. Theologically isolating the individual in ethical discourse is a strange development, since ancient texts focused on the importance of wisdom, which hints at alternative ways of encountering the world through close observation and reflection of complex relationships between different creatures and their specific lifeways. Cynthia Willett has also argued, from a philosophical perspective, for an interspecies approach as an alternative to rationalistic Eurocentric moral systems, which she argues have failed to expose racist, sexist and normalising bureaucracies, grounding her theory on what could be termed a form of ethical naturalism in response to the other, hence a form of alterity ethics, guided by generosity and compassion. While Deane-Drummond acknowledges her critique and the importance of compassion, accepting that encounter is a significant alternative to individualistic approaches; she prefers to begin with traditional virtue frameworks, but then re-write such frameworks through the lens of a multispecies and communitarian approach. Ingold's way of approaching science, including his rejection of dualistic thinking of all kinds and his development of his concept of meshwork resonates with theological wisdom, though the latter is far more explicit than Ingold is prepared to be in its language about God.

Theology has, on occasion, been defined through wisdom, but it is customary to associate the love (*phileo*) of wisdom (*sophia*) with philosophy since it is grounded in particular stories, traditions and life experiences. Although reading Ingold could give the impression that he has rejected Darwinian thinking entirely, he envisages ontogenesis in evolution as complementary, a minor key that accompanies the major key like a shadow, while insisting that it is 'the minor variations that are of the essence of life itself' (Ingold 2022: 52–53). Ingold's understanding of wisdom is closer to the earthly Hebrew tradition of wisdom, *ḥokmah*, which encompasses the whole of human experience.[4] Ingold describes the 'stretch' of human life in the soul, where 'wisdom shadows intelligence, so the soul shadows the self' (Ingold 2022: 56). Aquinas believed that the soul was found in all creatures and not just human beings (Deane-Drummond 2012). Wisdom, in Ingold's interpretation, unsettles, is relational and affective, making vulnerable rather

than creating a protecting wall of knowledge (Ingold 2022: 59). Certainly, theological wisdom defies definition, for by being defined it is contained, which itself works against the wisdom recognising that it can never be found, but is always a search (Barton 1999), or as Ingold prefers, a way of paying attention to the world and following its grain (Ingold 2022: 59). But just as wisdom plays this role as fully immersed in the world, it is also, at least theologically, open to the sacred within that world and acknowledges the possibility of correspondence with the divine. Practical wisdom is close to Ingold's definition of wisdom, but recognising divine wisdom shows human vulnerability and limitations. Further, for Ingold wisdom is the dynamic of unfolding, and so 'is not cognitive, but ecological' (Ingold 2022: 60). Practical wisdom, on the other hand, includes a cognitive dimension in so far as it is discovered through human practices of deliberation, judgement and action. Ingold misses out on the judgement aspect of how the ancients understood wisdom. For Deane-Drummond, at least, wisdom has the potential to understand from within the depths of immersion in the world, but also have insight into its place in the overall spectrum of knowing and becoming. It is that, perhaps, which then gives it the potential to become the form of worlding.

Another crucial aspect of meshwork thinking that is core to Ingold's way of reasoning that bears in an important way on theological reflection is his rejection of human symbolic meaning-making in their environment in favour of the idea of *affordances,* a term that he develops from ecological psychologist James Gibson (Ingold 2018, 2000: 166–8). Of course, if symbolic meaning is extended to other animals this avoids the problem Ingold identifies, namely the dualism between a symbolic meaningful human world and a meaningless world of other animals. The semiotics of C.S. Pierce can be rendered amenable to a more inclusive approach in anthropology (Kissel 2020:69–85) and theology (Robinson 2020:86–109), therefore, in this sense is a useful bridging concept. Ingold rejects this move, even though admitting that he was initially attracted to it (Ingold 2022: 337–346). His rejection is based on his preference for understanding how creatures inhabit their world. Jakob von Uexküll argues that creatures create meaning in their world, while Gibson argues that creatures find meaning within it. In Uexküll's thinking, the *Umwelt* of even lowly ticks is characteristic of that tick. Gibson, however, preferred the concept of *niche*, which offered the opportunities it affords to any creature who might discover it. A given environment, therefore, offers various *affordances* to creatures who then discover it. The difference between the kind of perception offered by affordances and that of semiotics is that only in the former is perception direct, in the latter it is always mediated through a signifier. For Gibson, meaning is discovered through practice rather than giving prior meaning to an object. While Ingold has reason to challenge aspects of Gibson's thought (Ingold 2009), the most important aspect from a theological point of view is that it puts more emphasis on how organisms find their way in the world through the meandering movement of life, rather than what he terms 'short circuit' representative thinking that seeks to colonise

how humans perceive their world. As we noted earlier, theologians can and do draw analogies between semiotics and systematic theologies of various kinds; theology, in this sense, lends itself to semiotic thinking and appears, at first sight, to be in alliance with it. And yet, Ingold's challenge is to go back to what could be termed more fundamental aspects of how the sacred is lived out as a meandering path of reception and response to the given, rather than through pre-formulated ideas which could control the life of the spirit. As noted earlier, Ingold's understanding of meshwork does not include the idea of the sacred. Yet, when the sacred is interpreted along the lines of grounded practices of becoming, it allows for freedom of spiritual movement more characteristic of *sophia* that seems to be lacking when compared with what could be termed the *logos*, a mediated rationalist approach to living in community. Sophia puts more emphasis on learning emerging through direct practice, rather than being mediated through rational frameworks.

Entering a meshwork, therefore, offers a more radical basis for consideration of human-ecological and multispecies relationships for it allows for direct perception and encounter with a world of animate and inanimate things. Deane-Drummond has argued that, when considering the ground of various dispositions, including compassion, wisdom and justice, a multispecies approach offers a different way of understanding the ground of human morality (Deane-Drummond 2019). But enacting that responsibility for the earth practically requires much closer attention to acknowledging the entanglement of beings in intersecting lifeways and acknowledging the sacredness of that shared creaturely life (Wirzba 2021). As Ingold says in *The Life of Lines*, human becoming, as entangled and in parallel with the becoming of other beings, is a verb, *to human* (Ingold 2015: Part III).

Theologians and biblical scholars will find Ingold's critique of modern versions of the human – as autonomous subjects primarily defined by their cognitive capacities – of considerable help in recovering Hebraic characterisations of persons that are complex and dynamic composites of flesh, thought, desire, and will. Jewish and Christian scriptures refer frequently to the *heart* as the central, visceral animating organ. The Psalmist, for instance, calls upon God for a 'clean heart' (Psalm 51) because he believes that people are at their best when they recognise and honour their embodied dependence upon God for life's birth and sustenance. It is not enough to have various 'thoughts' or 'ideas' about God. What matters most to the writers of scripture is that people have a fully embodied relationship with God that also transforms how people perceive, feel, and engage with fellow (plant and animal) creatures in a shared life (Wirzba 2022). This is why expressions of faith, whether in ancient Israel or early Christianity, invariably took economic forms that had direct implications for agricultural practice, the feeding of the hungry, and justice for the poor. Moreover, the individualising tendencies of modern thought need to be counterbalanced with the strongly *communal* character of life as reflected in scripture. The aims of a faithful life are thus woven deeply within a broad community of life that includes the land,

plants, and non-human animals. Biblical scholars like Ellen Davis (2009) and theologians like Wirzba (2003; 2021) are recovering the idea that, from a Jewish and Christian point of view, God's covenant is never simply with (a small segment of) humans, but with the entirety of the earth and its creatures, and that the scope of God's salvific aims is fully cosmic. Ingold's characterisation of human life moving within a meshwork world opens multiple avenues for a theological reassessment and exploration of the ways God's healing and redemption are worked out in the whole world.

It is notable that Ingold does not refer to God or the sacred, nor does he invoke the languages of salvation and redemption, in his descriptions of a meshwork world. This absence is significant because it bears directly on people's ability to speak of a normative dimension to human entanglements with others. Put in the form of a question, what is to prevent people from cannibalising or ruthlessly exploiting their need for and dependence on others? What talk of the sacred character of life does is instil in people the recognition and the feeling that life is worthy of their cherishing and protection. Here, it is important to recall that the Jewish prophetic impulse that came to the defence and aid of the poor and vulnerable, but also the land and its creatures, was made possible by the prior acknowledgement that each person and creature is created and beloved by a God who perceives them to be good and beautiful. Both monotheistic and Indigenous traditions speak of the sacred, though clearly in diverse and unique ways. What is important to register is the logic of a normative world that is founded upon the commitment that this life and this world are sacred gifts to be cherished and protected (Wirzba 2021). Our aim is not to ask that Ingold become a theologian. It is, instead, to call for further exploration of how a logic of the sacred functions in communities in ways that further our understanding of normativity more generally.

In this context, it is also helpful to bear in mind that Ingold's description of animism, a description he developed through fieldwork with the Skolt Sámi, Indigenous Peoples living in Northern Finland, through other ethnographies of Indigenous animist understandings of the world and his reading of phenomenologists like Maurice Merleau-Ponty, is highly generative for reading ancient scriptural texts that include landscapes, vegetation, and non-human animal species within a moral/spiritual community of life. Numerous scriptural examples can be given: the soil (Genesis 3) witnesses against human wickedness. A donkey (Numbers 22–24) witnesses the presence of God and acts as an agent of divine purposes. Mountains break forth into singing and trees clap their hands (Isaiah 55). These examples show that agency is not reduced to solitary, self-standing beings, let alone only to human beings. Instead, creatures of diverse kinds participate in life's unfolding and developing ways and are participants in God's working with the world. Indeed, Ingold objects to any use of the term agency, insofar as it implies action follows agency rather like cause and effect (Ingold 2011: 34). As Ingold says, agency is not a 'sprinkling' of some power or 'a magical

mind dust' (Ingold 2011: 34) added to beings that are otherwise inanimate. Instead, diverse kinds of beings are alive because they are 'swept up in the circulation of surrounding media that alternately portend their dissolution …or ensure their regeneration. Spirit is the regenerative power of these circulatory flows…' (Ingold 2011: 29). Animacy, in other words, is not the attribution of spirit to non-human beings. It is the recognition that creatures, altogether, are continuously moving within the flow of a power that is not contained within any single creature. To use the language of scripture, the power of God the creator and sustainer of life moves like the wind (in Hebrew the term for spirit – *ruah* – is also the term for breath) that animates creatures from without and from within as the breath within each breathing movement.

Becoming wayfarers

The concept of wayfaring develops from Ingold's conviction that life is a continuous movement of the whole person through the lifeworld (Ingold 2011: 159). The journey is what happens in a meshwork matrix, each thread intersecting and overlapping the other in a gradually emergent path of movement. The idea of the extended mind has attracted some attention among theologians (Deane-Drummond 2019: 216–219). Certainly, the work of Fuchs on the ecology of the brain is influential in this context (2018). Ingold, however, goes even further than this and argues for extending 'the entangled currents of thought that we might describe as 'mind' to materials and bodies, not just brains (2011:20; 2012). Does the idea of the whole body influencing the world beyond the body counter his Gibsonian understanding of affordances, or is it intended to be complementary to it? Certainly, it is a different way of perceiving lifeways that is more holistic and away from too much focus on reason and rationality.

The idea of wayfaring, as Ingold also acknowledged (2007, 2013b), goes back to medieval practices of liturgical reading. Thomas Aquinas refers to wayfaring frequently as the way, in their time on earth, human beings journey towards God, particularly in the way virtues are practised in daily life. In his discussion of hope, for example, even Christ was still 'a wayfarer as regards the possibility of nature' (Aquinas 2012: §2a2ae 18.2). When Aquinas spoke about the importance of reason as the way to God, what he meant was an inclusive understanding of the whole person, including the intellect, in such a way that, as Jean Porter points out, in the medieval mind *nature* is also reason (2005). Further, even though Aquinas did have an unfortunate way of presenting the soul as separable from the body, at least the body accompanies the soul in glory. The main point, however, in this context is that the spiritual journey to God is also a form of wayfaring that continues even after death in purgatory. In certain respects, therefore, Ingold's thinking is more akin to pre-modern theological reflection on the spiritual life as a wayfaring grounded in this world that avoids, at least to some degree, the dualistic temptations characteristic of post-Enlightenment theologising.

Wayfaring is also an appropriate way of envisaging the spiritual life as practised. As described by St. Ignatius, and then practised for centuries thereafter (especially by those influenced by the Jesuits[5]), 'spiritual direction' is not a predetermined activity, nor are 'spiritual directors' orchestrating or somehow trying to control the lives of the people they engage. More accurately, what a spiritual director needs to do, is to get themselves out of the way so that people can more openly engage in the meandering journey with God that an individual is making. Their primary task is to help individuals attune themselves to the presence of the sacred that is both within and without, and thus come to an understanding of the presence of God in all things. That journey is described both in terms of memory, their 'story with God' so far, and in that re-telling of where that journey might go next, but it is bound up and integrated with the stories of everyday life, including its struggles, suffering and joys. In this sense it is, as Ingold notes, for the life of the soul, both active and passive, actively exploring, but passively receiving what is given. Working out the relation between 'doing and undergoing' (Ingold 2022: 357) is that between what Ingold calls the soul-life and the life of the soul. While he is correct that habits of thought in Indo-European culture put agency first, this has not always been the experience of women, whose sense of agency has been suppressed as feminist theologians have frequently pointed out (Parsons 2006: 114–132). The association of the Logos, understood as the masculine aspect of God, with agency, novelty, order, transformation and demand and the Kingdom or Spirit, understood as the feminine aspect of God with receptivity, empathy, suffering and preservation is rejected by Elizabeth Johnson and Janet Martin Soskice as sentimentalising notions of the feminine (Soskice 2006: 135–50), but it demonstrates how women have been perceived as lacking in agency. At the same time, the spiritual journey is as much about listening and receiving as actively pursuing, and it is one of the hardest lessons for individuals to learn, namely, the need to be still. A spiritual guide or better, accompanier, brings the ontogenesis, to use Ingold's preferred terminology, into tune with a heightened sense of responsibility. The spiritual life as understood in Ignatian spirituality is therefore far more like a path of human becoming emergent in the current of life than the isolated being of naturalism that Ingold has reason to critique (Ingold 2022: 357). It also resonates with ancient Orthodox traditions that include and incorporate death into the story of becoming (Behr 2013).

Ingold's description of Peter Loovers' fieldwork among Teetl'it Gwich'in people living in the Northwestern Territories in northern Canada is particularly fascinating as they were also exposed to the Christian Bible in their own language through the work of Anglican missionary Robert McDonald (Ingold 2013a). On receiving the Bible, some Gwich'in experienced dreams and visions of Heaven, and communicating with God, which included prophetic instructions to their elders. While introducing the Bible introduced a measure of colonial control over the indigenous communities, its

interpretation was guided by their indigeneity. Indigenous readings allow for a dream world that was also characteristic of medieval spirituality in contrast to the Reformation which marked a transition to reading what was in the text. That practice of reading between the lines, as it were, is also allowed for in spiritual direction through what is known as spiritual reading or *Lectio Divina,* first established in the sixth century (Casey 1997). The reader allows specific words or phrases to jump out and stay with that word or text and mull it over in their imagination as to its significance for their everyday life and practice. While the experience of the sacred for those attuned to Western cultural habits of thought will inevitably be distinct from those arising from indigenous spirituality, the ancient pattern of receptivity towards wayfaring has persisted, at least in some Christian traditions. It should be noted that spiritual writing is often relegated to the margins within theology, and *Lectio Divina* is not universally accepted as a responsible way of reading the Bible, since it relies on the direct experience of the individual with the text, rather than, generally speaking, being dependent on current Biblical scholarship. Its practice, however, allows for a sense of deep encounter with the divine in a way that does not normally take place when the text is analysed using tools of historical criticism.

Concluding correspondence: discovering wisdom

As Ingold admits, preferring to develop anthropological ideas seeded in the thought of the vitalism of Henri Bergson and the process philosophy of A.N. Whitehead rather than the modern synthesis of neo-Darwinism, swam against the tide within anthropology and the social sciences more generally (Ingold 2008). The struggle for existence in Darwin's theory, where organisms are packed together, competing for space, like a wedge, is in sharp contrast to the Bergsonian image of an eddy, wherein life is movement along a line, in continuous creation. The kind of science he rediscovered through fieldwork and his encounter with the arts and humanities was more akin to the observational sciences of natural history characteristic of his childhood (Ingold 2018b). The mycelium of fungi conjured up a different way of considering what it means to be alive, opening up the possibility of wayfaring along lines akin to Bergson's philosophy rather than autonomous entities. The dislodging of Neo-Darwinian science from its self-appointed citadel is important, not least as a way of challenging its claim for all sufficiency of knowledge, but also because there are alternative ways of conducting science that can emerge as a result, which then opens up correspondence with theologians and other humanities scholars. His preference for anthropology to become an *art of inquiry* informed by a *method of hope* (Ingold 2018b: 218) is one that resonates with theological exploration. Indeed, paying attention is Aquinas' way of identifying the virtue of how scholarship should be conducted (Aquinas, 2012b; Qu. 166, 167). *Imagining for Real* challenges the opposition between imagination and reality, but instead invites 'entering from the

inside into the generative currents of the world itself, by balancing one's very being on the cusp of its emergence' (Ingold 2022: 4). The 'stretch' of human life is, in Ingold, found in movement.

As we have attempted to show throughout this chapter, while there are lines of convergence and divergence with Ingold's arguments, his work provides a rich resource for further engagement and interpretation. We have argued for the particular significance of his concept of meshwork and wayfaring as an alternative way of understanding human beings and becoming in the world. His particular focus on materiality and ecologies within which human life is enfolded can serve to reinforce arguments for ecological theology. While we, as theologians, recognise the importance of the sacred in a way that is lacking in Ingold's account, his rejection of standard Western approaches to what it means to be human provides a lens through which ancient texts, including biblical, spiritual and medieval, can be approached in a new way. Theology's long-standing unease with aspects of standard Darwinian theory finds common ground with Ingold's bold resistance to some of its presumptions.

Notes

1 As late as 2009, Pope Benedict XVI, for example, spoke of the risks of pantheism and relativism in engaging with ecological issues. While rejecting domineering attitudes to the natural world Benedict speaks of the risks of attitudes which lead to 'a new paganism or neo-pantheism' on the basis that 'human salvation cannot come from nature alone, understood in a purely naturalistic sense' (Pope Benedict XVI 2009 §48). When God and nature are the same, God's transcendence as its creator is destroyed, and with that also the ability to speak of the world as a sacred gift worthy of humanity's cherishing and protection.

2 Given the subject matter of this volume, it is surprising, perhaps, that the work of Tim Ingold is not cited, though Bruno Latour does receive some attention.

3 Other aspects of Ingold's work, particularly his critical discussion of Neo-Darwinism, are discussed at length in the introduction and chapters 1 and 2 this volume.

4 In a shared project led by Celia Deane-Drummond and Agustín Fuentes on the evolution of wisdom traces in the material archaeological record were interpreted through the logic of semiotics (Kissel & Fuentes 2017; Kissel 2020), though this approach still prompted different approaches to evolutionary anthropology, but inevitably missed the textured lived experience of wisdom that Ingold calls forth in his work.

5 Deane-Drummond is drawing on her experience as spiritual director in the Ignatian tradition for this section.

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6   Ingold in the minor key

Marc Higgin and Germain Meulemans

Introduction

> Where knowledge protects, wisdom exposes; where knowledge makes us
> safe, wisdom makes us vulnerable.
> Knowledge empowers, wisdom does not. But what wisdom loses in power
> it gains in existential strength.
> For while knowledge may hold the world to account, it is wisdom that
> brings it to life.
> Knowledge is in the major key, wisdom in the minor.
>
> <div align="right">(Ingold 2018a: n.p.)</div>

As two former PhD students of Tim Ingold, we were invited to reflect on the
difficult question of what we have inherited from his thinking. This chapter is
written as a personal reflection on how Ingold's work has shaped our research
with animals, soil, clay and waste. Paying close attention to the frictions that
have been so productive for us draws out a tension within Ingold's work;
between what seems to be the development of an ontology – of process, of
relation, of life – that by default plays in the major key, leaving little place for

other points of view, and a practical epistemology that resituates ontology in practices, making way for ontogenesis in the plural.

We[1] follow two ideas that have been central to Ingold's work – *skill* and *materials* – and describe how they have been important in our own work. As we will argue, these notions are less ideas around which anthropological theory might cohere than foci for attention by which anthropological practice – in the 'field', in the seminar room, in the classroom – might orientate itself. They constitute a basic grammar – along with attention, animacy, organism-environment, meshwork and others explored in this book – for what might be called practical *animism* at work in Ingold's writing. Alternating experiences from our respective research and shared theoretical reflection, our aim in this chapter is to develop a case for the importance of this Ingoldian inheritance within the discipline of anthropology and the social sciences more broadly.

First, Marc Higgin explains how he used this Ingoldian grammar in his work to understand the relations of work between people and animals. Second, Germain Meulemans then explains how he has worked with them in studying the soil of engineers, soil scientists, and gardeners' relation to soils. Third, Marc Higgin takes us to the landfill and the strange afterlives of material culture. By following these threads, we show how, at the heart of Ingold's work, is the development of an anthropological practice – a form of epistemological posture – that profoundly decentres 'traditional' ways of defining knowledge, placing the body and its capacity to perceive, feel and act at the centre of how we know, and how we get to know the world. These capacities are not given but learned in relation to the world – a world of plants, animals, rivers, clouds and wind, and – of course, other people (see Ingold 2000: 42). This follows Ingold's distinction between knowledge that 'treats the world as its object', with a posture – a wisdom he calls it – that would take 'the world as its milieu' (Ingold 2018).

In the enmeshed world that Ingold presents us with, knowledge is not information (abstract, abstracted) but apprenticeship (situated), and things are not a testimony to the materiality of the world but made and grown from lively and agentive material.

Some of Ingold's readers (e.g. Descola 2016) have concluded that his ideas together form a new ontology, a definition of what the world is that troubles the dominant Western ontology, a kind of war machine not unlike the permanent decolonisation of thought advocated by Viveiros de Castro (2014) and other proponents of the Ontological Turn in anthropology. Ingold has indeed often based his thinking on what he calls 'animic ontology' (2011) – an ontology in which 'beings do not propel themselves across a ready-made world but rather issue forth through a world-in-formation, along the lines of their relationships' (2011: 62). However, unlike some of our colleagues (see Gatt, this volume), we suggest that Ingold's work is less about building a new ontology – a proposal about what the world is – and more about encouraging an empirical, rigorously situated curiosity about what the conditions of life in the world might be. Unlike the major key of ontology, with its emphasis

on *being*, Ingold's minor key focuses on ontogenesis, on following the continuous *generation* of being. The central question is how the world *comes to be* rather than what it *is*. In the following, we argue that contrary to the universalizing tendency of the major key, Ingold's processual perspective also allows us to better account for how different paths of becoming emerge – for ontogenesis in the plural.

Knowledge as skill

Marc Higgin

I trained as a behavioural ecologist and, after university, started working as a research assistant on a number of field projects for the Institute of Zoology. Quite soon I realized I was not that interested in the models of Chacma baboon or black-backed jackal behaviour I was helping to build. What fascinated me was the actual (field)work of collecting the data. The behavioural frequencies and spatial coordinates I was collecting reflected only very indirectly the fraught everyday business of getting close enough to the animals to be able to see what they were doing. This became especially clear with the baboons. Every day was an apprenticeship: this meant getting to know, often by terrifying means, each baboon's particular sense of the relationship that was developing. It was not just a matter of learning to 'read' the baboons (both as a group and as individuals) but learning to read how they read me. It was the negotiated nature of this fieldwork of habituating wild animals to my (human) presence that fascinated me. Tidied up within the black box of 'habituation', the evidently social dimension of these relations was rendered secondary to emerging models and theories of the behavioural ecology of Papio ursinus or Canis mesomelas.

I found myself at the limits of the 'Naturalist' cosmology I had been schooled into, with its strict delineation of the human and nonhuman worlds (Descola 2013). On the one side, there was social life understandable with reference to the interiority of human thought, language and action, and, on the other, there was the unfolding of the natural world, understandable in purely objective terms. I did not have the vocabulary necessary to take these emerging relations between these animals and myself seriously. Returning home, a friend gave me some photocopied chapters – I probably shouldn't be admitting to this, especially in a Routledge book – from Tim Ingold's Perception of the Environment (2000) and another path opened up.

The book's master key was to be found in the opening pages of the introduction: skill. A notion that, for me, opened the door to another way of thinking and inquiring about the world. Understood as the 'capabilities of action and perception of the whole organic being situated in a richly structured environment' (Ingold 2000: 5) in which each being (human or otherwise) is understood as a 'singular locus of creative growth within a continually unfolding field of relationships' (Ingold 2000: 4), this unassuming focus on skill underwrites a quiet revolution in how we go about thinking about social life, about knowledge, about life tout court.

Enrolled on a Master in Society and Space in the geography department in Bristol, I hungrily read the work in anthropology, geography, sociology and philosophy that was busy transforming social theory and methodologies to redefine human subjectivity and sociality to take into account the body, the senses, emotion and affect, imagination and memory as well as take seriously the presence and place of the 'nonhuman' within human society(ies). For my dissertation, I worked on the subject of guide dogs for the visually impaired (see Higgin 2012). The participant observation, that formed the basis of the study, was a form of apprenticeship not unlike the ethology I had been previously trained in. It was a skill to be learned: '[t]o observe means to watch what is going on around and about, and of course to listen and feel as well. To participate means to do so from within the current of activity in which you carry on life alongside and together with the persons and things that capture your attention' (Ingold 2014:387). I worked with six guide dog partnerships, spending time with them in their homes and 'at work' on the streets; some were novices in the process of training, and others were established partnerships. My interest was in describing how a shared understanding and practice emerged through the work of learning together between dog and human beings, with such different ways of perceiving and acting in the world. Each partnership emerged as a relational achievement: in which hesitation gave way to fluency, fear to trust, that was learned not through disinterested reflection but by each human (and guide dog) putting their body on the line and getting to know another being, another body, within the practical everyday context of 'doing things together' (Laurier et al. 2006). Each one inscribes their own preferences in the other, both co-constitute the motifs of perception and action that grow within the daily performances of making mistakes, holding back and walking in rhythm. As the possibilities of the motifs they embody together widen, each learns to trust, listen and respect the other. In human terms, these partnerships have life-changing implications (Michalko 1999); they open up the possibility of radically new ways of being in the world and experiencing space, the possibility of developing an independence rooted in intimate co-relation and co-dependence.

Let us underline three important ramifications of how we inherit this notion of skill in Ingold's work. Firstly, the focus on skill foregrounds an epistemology in which people's knowledge grows from practical and observational engagement with the surrounding world. As Ingold argues again and again throughout his writings, knowledge is not information; it is not something transmitted from one mind to another, from one generation to another (2000, 2010, 2018b); nor is knowledge restricted to what can be said or written down, to what can be counted and modelled. Knowledge is always a know*ing*, always a form of action – a *practice* – situated in specific relations: a knowing *with*. As the very existence of guide dog partnerships demonstrates, forms of knowing are not based on a shared language nor symmetrical capabilities of perception and action. All forms of knowing are forms of *doing with* by which forms of social life are negotiated: working relationships with dogs but also (to cite a few examples from our research) urban gardens (Meulemans 2020), building foundations (Meulemans 2022),

kitchen waste (Granjou, Higgin, Mounet 2020; Higgin 2016a), the practices of artists (Higgin 2017), the engineered foundations of contemporary cities (Meulemans 2022), kilns and ceramic material culture (Higgin 2016b). As we shall see in the following section on the notion of materials, at the heart of this epistemology is that every form of knowing, every knowledge-practice, has its own situated form of *correspondence* by which the relations that make a life, that make a world, are forged.

Secondly, it follows that research itself is a form of learning situated within, and responsive/responsible to, the relations in which it takes form: always a learning with. Ingold's focus on skill develops contemporary currents in the social sciences and humanities in its own way, insisting on the methodological, ethical and political imperative of re-situating science; in bodies and their forms of sensibilities (Jackson 1996) and forms of apprenticeship (Lave and Wenger 1991), in bodies placed within historical relations of power (Rosaldo 1989, Strathern 1988, 1991, Haraway 1988). We understand our work as anthropologists as being responsible to our situated encounters in the field, not just in terms of faithful ethnographic description but as developing situated forms of what Marcus calls 'complicity', which, 'arises from [a] mutual curiosity and anxiety about their relationship to a 'third' (Marcus 1997:100). This third being a mutual matter of concern; whether that is the question of what is a soil in an urban context? Or of what makes (good) art? or of what futures the idea of waste designate?

Thirdly, this attention to knowledge as a situated process opens onto a *relational* ontology in which being – human, animal, plant, material – does not precede its relations but rather becomes in these constitutive entanglements with others. Or, to put it another way, ontology can never be disentangled from epistemology. Things are never known *in themselves* but in and through relation, a relation that changes both knower and known. While critics of Ingold's work, especially within the francophone context, have tended to take offence at the universalising pretensions of his work (post-TPE), we want to underline how this relational mode undermines any pretension to ontology in the major key: if knowledge is always a matter of knowing with, these knowing-withs are always tied to the matter at hand and have no universal pretensions. This is what we've called an ontology in a minor key. We'll return to this in a moment.

Things against objects

Germain Meulemans

I first encountered Ingold's work reading The Perception of the Environment while doing my anthropology masters at Liège University. I was trying to navigate the conflicting perspectives of farmers and ecologists over water vole proliferations in the French Jura Mountain, and the book offered a great perspective with which to understand farmers' grounded perception in and of the landscape. But more surprisingly perhaps it also helped me understand the

scientific practice of agronomists and ecologists as a situated activity. Even though Ingold never tried or claimed to connect to the wide field of STS scholarship, his pages on skill, movement and landscape seemed to get to very similar points to studies of science as a situated activity by ethnomethologists (Goodwin 1995) or anthropologists of science (Knorr Cetina 1995), which described scientific knowledge as a process rather than a product. Unsure of how I was going to navigate these perspectives, I took this double interest in environmental anthropology and STS forward in my PhD on soil-making projects in urban and industrial France. In the social sciences, soil is often understood as a stable object. It is taken to be a purely material background, a stable basis for human history, which alone is understood as dynamic and creative (Salazar et al. 2020). Between October 2013 and February 2015, I conducted ethnographic fieldwork among guerilla gardeners, soil scientists, and ecological engineers who were trying to build soil rather than simply buy it on the market of construction materials. Much of the fieldwork involved following soil ecologists as they sought to build soil with earthworms, a process they described as a collaboration with soil life. The way these ecologists attended soil contradicted fixist/passive conceptions of soil. In their words and the world it did not appear as an inert commodity but as a processual material, always caught in a process of growth and construction (see Meulemans 2019).

I remember how, early during my fieldwork, one soil scientist handed me a lump of soil, bringing my eyes to the minerals, water, worms digging their way and digesting soil particles, rich organic matter degraded by microorganisms, water soaking from it, and plant roots exploring every cavity of stones and pebbles. He went on to explain how the soil was not just one thing, one material, but all these things together and their complex interactions, constantly transforming each other into something else. This was the perfect example of how life unfolds in intra-active relatings (Barad 2003), as these growth processes were not only things that happen to the soil. Together, they were the soil – or rather, they were soiling, undergoing a series of transformations in which food is turned into waste, particles into aggregates, liquids into solids, and vice versa, participating in the soil's transformative and generative fluxes.

However, unlike the fungi (Tsing 2015) or microbial communities (Brives, Rest & Sariolla, 2021) that multispecies ethnographers have famously scrutinised in recent years, soils are not just a multispecies compound, as the stories of becoming with at play in pedogenesis also involve stones, silts, and plenty of other rocky materials. Are we to say, then, that stones possess agency? Here again, Ingold's work comes in handy to avoid a perspective in which 'agency' may pull us back into a vision in which things are either 'doing something' or 'having something done to them'. This would reduce worms and ecologists' action to an effect on passive matter, a hylomorphic model of making, according to which things take shape through the conjunction of a substance and the implementation of a design by the maker. To counter this, Ingold proposes a processual anthropology of materials

(2007, 2013) in which things and beings are verbs, activities, and carrying on. They are always and actively 'in the doing'. Using Ingold's anthropology to question the distinction between making and growing soils, I described the ecologists' practice of soil-making as a concrescence, experimentation that brings humans, worms, and soil materials together in new ways (Meulemans 2017, 2019). Thinking through soils, in the middle voice of their making processes, brings us beyond dualisms between the animate and the inanimate, the biotic and abiotic.

Soil, here, is neither a fertile substrate for plant growth nor a fixed compartment of the environment, but a site where everything is a more or less ephemeral concrescence of materials and organisms that mix and meld, a processual being that draws ethnographic attention to the work and activities that give rise to it (including agricultural tasks, the digging of worms, leaf decomposition by microorganisms, wind erosion…). Furthermore, as Ingold explains, 'In following these materials we take them as guides along a way of knowing' (2011:313). When they engage in wormy collaborations to make soil, ecologists have to develop skills to notice worms' constructive movements. They do this by constantly observing the whole process of soil growth, by touching the soil and looking for worms. As Maria Puig de la Bellacasa (2017) demonstrates, caring and noticing bring each other about. For worms to thrive, the soil needs to be 'fed' with fresh organic material, it needs to be watered properly, and its texture needs to remain aerated. In doing this, soil scientists engage in pedogenesis' entanglements and processes of growth, and because of this, they are also made in pedogenesis, as they grow skills and knowledge, redefining disciplinary boundaries and opening up new spaces for experimentation. In soil-making, worms, soil and scientists are made alongside each other.

Again, we would like to underline three aspects of Ingold's attention to what he calls the 'world of materials' (Ingold 2007, 2014). Firstly, this attention takes the study of material culture away from an exclusive focus on already-made objects and their 'social life' – their use in the everyday lives of particular communities, the meanings and values ascribed to them – to things; that is, *a more or less durable coming together of materials and forces* (Ingold 2007, 2011). Paying attention to the making (and unmaking) of the things that populate and mediate everyday lives widens the horizon of anthropological interest beyond an exclusive interest in material form and its function(s) in social life. As the story of soils and their genesis teaches us, not only do worms and bacteria have an active role to play in shaping this humus in which human lives are constitutionally entwined but so do all other materials: water, air, minerals, chemicals. Whether in city streets or fields given over to agriculture, human lives are negotiated – directly and indirectly – with what Ingold calls the 'world of materials', or 'weather-world', or the 'meshwork'.

Ingold invites us to see a world of processes rather than fixed objects. This isn't to say that there is no solidity or fixity in the world, but simply a call

not to take objects and solidity for granted (as most of us who were raised in the West are used to). Materials are not the stable substrates for human (material) cultures seemingly promised by industrial production and social theory but a living 'meshwork' of 'substances which flow, mix, and mutate… sometimes congealing into more or less ephemeral forms that can nevertheless dissolve or re-form without breach of continuity' (Ingold 2011: 86). The point is to re-situate the innumerable 'congealed' forms of material culture within their broader ecological context, in which human artefacts, as well as humans themselves, are but (more or less) temporary forms of – what has been called by some – nature.

Secondly, and in conjunction with our earlier underlining of Ingold's situated epistemology, Ingold encourages a curiosity for materials – for what they can *do* – rather than putting forward a theory of materiality. This distinction feeds the just-about polite 'debate' between Ingold and Danny Miller (with supporting cast) in *Archaeological Dialogues* (2007). Miller's approach draws on the material dialectic of Marx and Bourdieu, in which material culture objectifies social relations and, in turn, becomes an 'exterior environment that habituates and prompts us' (Miller 2005:5), which educates us into place, identity and meaning in society. The aim of this turn to materiality is to give 'agency' back to the material world but this turn is restricted to those qualities of materials that help define the specific social form and function of an object consumed.

Ingold decries recent theorisation of *materiality* as yet another way to ignore materials, to relegate them in a binary way to an undifferentiated 'natural' background for 'social' life: '[w]hat academic perversion leads us to speak not of materials and their properties but of the materiality of objects?' (2011:20). His counterargument is not to develop another theorisation of materiality but to argue for an empirical interest in materials, a curiosity for how the form and function of our *stuff* is negotiated with materials, for how these materials – congealed in their present forms – continue to shape our uses, our meanings, our giving of values, for how these things eventually break down, become food for other beings. What the dichotomy between subjective appearance (that would be the abode of 'human' meaning and value) and objective reality (that would be the domain of the 'natural' sciences) misses is the centrality of practice to all knowledge traditions: the making sensible of the world through the practical curiosity of people, following an 'instinctive faith' that there is more to nature than first meets the eye (Stengers 2011, 105). Materials – as our guides – show us how we – our ideas, our actions and their consequences – are constitutionally tied to this world and its becoming.

Thirdly, we would like to emphasise here how Ingold can be situated in relation to the ontological turn that has animated many debates in anthropology over the last two decades. Ingold draws much of his insights from his fieldwork in northern Finland with the Skolt Laps (1977). Studying the conical lodge – the Laps' traditional tent dwelling – allows him to establish the notion

of earth-sky, the hunter's movements that of wayfaring, and the meshwork or writings on imagination are part of an observation of the world imprinted with the animism of the Northern peoples. As a result, some have understood Ingold as proposing an ontology of his own. The view of Ingold as an ontologist can be traced in works by both his supporters (see Gatt, this volume) and his detractors. For example, in a 2016 debate between Ingold and French anthropologist Philippe Descola in the journal *Anthropological Forum*, Descola insists that Ingold's ontology is imbued with animism, which makes him an apostle of 'biolatry' (Descola 2016). In a similar vein, Perig Pitrou (2015) has painted Ingold as an unrepentant vitalist. In their view Ingold's mistake is to say normatively what life *is* and to reify it as a universal principle, a 'uniform conception of a vital élan sweeping up all beings as it passes through' (Pitrou 2015:13). This vitalism, in seeking to overcome dichotomies, would make cultural differences between different conceptions of life disappear. In Descola's writing, the notion of ontology refers to a scheme of organisation of thought, a structure underlying social life describing the great principles of the functioning of the world and the relations between beings. Now, in Descola's comparative project, the point is to identify different ontologies, or different ethnotheories of life and the world, in order to understand them comparatively. This rather structuralist reading has led to an understanding of Ingold's thought as being situated in a single form of ontology (animist), which is therefore itself ethnocentric (although not centred in relation to the West in this case, but rather to the peoples of the far north). To us, critiques based on Ingold's *vitalism* misunderstand the 'key' in which Ingold writes. He does not propose to us another theory of what materials or people *are,* but a curiosity for what materials and people *can do*; not another Ontology (as an overarching framework for what stands as 'the real'), but ways of inquiring about various things and processes that allow, each time, to raise ontological questions. Or, to put it another way, as an anthropologist, our dialogue with soil scientists is not about unearthing an ontology that would frame and explain their efforts but following their experimentations in what soil might be: pedogenesis as ontogenesis. Listening to Ingold's work in this minor key, his writing doesn't elaborate on an animistic ontology but a practical animism; not a dwelling ontology, but a dwelling perspective.

The afterlives of materials

Marc Higgin

Working with artists in their studios, I became as interested in the things that were left in bins as in those things packed carefully and loaded on vans, destined for galleries and collectors. Following the waste from my house to its disposal by waste management service subcontracted by Aberdeen City Council, I was able to conduct research at Stoneyhill landfill in Aberdeenshire. At the site of an old granite quarry, the waste management company SITA

welcomes municipal, industrial and medical waste from all over North-East Scotland. As outlined above, the turn to materiality in anthropology does little to encourage curiosity to follow things once they have fallen out of human use and value. But standing at the edge of what was once a large hole in the ground and now was a 'hill', rising forty or fifty metres over the surrounding fields, it was evident to me that the (after)lives of waste are anything but dead. The 'fully engineered' construction of this landfill, with its layers of clay, high-density polyethene, 'Geotech' protective textile and aggregate enclosing compacted waste in cells (more or less) impermeable to the circulation of water and air, is the current state of the art in containing the strange life bubbling within, preventing its circulation, and contamination, of the surrounding ecosystems. To call these sealed units cells is apt: this waste lives in very similar ways to organic cells. This stuff is busy disintegrating, decomposing, and dissolving through the work of machines, rain, fungi, bacteria, seagulls, rats, and insects. As the waste is compacted and sealed, anaerobic bacteria take the lead. I imagine a warm jungle of organic and inorganic compounds, continually forming, deforming, and reforming as they cross from life to non-life and back again: a metabolic bacchanalia. SITA digs down wells to collect the large amounts of methane each cell produces.

This landfill could be seen as a new, and experimental, form of soil that the FAO calls 'garbic technosol', in which the remains of material culture fundamentally transform the geology and ecology of a soil, with far-reaching consequences for the above-ground and down river ecologies this soil supports. Modern engineered landfills act as a temporary – if we compare the effective life of the plastic and clay membrane to the metabolic 'animacy' of the compounds within – quarantine for these strange newcomers to the metabolic life of this planet. As Myra Hird & Nigel Clark (2014) argue, we have next to no knowledge of the (after)lives of these remains of our material culture and assemblages they form, their impacts on ecosystems and bodies (human or otherwise) (see Higgin 2016a).

Decaying plastic packaging and the rotting remains of Friday night's fish and chips bring us to what we might call a limit to Ingold's writings on the 'world of materials' in which we live. As Miller argues in their debate in *Archaeological Dialogues*, Ingold tends to focus on stone or willow branches or leather rather than plastic packaging or mobile phones. He accuses him of a 'primitivist appeal' to materials and their qualities as the ground for authentic human experience. In theory, at least, Ingold's 'world of materials' should feature plastic bags and nylon hats as much weathered stones or worked wood. But his interest in skilful practice, particularly in practices of making, as a way of rethinking human creativity in relational (or ecological) terms means that if plastics or the work of the chemists, engineers and designers moulding them do appear in his books, it is as examples of linear, hylomorphic models of creativity and innovation that his epistemology is set against. But as we've argued, there is nothing in his *ontology in the minor key* that distinguishes between clay and plastic. Both materials are caught

up in the practical curiosity of people, albeit mediated by different technologies and sometimes different working onto-epistemologies. As Bruno Latour argues, the sciences are defined by their tradition of experimentation, understood as the work of a body 'learning to be affected by hitherto unregistrable differences through the mediation of an artificially created set-up' (Latour 2004, 208). Rather than adjudicate between Nature, as the really real, and Culture, as the apparently real, these empirical sciences serve to multiply the number of things abroad in the world.

What is interesting is that much of the metabolic (after)lives of plastic packaging or broken mobile phones pass unnoticed in sensible experience. While the rotten egg smell makes the presence of hydrogen sulphide (a common and dangerous gas produced by landfills) tangible and tangibly harmful to experience, the presence of polycyclic aromatic hydrocarbons or any amongst the vast family of perfluoroalkyl and polyfluoroalkyl compounds in environing space pass mostly unnoticed by the senses, only slowly becoming visible by their effects on aquatic ecologies or through new technologies for testing water quality developed and deployed by scientists and environmental agencies. It is only through the mediation of these technologies that we are beginning to make sense of these metabolic lives of our material culture. The point is that our collective attention has been elsewhere, leaving these metabolic (after)lives of material culture to pass unnoticed. These (after)lives have been made an externality to how we – that is those forms of collective organisation that have driven what is beginning to be called the 'capitalocene' – collectively organise, care for, and give value to our shared socio-material environments. For us, Ingold's call to take materials seriously takes anthropology beyond his own interest in the changing surfaces of stones or the bind of the fibre rope, beyond his own interest in artisanal practices of making that foreground the hand and gesture. His work should be a clarion call for anthropologists to pay attention to the production of material culture(s) in all their diversity, complexity and banality, in which materials – natural or synthetic, organic or inorganic – themselves play a crucial role. Ingold's ontology in a minor key – with its repertoire of materials, skilful practice, attention, animacy, organism-environment, meshwork, and thing – provides a vital series of handholds with which inquire after these modes of making-world that do not reproduce what Alfred Whitehead (1920) called the 'bifurcation' of nature.

Conclusion

In his book, *Anthropology and/as Education* (2018b), Ingold draws on Deleuze and Guattari's (1987) distinction between sciences of the 'major' and sciences of the 'minor', and explains that 'while the major is confident, assertive and affirmative, the minor is anxious, unsettling and inquisitive' (37). Whereas science in the major mode 'plots the determined motions of particulate bodies in a space that can be divided, reckoned and apportioned'

(40), a minor science 'begins with fluidity and sees, in things that seem to us fixed in form and constitution, only the outlines or envelopes of perpetual movement. In so doing it posits variation, heterogeneity and becoming before constancy, homogeneity and being' (40). How ontologies are often addressed in anthropology – as a general blueprint that guides action and perception, something that can be ethnographically abstracted from actual actions and situations – belongs to the major key. Even when it aims to decolonise thought by pitching it against Western ontology, the reconstruction of ontologies frames them as relatively coherent bodies of ideas and ethnotheories about the nature of the body, sociability, or animals, and the relations between these beings. In contrast to this, what we gained from Ingold is a minor mode of thinking that unfolds from the inside, by joining with things' movement of growth. Of course, as we recognise in the introduction, it is not illegitimate to read Ingold as proposing an ontology. As Erin Manning insists, 'A minor key is always interlaced with major keys–the minor works the major from within' (2016, 1), including in the major sciences – the performance of which, as STS have shown, is enabled through the situated skilled practice of experimenters.

This leads us to suggest in conclusion that, if Ingold's work is a departure from the ontological turn of the last decade, his 'ontology in the minor key' may have more in common with ideas coming out of Science and Technology Studies. This connection is not obvious, as Ingold has done little to comment on or discuss with authors from STS. While he has sought to situate his work in relation to Bruno Latour's in some pieces (see for example Chapter 7 in Ingold, 2011), he has done so in order to make an argument about how best to describe the relational character of the world (is it a network or a meshwork) rather than to make a point about scientific practice. Ingold generally draws inspiration from such fields as art, craft, design, or architecture. He, sometimes, tends to pit these forms of engagement with the world against science and technology: rope-making vs chemical industry, craft vs science, etc.

Yet, over the past 30 years, STS has largely described how science and technology are also forms of practical engagement with the world. Even when they claim to detach themselves from the world in order to better observe or control it, scientists and engineers can only do so at the cost of increased attachment, of renewed links with the world (Candea & Alcayna-Stevens 2012). For Annemarie Mol and John Law, the question is not so much to describe the plurality of worlds (á la Descola), nor to think with other cosmologies, but to describe how 'Ontologies are brought into being, sustained, or allowed to wither away in common, day-to-day sociomaterial practices' (Mol 2002:6). Along this line, STS scholars often insist on the generative character of practices: the manipulation of bodies, the design of environments, the use of medical or engineering instruments and techniques do not derive from a (naturalistic) ontology but are practices of world-making that collide with each other, overlap, interfere, and thus form a multiplicity that

must be managed, coordinated, or kept apart. Here, we find the processual sensibility, in a minor mode, that Ingold adopts, which shifts the inquiry from ontology to ontogenesis. Although this bridge between Ingold's work and the vast field of STS is not explicitly called for by Ingold himself, we are sure that it is the bearer of a fruitful dialogue that we are undertaking in our work on waste and soil.

Note

1 The two of us, each in our way, have been profoundly shaped by our encounters with the writings of Tim Ingold, in particular, the texts collected under the banner of *The Perception of the Environment*, – at the beginnings of our journeys in the social sciences in the UK and Belgium respectively. We both moved to Aberdeen, separately, for our PhDs under Ingold's supervision, and were associated with the *Knowing from the Inside* project between 2013 and 2018. In the following years, our respective paths took us to France, where we continued to cultivate the ecological and speculative anthropology approach that Ingold bequeathed to us.

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Section III

Introduction

Experiment, experience, education

Anne Pirrie and John Loewenthal

There are two of us. That is unusual. Normally the writer of a section introduction works alone. How to begin? As we were not able to answer that question immediately, we began with an experimental breakfast, taken at the kitchen table of the first author. We ate cranberry cranachan, spiced with ginger and orange zest, accompanied by yoghurt and kefir – an admirable mix of (bacterial) cultures that would enable us to flourish from the inside out. Then there were warm, delightfully scented croissants, glorious crescents that demanded our full attention, harbouring their own impulses of growth and renewal, sprinkled with flaked almonds and other good things.[1] We drank freshly squeezed orange juice. We drank coffee, and then more coffee. It seemed fitting that our initial meeting reinforced the idea central to Ingold's work that 'aesthetic experience [is] integral to everyday life' (Winter, *infra*, p. 188). It also seemed right that our meeting took place in a kitchen, a natural site for gathering, 'a place of collaboration and commensality', somewhere to be captivated by the food [and] with the subject of study (Ingold, 2022a, p. 5). This set the tone for a 'participatory dialogue', a practice of observation premised on noting correspondences rather than providing authoritative descriptions (Ingold, 2011, p. 241).

Foregrounding lived experience and revelling in each other's company turned out to be a fruitful rather than a diversionary activity. It opened us to the world – and to each other. It reminded us – as have the three authors in the chapters that comprise this section, each in their distinctive fashion – that the world cannot 'be known only by way of its explanations, or by the different ways in which it may be represented' (Ingold, 2018, p. 30). We came to know, in an embodied way, what it is 'to mix and mingle, in one's thinking, with the textures of the world' (Ingold, 2021, pp. 14–15). There we were, committed to '*living together in difference*' (Ingold, 2022b, p. 5, emphasis in the original). Yet we were also aware that as co-writers of a section introduction, we were expected – if not to represent or explain, as such activities are problematic from an Ingoldian perspective – then to engage with the respective contributions that follow. How to begin? We looked at each other and realised that in some respects we had already begun.

'*We just have to live it*', thought Anne, channelling the spirit of James Herbert Thompson, the Gwich'in Elder whose engagement with the Canadian wilderness is explored in some detail by Peter Loovers in his contribution to this book. Through his account of 'the earth as ground for habitation … the intercourse of earth and sky, wind and weather; the fluidity and friction of materials; the experiences of light, sound and feeling' (Ingold, 2011, p. xii), Loovers explores what it means to 'live theory' as something that 'is generated and regenerated continually through embodied practice' (*infra*, p. 150). In his graphic account of 'spending Spring' hunting muskrat, beaver and waterfowl in the remote Northwest Territories of Canada, he illustrates what Ingold refers to as the 'dwelling perspective', situating 'the practitioner [as teacher and learner] … in the context of an active engagement with … his or her surroundings' (Ingold, 2000, p. 5). This entails drawing on (collective and communal) forms of knowledge that were specific to the community that Loovers was inhabiting, with an emphasis on knowledge that is 'grown' rather than transmitted in an abstract, disembodied sense.

Loovers describes the gradual emergence of muskrat houses (or 'push-ups') during the Spring thaw when their enduring and yet ever-shifting architecture was most apparent. In her scintillating, phenomenological 'Traffic of Love' with the Cairngorm mountains, written in the mid-1940s but not published until 1977, Nan Shepherd[2] also captures the state of flux that is inherent to seasonal rhythms. She recounts how

> the struggle between frost and the force in running water is not quickly over. The battle fluctuates, and at the point of fluctuation between the motion in water and the immobility of frost, strange and beautiful forms are evolved.
>
> (Shepherd, 2011, p. 29)

If Loovers' focus is on trapping muskrats in *Nagwichootshik*, Shepherd's 'correspondence' with the mountain is of a very different order. It is a

bloodless yet quietly lambent endorsement of the curious entanglement of things. Discovering the mountain in itself, Shepherd explains, is a process that takes many years and is not yet complete:

> Knowing another is endless. And I have discovered that man's experience of them enlarges rock, flower and bird. The thing to be known grows with the knowing.
>
> <div align="right">(Shepherd, 2011, p. 108)</div>

With the flames of morning conversation growing, and with a cool Edinburgh sky outside, we repaired to the study. There, at John's suggestion, we read the three chapters that comprise this section of the book again, this time aloud, breaking only to have a bowl of soup when the study grew cold, and we grew weary. We alternated between reading aloud and listening intently to each other. This was our way of living the texts and working our way into them. Voicing them was our way of leading them out into the world, a process we had begun in isolation prior to our first meeting. We practised the art of attentive listening. Occasionally, we stumbled over words and interrupted each other, as wayfarers moving together along a path of discovery. In short, we immersed ourselves in the 'manifold relations' (Ingold) within and between the texts.

Winter, in this volume, explores the pedagogy of the Bauhaus School of Art in Germany and their motto of 'head, hand and heart'. This wording, and the underpinning educational philosophy that underpins it, is derived from the Swiss educational reformer Wilhelm Pestalozzi who professed holistic, active, and embodied learning through the senses. According to Pestalozzi, there should be an integration of theory and practice, a synergy in the formative flows between mind, body, and emotion – and a close relation between teacher and student. Winter echoes this approach and the notion of 'learning by doing' associated with John Dewey, whose educational 'pragmatism' derives from the Greek 'pragma' – 'the deed, the thing done'. In fact, all three chapters in this section of the book are rooted in experiential learning, and all have been written by people who have studied and/or worked with Ingold at the University of Aberdeen.

A highlight of Winter's contribution is her exploration of the dialectics between invention and convention and between individual freedom and its relationship to community. Such tensions resonate with what Martin (2019a, p. 6) terms 'the ambiguities of individualism'. While anthropology's involvement with socio-centric societies has tended to frame individualism as a Western peculiarity, and even ill, those living in such societies may struggle with oppressive aspects of 'traditional' culture and strive for increased forms of agency (Martin, 2019b, p. 96). The arts have a long history of championing selfhood as a medium for emancipation. For instance, according to Kandinsky (1977, p. 77), art is an expression of an 'inner need' and an 'inner impulse'. There are good reasons to value such explorations of selfhood and their associated freedoms, whether in the arts or society. For example, Brunson's (2014) ethnography of 'scooty girls' in Kathmandu shows how motorcycles

freed young women to find adventure and intimacy away from household spaces and the parental gaze. In a similar vein, Loovers (*infra*, p. 154) refers to a Native American scholar, Daniel Wildcat, who writes about 'awareness of one's self' and its value in educational processes. Such perspectives underscore the importance of not patronising people in 'traditional' societies by assuming them to be exclusively 'socio-centric', as all people, indeed all living beings, have their own subjectivities (Salemink et al., 2018). This includes children. Perhaps we do our children a profound disservice by systematically downplaying their innate capacity for relationality with the human and the (so much) more-than-human.

Important questions arise around the roles of subjectivity and solitude in processes of learning in ways that might challenge a typically Ingoldian emphasis on the social. Baynes-Rock (2016; see also 2021) uses his ethnography of hyenas in Ethiopia to make the following, critical points: 'After spending time with hyenas you come to realise that the thing that most distinguishes humans, apart from our endless chatter, is our dull-witted sensory numbness' (2016, para. 5). When, then, for humans, is 'endless chatter' educational (which it can be) or a part of our 'dull-witted, sensory numbness' (which it can be, too)? Talking can stimulate attention, but it can also prevent us from noticing the world. When and how does being together enhance our education or else close our senses down? Ingold's continual emphasis on sociality orients away from singular senses of the self. There is a warm sense of co-presence to notions of 'offering one's thinking, indeed one's very self, to one's fellows' (Ingold, 2022a, p. 5). However, not all social experiences are so positive. More misanthropically, Sartre (1946, p. 47) wrote, 'Hell is – other people' in his play 'No Exit' in which an afterlife (hell) consisted of three people in a scenario that went on for eternity and from which there was no escape. For both their education and sanity, humans may need forms of independence and solitude, albeit in different ways, depending on culture and personality. 'I feel most included when people leave me alone', said Anne's inner child.

Winter's approach offers a solution to achieving the educational and social benefits of community without the perils of conformity and groupthink. She argues that the Bauhaus theorised such an ideal by working 'not as an orchestra obeying the conductor's baton, but independently, although in close co-operation to further a common cause' (Gropius in Winter, *infra*, p. 185). In her championing of such freedoms, Winter is critical of how education can 'canalise' students into pathways that may not reflect who they actually are. This dynamic has elsewhere been described as a 'fatefulness', as when (higher) education constrains people to a prescribed life trajectory (Loewenthal *et al.*, 2019). Rather than pigeonholing students, Winter speaks of education's potential to help them find their calling. While she does not mention the term 'vocation', which is derived from the Latin 'vocare' (to call), this does seem like an ideal for work post-education, albeit one that is notoriously hard to find (Terkel, 1985; Graeber, 2018). Winter explores the pursuit of a calling in the literary tradition of the *Bildungsroman*, i.e. novels

concerned with the formation of character. She summarises a particular novel by Goethe which portrays a young man's 'journey of self-discovery', giving an account of how he moves away from stifling education and emptiness, from 'transient pleasures or predestined expectations' to seek adventure, love, truth, and meaning. The implication is that such experiences constitute education in the actual sense of the term.

The reference to the *Bildungsroman* is inspiring and reminds us of the radical educational potential of reading. This frequently solitary phenomenon occupies an interesting position concerning 'the ambiguities of individualism' (Martin, 2019a, p. 6). Reading may be very social through its imaginary relations with fictional characters and their authors (Caughey, 1984). Maya Angelou (2015, p. 100) evocatively describes reading as an adolescent in the American South:

> To be allowed, no, invited, into the private lives of strangers, and to share their joys and fears, was a chance to exchange the Southern bitter wormwood for a cup of mead with Beowulf or a hot cup of tea and milk with Oliver Twist.

This kind of 'imaginative mobility' (Urry, 2007, p. 40) and an invitation to other worlds resonates in the third contribution from Curtis, Schofield and Vergunst. The authors attempt to elicit imaginative leaps by encouraging children to engage with temporal aspects of the environment (both past and future).

Curtis, Schofield and Vergunst form a team of interdisciplinary researchers who reflect on an educational initiative in the northeast of Scotland that involved planting a small woodland or 'Wee Forest'. Local primary school children assumed responsibility for 'looking after the developing woodland' and the team hoped, 'over the coming years, … to follow [the children's] experiences of the woodland in their everyday lives' (*infra*, p. 170). The authors distinguish their project from the classic image of a child covering a seed with soil to emphasise a more engaged and processual philosophy. They argue that 'covering' the seed (much like covering a unit in the curriculum) marks the genesis of the children's education, not a sign of its completion. The researchers hope to witness 'how, through weeding, watering, foraging in, playing in and measuring the Wee Forest, children learn about trees as living things' (*infra*, p. 170). The purpose of this engagement, they argue, is to allow the trees and their ecosystems to engender interest in and knowledge about, science that is more sophisticated than that afforded by a classroom lesson. Such points are epistemological: that real-life forms can shape knowledge in a more profound and authentic manner than any detached textbook description. Elsewhere, the same might be said for the educational power of travel that also underlies Loovers' apprenticeship into the Native Canadian spring. Stafford (2016, p. 60) makes a relevant epistemological argument that 'people do not generally know much about things they have not yet lived

through'. Curtis and colleagues hope that 'lived experience' with the 'Wee Forest' creates a 'meaningful context' for explorations into deeper science (*infra*, p. 176) such as palynology (i.e. the study of pollen and its archaeological insights into prior landscapes). There is an overarching, subliminal agenda of fostering the children's ecological advocacy amidst human-made climate change. Children are thus framed as 'voices of the future', invested with hopes of knowing about, and caring for, the environment as they grow up in a world that confronts environmental crises.

While seemingly reasonable, such attempts to go beyond the here and now are problematic to some degree. To what extent is it legitimate, we wonder, to invest children with responsibility for maintaining an inspiration for 'learning for sustainability' (as outlined in *Education Scotland*'s curriculum) rather than simply to invite their entanglement with both the wood and the trees? Is it fair to turn young children-in-the-present into 'voices of the future' – framed in the context of climate catastrophe? We sensed a lack of phenomenological engagement between children and the trees *as they are*, as in Husserl's 'zurück zu den Sachen selbst'/ back to the things themselves (see Jackson, 1996). While the researchers endorse a form of knowledge that grows organically from encounters with the forest, a climate-oriented ideology appeared to be handed down and loaded onto the woodland. In sum, there is a broader issue at stake here, one that relates to the relentless future orientation of education and parenting. How do we convey to children the seriousness of the challenges facing the planet without 'fucking them up' (as one of us put it)? Do we risk socialising them into our anxieties before they have even had the opportunity to find their bearings? Should it not be for new generations to find their way into the world, as Ingold (2018) himself argues? If so, then we must be careful about which messages and beliefs are passed on to children, and how, even if this is done with the best of intentions. Considering the severity of the climate crisis, maybe it *is* acceptable to manipulate children into becoming environmental custodians. But we should not pretend that we are doing otherwise.

Developing Dewey's ideas on education as growth, Ingold (2018) puts forward the view that education leads us out into the world, into new and unimagined territory. In this sense, and following the contributions in this section, we can take issue with the educational historian Lawrence Cremin's (1988, pp. ix-x) influential definition of education as 'the deliberate, systematic, and sustained effort to transmit, evoke, or acquire knowledge, values, attitudes, skills, or sensibilities...'. Why must education be deliberate, systematic, or sustained? Education may be what happens to people as they experience life in its unfolding novelty. Experimentation may lead to a kind of planned mystery, as in experimentation with food types (Loovers), with ideas and materials in an art school (Winter) or with the ecologies of small woodlands and what they may indicate in a laboratory (Curtis *et al.*). Other forms of education may come from experiences that were neither planned nor purposeful, such as the forms we experienced as co-authors. These forms

might include encounters with texts, conversations, living beings, bureau-cratic systems, ill health, cultural differences, the physical environment, or indeed anything that life throws at people across their lives. For example, Irving's (2017) ethnography conducted over 20 years shows the profound ways in which contracting a disease (HIV/AIDS) acts upon people and plunges them through a life education not of their choosing. Accordingly, we would argue that further than anything deliberate, education emerges out of life's contingencies and happenstance. Human agency is thus always only a partial determinant of an educational trajectory. In this sense, this book project has taken us both on a journey. We have learned, in unexpected and tacit ways, from the special affordances offered to us as co-authors of this section introduction. We greatly enjoyed engaging with the mellow fruitfulness of the various textures of lived experience that we have explored above. We would also like to commend the practice of 'social reading' for academic purposes. Finally, we would like to thank all those concerned for the opportunity.

Notes

1 Here we are drawing loosely on Loovers, in this volume, and on Ingold (2022b, p. 5).
2 For an exploration of the educational legacy of Nan Shepherd, see Pirrie (2018).

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7 Living theory

Anthropology, education, and manifold relations

Jan Peter Laurens Loovers

The edges of the book pages, discoloured by the blending of Kalahari sand and Arctic wood smoke, are crinkled from years of visiting. The inside, saturated with grease, dirt and smells from across the globe, includes pencilled notes and lines underscoring particular moments of attention. After 20 years, my personal paperback copy of Tim Ingold's *The Perception of the Environment* still somehow holds together quite like some of Ingold's arguments that he put forth in the book. This chapter is an exploration of how my life is a weave including many threads, but the main ones are the book, the teachings I have received from Teetł'it Gwich'in in Northern Canada, and my subsequent work in the museum sector. Two sentences, in particular, have resonated vibrantly in every aspect of my life ever since our paths crossed. The first sentence, 'the conception of the human being … as a singular locus of creative growth within a continually unfolding field of relationships' (Ingold 2000: 4–5), I read at Utrecht University in 2002. Under the tutelage of Fabiola Jara Goméz, I engaged with Tim Ingold alongside the philosophies of Deleuze and Guattari, Leibniz and Spinoza. These textual conversations with anthropology and philosophy affected how I came to understand the manifold field of relations. The second sentence came about three years later on a faithful

winter afternoon in Fort McPherson, Northwest Territories, Canada. James Herbert Thompson, a Teetł'it Gwich'in Elder, listened to my ordeals in starting fieldwork with Gwich'in and resolutely stated, 'You have to live it'. James Herbert's guidance underscored the importance of educational practices that Gwich'in advocated to live life on the land. In *Reading Life with Gwich'in* (Loovers 2020), under the supervision of Tim Ingold and David Anderson, I brought the two sentences together to set out an educational approach and, in this chapter, I want to further develop and fine-tune some of those ideas.

Concepts, born out of ethnographic experiences and anthropological contemplation, are not only good to think with, *they are to live with*. Put differently, following Ingold, '[t]o practise theory as a mode of habitation is to mix and mingle, in one's thinking, with the textures of the world' (2021: 14–5). Practising theory, or taking it a step further by *living theory*, certainly entails mingling with the world's textures as much as it does with the textual textures. Nishnaabeg scholar Leanne Betasamosake Simpson's article *Land as Pedagogy* resembles much of what I have in mind. She provides similar guidance as James Herbert Thompson, 'the first lesson … [is that] to learn about something, you need to take your body onto the land and do it' (2014: 17). Simpson also illuminates what I mean by *living theory*. '[W]ithin Nishnaabeg thought', she writes, ' "Theory" is generated and regenerated continually through embodied practice and within each family, community and generation of people'. Simpson, however, notes that ' "Theory" isn't just an intellectual pursuit – it is woven within kinetics, spiritual presence and emotion, it is contextual and relational … Most importantly, "theory" isn't just for academics; it's for everyone' (2014: 7). Ultimately, in this chapter, I want to set out what *living theory* entails through an investigation of *life as a multiplicity in creation within manifold relations (correspondences)*. Using examples from Teetł'it Gwich'in Elder Neil Colin and Teetł'it Gwich'in educator Gladys Alexie,

Life

Let us return to Ingold's (2000: 4–5), sentence in *The Perception of the Environment* that I quoted at the start: 'The conception of the human being … as a singular locus of creative growth within a continually unfolding field of relationships'. The explicit reference to the human being has always struck me as peculiar. Can only human beings be a 'singular locus of creative growth in the unfolding field of relations'? What about animals, what about the Thunderbirds and stones, what about other beings? Within *The Perception of the Environment*, Ingold was quick to note that he did not only refer to human beings per se but extended this to what he called an 'organism-person', 'persons', and 'non-humans' elsewhere in the book. The rather peculiar 'organism-person' was short-lived and replaced by 'inhabitant' to capture notions of living or dwelling in the world (e.g. Ingold 2007: 3; Ingold 2011: 10). The inhabitant, too, is human and non-human. Is the omission then an unfortunate happenstance or does it reflect Ingold's shifting attention back to predominantly

humans, after his extensive work on animals, as shown in his later works? Asking Ingold in a recent email about this exclusion, he replies:

> The 'human' emphasis in the sentence in question comes simply from the fact that in this particular context, I am comparing my conception with the classical dualist one (one part person; one part organism). In any other context, 'singular locus of creative growth within a continually unfolding field of relationships' could apply to any living being, whether human or nonhuman.
>
> (personal communication, 18 May 2022)

I have come to a similar solution to the paradox and have always conveniently ignored the word 'human' and started with 'being' to imply both humans and non-humans. Yet there might be more at stake, and the inclusion of humans illustrates the persistence of theoretical legacies in which there is a clear difference between humans and non-humans. These slippages can also be found within Ingold's work where he moves between the human and non-human with a tendency to emphasise the human. It is perhaps telling that in his book *Imagining for Real*, Ingold starts the first section *Creating the World* with 'we humans owe our existence to a world' (2022: 11) or, elsewhere, that 'anthropology ... *is philosophy with people in*' (2018a: 4, original emphasis) or that 'pedagogy ... may indeed be uniquely human' (2018b: 2).

Elsewhere, I considered the field to be a multiplicity (following Deleuze and Guattari 2003) that is sentient and historical (Loovers 2020: 4). I went on to write that the field was a 'local nexus in which relations are created, brought together, ruptured, and incorporated through the actionings and positionings of manifold persons and other living entities' (Loovers 2020: 5). Perhaps we can take the sentence even further and reformulate it in terms of life. *Life is a multiplicity in creation within continually unfolding relations (correspondences)*. I follow here Tim Ingold's description of creation and correspondences. 'Creation', Ingold underscores, 'is not an outward expression of creativity but harbours its own impulse of growth and renewal ... it is *crescent*' (Ingold 2022: 5, original emphasis). He goes on to say that this 'crescent world ... demands continued attention' (Ingold 2022: 5). I will return in more detail to attention in the second part of this chapter. 'Correspondence', Ingold continues, 'is about *living together in difference*' (Ingold 2022: 6, original emphasis) where 'every correspondence is a *process* ...[,] *open-ended*, ... [and] *dialogical*' (Ingold 2021: 11, original emphasis). This dialogical, open-ended process is relational *par excellence*. Like creation, correspondence, too, demands attention (Ingold 2013; see also Loovers 2015: 113). Now, why have I placed correspondences in brackets and continued to include relations? Why have not simply replaced relations with correspondences? Ingold, in our email conversation, provides an answer when he explains 'Correspondence is what you get when you track two (or more) loci in the field, in their conjoint unfolding over time' (personal communication, 18 May 2022).

The second sentence is James Herbert Thompson's 'You have to live it'. Here, the Teetł'it Gwich'in Elder underscored that I had to go out on the land with various Gwich'in and become educated in all facets of life. Taking his guidance at heart, I travelled with various Gwich'in teachers to hunt, trap, pick berries, get rhubarb, collect medicinal plants, and fish, cut wood, build cabins, and 'see the country' (Loovers 2016, 2020). But his guidance was not only concerned with living on the land, it also entailed a much broader yet focused direction to participate in all aspects of life. Whilst being in Fort McPherson, I was told to go and 'sit with Elders' and 'visit Elders'. *Sitting with Elders* implied visiting them and listening to their stories to be taught whilst *visiting Elders* meant going to their homes and watching what they were doing – e.g. how they were cutting up caribou meat, and how they cooked. In short, his five words were an invitation to a type of knowledge that depends on learning, teaching, and knowing.

An educational approach

In Gwich'in 'knowledge' is not encompassed by a single word, instead, there are three different words: *gihk'agwaanjik*, *gatr'oonahtan*, and *gahgwidandaii*. Loosely, they can be transcribed as knowledge-through-learning, knowledge-through-teaching, and known or borne knowledge. William George Firth and Alestine Andre, Gwich'in knowledge-keepers, have been instrumental in my understanding of these concepts. In an email correspondence in 2009, William George explained that

> *Gihk'agwaanjik* – this is primarily knowledge that is sought after and is discovered. The person is in search of this and finds out on their own. 2. *Gatr'oonahtan* – this is taught by someone to you and is knowledge that is out there and known by someone. 3. *Gahgwidandaii* – this is knowledge that is known that has been passed on, similar to #2. After you are taught, then it is known and it is useful.
>
> (in Loovers 2020: 14)

In a following correspondence with Alestine Andre in 2010, she elaborated on William George's email and illuminated that: '*Gahgwidandaii* means "(many) people's knowledge (past tense), or people already knew"', or in other words, 'everybody's knowledge (past tense)' (Andre, personal communication). She continued to write that '*gatr'oonahtan* is 'knowledge [that] is straightforward, "someone is being taught by another person". There are two people involved – teacher and student' (ibid). In response to *gihk'agwaanjik*, Alestine underscored that it is 'straight forward, "someone discovers knowledge". Only one person involved' (ibid). Through William George Firth's elaboration, after consulting with elderly Gwich'in women, and Alestine Andre's further clarification, I have considered *gihk'agwaanjik* and *gatr'oonahtan* as two intertwined pathways that lead, and have led, to *gahgwidandaii*.

Both William George and Alestine accentuate the aspect of discovery as pivotal to *gihk'agwaanjik*. Discovery, deriving from Old French *descovrir*, has come to be understood as uncovering, unveiling, or revealing. Unlike this definition of discovery, as a singular moment of obtaining knowledge, I rather want to pick up on the notion of revealing and making known. Here, to reiterate, William George explains that *gihk'agwaanjik* is knowledge gained through learning by doing and making things through active practice. The apprentice, or learner, is expected to take an autonomous, proactive role in learning. The apprentice, Alestine summarises, discovers knowledge by their own initiative. Equally important to know is *gatr'oonahtan*. Alestine Andre explains that this is understood as 'one-on-one teaching'. At the core of this is sharing knowledge through narrative (storytelling, guidance, instructions, teasing comments) and through active showing. Gregory Cajete, a Tewa scholar and educator from Santa Clara Pueblo, underscores that teaching involves the 'transformation' of the novice by the conditions that the teacher sets up (2000: 47). Finally, *gahgwidandaii* is the highest valued form of knowledge and something one is striving towards and reaching out for. Alestine explains that this knowledge is plural: collective and communal. The initial impression, and one that has certainly been taken up by academics, politicians and the general public, is that knowledge is a bounded package that can be handed over from generation to generation. The next generation just needs the proper 'cultural mental mechanisms' to unravel the codes to decipher the packaged knowledge. Ingold has been a strong opponent of an understanding of education as transmission in this sense (2000, 2011, 2018b, 2022). He specifically critiques the idea that knowledge is a complex structure that can be 'replicated' inter-generationally. Rather, he considers knowledge to be processual and 'reproduced' (Ingold 2011: 159). The novice, thus, does not have the predetermined cultural, and mental structures to make sense of the teachings by a more experienced practitioner, but instead 'grows' into becoming knowledgeable (Ingold 2011: 162). This resonates with Cajete's understanding of education as 'an art of process, participation, and making a connection. Learning is a growth and life process; and Life and Nature are always relationships in process' (Cajete 1994: 24). *Gahgwidandaii* rather needs to be understood as the shared accumulation of *gihk'agwaanjik* and *gatr'oonahtan* that can expand from one generation to generations. Nishnaabeg scholar Leanne Betasamosake Simpson (2014: 15) eloquently puts the Nishnaabeg understanding of '[c]oming to know' as 'a mirroring or a re-enactment process … concerned with embodied knowledge animated, collectively, and lived out in a way in which our [Nishnaabeg] reality, nationhood and existence is continually reborn through both time and space'. Simpson concludes that 'coming to know is an intimate process, the unfolding of relationship with the spiritual world' (2014: 15). A knowledgeable person is someone who has an in-depth experience of a particular practice or practices, someone who has travelled vastly, who has

been taught by other knowledgeable persons, and is now in a position to teach. *Gahgwidandaii*, or known knowledge, thus, is relational *par excellence*. A more poetic way to put it could be to speak of *grown rather than known knowledge*.

These three distinctive but related notions of knowledge have formed the base for the educational approach that I have advocated. Such an approach entails revealing, opening up (Ingold 2011, Cajete 2000), and reaching out. Cajete writes that 'one must become open to the roles of sensation, perception, imagination, emotion, symbols, and spirit as well as that of concept, logic, and rational empiricism' (2000: 2). To do so, Cajete speaks of 'tuning in' to the environment, where '[t]he body feels the subtle forces of nature with a heightened sensitivity… [t]he mind perceives the subtle qualities of a creative natural world with great breadth and awareness' (2000: 20). In other words, an *ecological emergence* constituted by the four integrated processes of awareness, attentiveness, attunement, and incorporation (amalgamation) that are paramount in knowing.

Daniel Wildcat, a Yuchi scholar from the Muscogee Nation, writes that 'awareness of one's self is the beginning of learning' (2001a: 13). What follows next, I would add, is the awareness of others. There is self-awareness and other-awareness. In the initial stage of *gihk'agwaanjik* (knowledge-through-learning) and *gatr'oonahtan* (knowledge-through-teaching), there is a moment of awareness. In the case of *gihk'agwaanjik*, this entails becoming aware of a particular sound, gesture, posture, or position of the body in relation to a material (or body of an animal), the material, or the place. Becoming aware means *opening up* and *being drawn into* a practice. This can happen 'expectedly', as one is actively searching for learning, or 'unexpectedly' as one goes about doing other things and comes across something that grows into a source of learning. Here, we need to remember that '[l]earning', as Cajete argues, 'is always a creative act' (1994: 25) in which 'every situation [provides] a potential opportunity' (1994: 33).

From this initial locus of awareness, the novice learner becomes attentive to the intricacies of the nexus of material, body, and tools. Ingold explains that 'attention' derives from the Latin word 'ad-tendere' or 'toward-to stretch' (2018b: 20). Put differently, attentiveness implies *reaching out or into* the material, tool, others (including humans, animals, plants, spirits etc.), the land, the water, the sky, etc. Or, again Ingold, 'attention opens a way for an imagination that does not oppose but reaches into, and joins, with the real' (2022: 6). This leads Ingold back to correspondence (2022: 6), which suggests a mingling, or joining with, between person and practice. Attentiveness, in the case of *gihk'agwaanjik*, is an intensified concentration on discovering through exploring and experimenting with the intricacies of a particular practice. Through this, knowledge is revealed in practice. Or to return to Alestine and William George's words, 'one finds out'. This 'observing practice' (Anderson 2000: 33) also applies to *gatr'oonahtan* when watching the bodily movements (techniques, postures, and gestures) of a

more experienced practitioner or listening closely to a story or guidance. The teacher guides and the student follows. Storytelling, Ingold reminds us, 'is not to represent the world but to trace a path through it that others can follow' (2011: 162). The novice, then, can follow and re-direct one's awareness and attentiveness. Indigenous Peoples, including Gwich'in, stress the importance of sharing stories. Cajete eloquently observes that '[e]verything that humans do and experience revolves around some kind of story' (Cajete 1994: 137) that brings together the novice, the teacher, the land, and spirituality (Cajete 1994: 138).

The processes of awareness and attentiveness, as ways of opening up and reaching out, further entail attunement. Kathleen Stewart considers attunement as 'worlding – an intimate, compositional process of dwelling in spaces that bears, gestures, gestates, worlds. Here, things matter … because they have qualities, rhythms, forces, relations, and movements' (2011: 445). Furthering the acuteness of the senses, she goes on to say that attunement is about tuning up (2011: 448). The novice learner becomes more comfortable with the materials, the tools, and the bodies and starts to comprehend the facets of a practice. Tuning up and tuning in (c.f. Schroer 2018) implies getting familiar with the material, the movement of the body in relation to the practice, and the ongoing minuscule adjustments and tinkering during the making or doing. In other words, the novice learns to attune to the relational nexus of person, other persons, material, tool, and movement. Ingold understands this tuning in as a correspondence, a harmony or a joining with the body, mind, and material (2022: 248). From attunement, through a continuous and often repeated process, the novice incorporates the practice. This is very much in line with Cajete's 'tuning in' as mentioned above.

These four processes are certainly not linear and there is a constant flow between them. They involve different degrees. Think, for example, that you are doing something and suddenly get distracted. Something else draws away your attention and returning to the task at hand implies a re-tuning.

Education on the land – Trapping muskrats at Nagwichootshik

The late Neil Colin, renowned for his storytelling, humour, and knowledge of the land across the Gwich'in Nation and adjacent Indigenous lands, gladly shared his knowledge with non-Gwich'in visitors both in the community and at his cabin at *Nagwichootshik* (the Mouth of the Peel). Perhaps unsurprising, Neil Colin was the first Gwich'in with whom I spent time out on the land in December of 2005 (see Loovers 2020: xv, 31–4). It was also with Neil Colin that I would 'spend spring' at *Nagwichootshik* during May 2006. 'Spending spring' forms an important seasonal time on the land for Gwich'in where they would trap or hunt muskrats, beaver and waterfowl. *Sreendyit* (spring) is the time when the warmer weather melts the snow. The subsequent drop of snow on the lakes makes the iconic muskrat push-ups appear. The ice on the creeks and rivers, too, begins to melt and eventually break up. These

changes on the land also preclude the return of thousands of waterfowl such as geese and swans to the Arctic. From 1917 onwards, this period would also mark the 'ratting season' where Gwich'in would trap and shoot muskrats for fur, food, and financial profit (Slobodin 1962: 36–7). For Neil Colin, trapping muskrats was secondary to being at his cabin during *sreendyit*. His prime concern, as the only remaining inhabitant at *Nagwichootshik*, was to keep the place alive. Neil Colin recounted how *Nagwichootshik* was once a thriving Gwich'in community with 47 families where Gwich'in would gather predominantly for the spring and summer to trap muskrats, hunt waterfowl, and fish for themselves and their dogs. There used to be people living across the river from his cabin too, as illustrated by Slobodin's 1938 map of *Nagwichootshik* (1962: 64). Decades later, the once thriving and vibrant community was abandoned with the exception of Neil Colin. There have been various reasons for Gwich'in to leave *Nagwichootshik*. Becoming more reliant on snowmobiles from the 1980s onwards, there was no longer the need to fish for herring at *Nagwichootshik*. The Dempster Highway, completed in 1978, led to a growing fishing community at *Natainlaii* (Eight Miles) which is closer to town and accessible by truck. The old abandoned, deteriorating log cabins at *Nagwichootshik* also reflect settler policies of welfare and education that led to a shift from living on the land to living in the community of Fort McPherson (Wishart & Loovers 2013, Alexie 2015).

'Spending spring' does not start in spring. As early as January 2006, during a visit to his house in Fort McPherson, Neil Colin commented that he was going to spend spring at *Nagwichootshik* and as such probed my interest to accompany him. In the following months, numerous Gwich'in taught me about the seasonal particularities. They shared stories about what clothing and footwear to wear, how to hunt beaver and geese, how to trap muskrats and what to expect on the land. All these teachings returned as guiding memories as I spent *sreendyit* (spring) at *Nagwichootshik* in May 2006. For three weeks, I was under the tutelage of Neil Colin and Abe Peterson who had joined us for company. On the first night, I reflected on the place and the stories that Neil Colin had been sharing:

> I notice that all is in relation here and indeed all things are connected. The flu epidemics are coming to arrive [perhaps Neil Colin's premonition of the Covid-19 pandemic]. Everything is in movement, in travelling, animals/humans follow same pattern. *And all is in terms of learning*. Only the Old People know [*gahgwidandaii*]: those that have lived the seasons on the land.
>
> (notes, 5 May 2006)

Both Neil Colin and Abe Peterson certainly had lived the seasons for many decades and were taught by their parents or grandparents and other Gwich'in Elders. In the intimacy of waiting for the melting of the snow on the lakes and the *Teetł'it Gwinjik* (Peel River) ice to break up at *Nagwichootshik*, the two

elderly men shared with me their long-lived experiences of 'spending spring out on the land' trapping, hunting, cutting wood, cooking, travelling, stories about Gwich'in ancestors, and much more. Reading back my notes from those weeks, they do not reflect the educational processes of *gihk'agwaanjik* (learning) and *gatr'oonahtan* (teaching) but rather produce summarised factual accounts that are more akin to a repertory of *gahgwidandaii*. As an example, this is how I recounted setting traps for muskrats: 'Went trapping rat and set 4 traps …willow stick, deadfall trap, chisel [sic.], axe, scoop, [and] wire. With chisel [sic.] make bed at entrance' (notes, 10 May 2006).

During the first evenings, when the temperature dropped below zero degrees Celsius, Neil Colin and I had travelled on snowmobile to the lakes scouting for any black spots that could indicate a muskrat house. With the warming weather, the snow on the lakes had dropped and muskrat houses were slowly emerging. As he and other Gwich'in trappers already had noted in the winter, there were not many muskrats in the Mackenzie Delta this year. The few muskrat houses that we found were 'staked' with a willow stick.[1] As we staked the houses, Neil Colin explained that '[musk]rat houses are actually kitchens in which the rats keep their storage. The push-ups, as they are locally called, are built over years as they [the muskrats] put moss on the bottom and it grows larger over the years. Their homes are in the [river] banks' (notes, 9 May 2006). By 10 May 2006, with a further dropping of snow on the lakes, we had become aware of more muskrat houses and set four more traps. Alongside other things, muskrats formed an important part of our daily movements and conversations. Traps had to be checked, reset, taken out and placed elsewhere. With the arrival of warmer weather, muskrats had become active. Both on the lakes at the muskrat houses and in the cabin, Neil Colin explained that muskrats put their doors to the south side away from the cold North wind. Thus, knowing (*gahgwidandaii*) the wind-direction, rat-movements, and investigating muskrat-houses, the Gwich'in had observed the relations between muskrat, wind, weather, architecture, and movements (GRRB 1997: 79–87). Neil Colin brought forth this knowledge in the practice of setting muskrat traps and teaching me.

Until the lakes became inaccessible due to the melting ice, there was a continuous movement of traps. As Neil Colin had told me on various occasions before, and as we had done while taking out rats from the traps, we said 'Mahsi cho Vittekwechanhyo' to give thanks to God the Creator for providing us with food and fur. Traps needed to be attended to and we had to be aware and attentive to the places where traps were set and the number of traps set. As such, particularly when trapping, traps constitute an integral part of the skilled and knowledgeable trapper. Traps and rats are being discussed, previous experiences are narrated and when successful with trapping rats need to be skinned and stretched as Neil Colin would teach me at his cabin at *Nagwichootshik*.

Recalling our muskrat trapping, Neil Colin's words that he was trapping that year 'just for the "fun" of it' continue to echo. It was a far cry from the

Gwich'in stories that I had heard in Fort McPherson about the lakes in the Mackenzie Delta covered with muskrat houses and the sheer amount of work that Gwich'in men and women had to do trapping and shooting hundreds if not thousands of muskrats. Yet, trapping was much more for Neil Colin than just 'fun'. He was adamant about teaching me how to trap muskrats, we enjoyed delicious meals of muskrats, and he continued what his teachers and Elders had done – 'spending spring' by trapping muskrats amongst many other things.[2]

Resonating education in anthropology and museums

The aforementioned educational approach was shaped by my experiences of learning from and being taught by Gwich'in. It has grown out of being on the land and in the community (especially Fort McPherson). But almost four years have passed since I last visited the Gwich'in Nation. In early June 2018, I went for a very brief visit following a film project in Dawson City on the making of a fish wheel. The days were spent visiting and 'sitting with Elders'. By then, more of my Gwich'in teachers had passed away. Returning to Europe, various casualised contracts followed in the museum sector and at academic institutions.

Though far away from Fort McPherson and the land, the teachings I have received from many Gwich'in continue to vibrantly resonate with the way how I have come to live life. Allow me to illustrate this with the example of the Gwich'in *Dinjii shin ch'yah* (Man's Summer Outfit) that is housed in various museums including the National Museums of Scotland and The British Museum. The *Dinjii shin ch'yah*, made from caribou skin and dried in the sun and wind, was traditionally decorated with porcupine quills before trade beads replaced them.[3] Many years ago, in the winter of 2006, I visited the late Mrs Elizabeth Colin at her home in Fort McPherson. 'Sitting with her', she shared a story about her participation in a sewing project organised and funded by the former Gwich'in Social and Cultural Institute (now Gwich'in Tribal Council's Department of Culture and Heritage). She recalled how proud she felt as she was giving the opening speech to an exhibition at the Prince of Wales Northern Heritage Centre (Thompson & Kitsch 2005: 50, 55). She also recounted how nervous she was sewing with porcupine quills, something which had never done before but had seen her Elders do. Porcupine quills, she warned, are dangerous for being able to travel into the bloodstream if getting poked with one. Almost a decade later, in 2015, her niece Gladys Alexie was invited to a Knowing From the Inside workshop organised by Caroline Gatt (2018). Taking most of her time in Scotland, Gladys and I decided to visit Gwich'in belongings at the National Museum of Scotland in Edinburgh.

Antje Denner, former curator at National Museums Scotland, together with her colleague, welcomed Gladys and me to the Museum stores. The belongings themselves had arrived during various historical periods, reflecting

the imperial and colonial connections of Scotland with Gwich'in through Hudson's Bay Company fur traders, Anglican missionaries, and visitors. One belonging, in particular, captivated Gladys' attention: the *Dinjii shin ch'yah* collected by Anglican missionary William Kirkby in 1860. Thomas D. Andrews and Gavin Renwick, who led an exhibition at the Prince of Wales Northern Heritage Centre (Yellowknife, NWT, Canada) that displayed the *Dinjii shin ch'yah*, provide a neat entry:

> The striking white caribou skin, the broad fringed chest band of porcupine quills, the tapered shirttails, and the moccasin-pants are characteristic of early Gwich'in clothing. Quill wrapped fringes brighten the mittens and knife sheath while the shirt fringes are decorated with silverberry seeds and black glass beads. This outfit was probably reserved for important social or ceremonial occasions.
>
> (2006: 22)

As the box opened and the protective paper folded out in which the outfit was stored, Gladys' heart raced as she was overwhelmed by seeing the intricacies of her ancestors' sewing. Later, she would comment on how emotional she had felt seeing the *Dinjii shin ch'yah*. As we looked at the belongings together with Antje and her colleague, Gladys both discovered (*gihk'agwaanjik*) and taught (*gatr'oonahtan*) us but me in particular. She would draw attention to various nuances that only experienced seamstresses would be attuned to. The first thing she noticed while touching the porcupine quills was: 'It almost looks like beads. It is so tiny'! In the same breadth, she added, 'And so well done', as she admired the sewing work. Moving around the garnet, the *Dinjuu shin ch'yah* was opening up and revealing lives and knowledge of the past: the caribous used for making the clothing, the porcupines whose quills were used, silverberry seeds, sewing techniques, the intricate babiche, the use of iron needle rather than bone needle, the berries and ochre used for dyeing, the bodily measures of the wearer with unusual small feet, the specific markings of the maker. In short, *Dinjuu shin ch'ay* is an amalgamation of manifold relations.

Two years later, as Project Curator for the Arctic exhibition, I found myself again in a museum store but this time without Gladys or other Gwich'in teachers and at The British Museum stores rather than those of the National Museums of Scotland. Together with Amber Lincoln, the Lead Curator for the Arctic exhibition, we looked at various objects that could potentially be included in the exhibition. For some reason, I was drawn to a box on the higher shelves of one of the storage units. After climbing up a small ladder and removing a protective paper, a beautifully *Dinjuu shin ch'ay* appeared with vibrantly dyed porcupine quills (Lincoln & Loovers 2020: 60, 62). Remembering what Gladys had told me several years before, I realised that this would be a more recent one and indeed the records showed that it was made in the early 1900s for tourist trade. Although there were various

beautiful parkas made by skilled Inuit seamstresses, I felt an immediate and intimate connection with the *Dinjuu shin ch'yah*. My thoughts travelled back to the land, to Fort McPherson, to the Gwich'in teachers. My thoughts went to Gladys and her aunt, Mrs Colin.

Living theory

What do muskrat trapping, caribou hunting or *Dinjuu shin ch'ay* have to do with theory you might wonder? Where does anthropology fit in? Tim Ingold has gone to great lengths to advocate a different anthropology, distinguished from ethnography, as 'a *philosophy with the people in*' (2018: 4, original emphasis). Central in his vision of anthropology is learning from the experimental living of those with whom anthropologists work to further their own prospective imaginations for alternative futures. Echoing his earlier work which has formed a cornerstone for my own thinking, this acknowledges that people are immersed in environmental processes and relations (Ingold 2018: 8). This also resonates with Simpson's articulation of theory at the start of this chapter. You might recall she considered theory to be generated and regenerated relationally, spiritually, and belonging to everyone. As such '"[t]heory" … is intimate and personal, with individuals themselves holding the responsibilities for finding and generating meaning within their own lives'. (Simpson 2014: 7). Effectively, this implies relational imagination. Unsurprisingly, Simpson is adamant that Indigenous peoples are theoreticians, and Indigenous Elders are revered for their philosophical wisdom. This conforms to the Gwich'in articulation of the integrated educational processes of g*ihk'agwaanjik*, *gatr'oonahtan*, and *gahgwidandaii* where we can consider trapping, hunting, and sewing as theoretical sensitivities. Neil Colin's meticulous setting of muskrat traps builds on decades of learning and being taught, it flows out of generations of relations with his Gwich'in teachers, muskrats, weather, *Vittekwechanhyo*, other animals, settler state regulations, willow, and much more. Within this integrated nexus of relations, experiments carried out throughout the years reflect older and newer experiences. For example, Gwich'in had made traps out of willow prior to leghold traps and more recently conibear traps had become more widely used in accordance with settler law. I would imagine, too, that muskrats are theoreticians who 'answer to queries of *why*' (Sutton & Staw 1995: 378).

Might it be too far-stretched to consider the *Dinjuu shin ch'ay* as a theory? Simpson adds in her treatise of 'theory' that it 'is generated from the ground up and its power stems from its living resonance within individuals and collectives' (2014: 7). Certainly, *Dinjuu shin ch'ay* are 'woven within kinetics, spiritual presence and emotion' (2014: 7). Gwich'in seamstresses, who made the *Dinjuu shin ch'ay* housed at the National Museums Scotland and The British Museum, would have experimented with experiences of sewing

with beads and porcupine quills. While porcupine quills had been replaced with beads in previous decades, we might envision the Gwich'in seamstress building on her expertise and those of her teachers. The *Dinjuu shin ch'ay* are also entries for present Gwich'in seamstresses, like Gladys Alexie, to be taught and learn. To that extent, they are expressions of *gahgwidandaii* and powerful 'living resonances' for Gwich'in who visit them. In other words, a confluence of manifold relations.

This brings me back to Tim Ingold and James Herbert Thompson. Between the lines, I have spoken about *life as a multiplicity in creation within manifold relations*. I have spoken about educational processes that Gwich'in and other Indigenous Peoples continue to emphasize and advocate. This entails, as James Herbert Thompson and Tim Ingold theorized, 'living it' and being immersed in manifold relations. *Living theory*, then, grows through education. Or as Ingold writes, 'the overriding purpose of anthropology is not ethnographic but educational' (Ingold 2018a: 14). Yet, *living theory* also brings a slight unease with Tim Ingold's rigid distinction between anthropology and ethnography. Certainly, following Ingold (2011: 242), the regenerated production of authoritative and factual descriptions of educational processes generated through working with others without proper acknowledgements that constitutes (classic) ethnography is problematic and counterintuitive to what I have argued here. Yet, a mere dismissal of description as being anti-anthropological might likewise be problematic for its prominence on only one aspect of education: *gihk'agwaanjik* (knowing through learning). Gwich'in Elders, like Neil Colin and Abe Peterson, have been adamant about describing in detail what "spending spring" entails. Their descriptions, in the shape of stories, might better be understood as *gatr'oonahtan* (knowing through teaching). At the same, anthropology freed from ethnographic fidelities by overemphasising individual transformative endeavours through doing or making as ways of learning or *knowing from the inside* that then allows critical dialogue or inquiry (Ingold 2013: 6) might likewise be disconcerting. In all fairness, as I argued above, Ingold considers anthropology as a 'correspondence' and 'a practice of education' which is by essence relational (Ingold 2018a; see Loovers 2015: 112–3). The argument that I want to conclude with here is that both descriptive stories and practices with others are conversations in life (c.f. Ingold 2018a: 25). This also leads me back to muskrat trapping. Perhaps my brief fragmented notes on muskrat trapping experiences at *Nagwichootshik* were a reflection of an uneasy relationship with ethnographic descriptions that we had become critical towards as students. Arguably, a different way (and one to strive for) would be to consider notes as conversations that underscore *living theory* in similar ways as all other facets of life. To conclude, Tewa scholar Gregory Cajete said, '*seeking life* was the all-encompassing task' for Indigenous peoples (2000: 2) and continues to be, as James Herbert Thompson guided me.

Acknowledgements

Notes

1 Gwich'in trappers would place a willow stick at the muskrat house to illustrate that the muskrat house has been discovered and will be trapped the next day(s) as evident in Gwich'in Elder Annie (Koe) Benoit account of the ratting season (in Leslie McCartney and Gwich'in Tribal Council 2020: 128).

2 2006 would be the last time that I spent spring at *Nagwichootshik* and in 2011 I also stayed around *Nitainlaii* after Gwich'in Elders forewarned that *Nagwichootshik* would be flooding again. Unwavering, Neil Colin went alone to his cabin and had to be helicoptered out of his cabin after the Delta saw the worst flooding in years.

3 Caribou are an integral part of Gwich'in lives. Gwich'in Elder Emma Kay recounts to Kristine Wray and Brenda Parlee that '[Long ago] Caribou used to be like us… and they say they changed. That's why they say when you kill caribou and you cut the legs off like that—right in here [points to inner mid-forearm], there's some meat—that is human meat. My grandmother showed us that. You cannot eat that. When you kill caribou, you work with that head—there is glands in there that is human glands, they say. I believe that' (2013: 76). Like other Gwich'in Elders, Emma Kay has shared this story also with me at various times throughout all these years and adds that this why the caribou knows what humans are thinking. The significance of caribou is also reflected in the flags of the Gwich'in Tribal Council, the Gwich'in Nation, and various other Gwich'in political bodies. Aside this spiritual and political connection, caribou form the most important food source for Teetł'it Gwich'in. To illustrate this point, when Gwich'in speak about meat they refer to caribou meat. Throughout all these years working with Gwich'in, many conversations lead to caribou and whether there are caribou around. Subsequently, I have accompanied various Gwich'in on caribou hunting at various seasons.

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8   Learning with trees and young people in northeast Scotland

Elizabeth Curtis, J. Edward Schofield, and Jo Vergunst

Introduction

This chapter explores ideas of landscape and learning, key concepts in Tim Ingold's work in and following *The Perception of the Environment* (TPE). At the heart of the chapter is thinking about and with trees, which we are presently collaborating on in research about young people's relationships with trees, woods and forests – that we refer to as 'treescapes' – in northeast Scotland.[1] Our key question is how to better involve children and young people in creating and caring for treescapes, especially in the present circumstances of anthropogenically-driven climate change and habitat and species loss. We hope that young people will be able to look after their environment and grow more beneficial treescapes than are often found today, and in turn that treescapes will be better able to support the range of life and ecosystem services and physical processes that are needed. For this, we will require thinking resources that are different to the logic underpinning modernity that has brought us to the current environmental crisis.

Our aim is to explore what Ingold's writings and the teaching practice that we have shared with him over the years at the University of Aberdeen,

have to offer as a starting point. First, we explore how trees and tree thinking are used in TPE, and we draw on both Ingold's critique of tree models for descent and genealogy and his discussion of tree growth as an inhabitation of the landscape. Second, we consider how young people and their schools can 'find their curriculum' outdoors in treescapes, rather than only following pre-determined forms of learning in classrooms. Thirdly, we argue that an understanding of environmental history could open new possibilities for curriculum learning and engagement with the temporality of treescapes. While the term 'treescapes' was given to us as part of our research programme, it becomes a way of thinking about the significance of trees in their environments and the relationships they generate.

Thinking with trees in *The Perception of the Environment*

TPE sets out a relational approach to the environment, in which living things are understood to become as they are by way of the relationships in which they participate. While trees in themselves exemplify multitudinous ecological processes, in 'Ancestry, generation, substance, memory, land', the relational approach is set against what Deleuze & Guattari (1988: 18) describe as 'arborescent systems'. In the latter, the tree is the archetype for 'hierarchical systems with centers of significance and subjectification, central automata like organized memories'. Ingold identifies this form of tree thinking with what he terms the 'genealogical model' – the means of tracing ancestry through lines of descent that is common in the West. The anthropologist's kinship diagram becomes an 'abstract, dendritic geometry of points and lines' showing that one person is descended from another, reversing the upward and outward growth of the tree in favour of the downward falling of kinship descent (Ingold 2000: 134–5). Here, the tree, as a way of thinking, conveys predetermined relations. A person is defined by their ancestors and has no apparent growth or development in their own environment. The model also sets the grounds for studies of human evolution as a search for origins – biological and cultural – and implies a hierarchy from simple or primitive to complex forms.

It is something of a provocation to think negatively of a tree in this way, modelling a set of connecting points that generate hierarchy. Ancestry itself, Ingold argues (again following Deleuze and Guattari), would be better considered through the metaphor of the rhizome, 'a dense and tangled cluster of interlaced threads or filaments, any point in which can be connected to any other' (Ingold 2000: 173). The tree in the genealogical model is a centralising force that draws resources into its body and grows through a series of splits, whereas the rhizome has no clear centre or boundary and spreads, entangled, in all directions.

Elsewhere in TPE, however, there are ways of thinking about trees in the relational model too. In 'Building, dwelling, living: How animals and people make themselves at home in the world', Ingold presents an oak tree through the work of Jacob von Uexküll. The tree is present as *Umwelt*, or lifeworld – 'the world as constituted within the specific life activity of an animal' (Ingold 2000: 218) – for many different animals, a fox, ant, owl, beetle and others

who live in the oak in their different ways. This is true for humans as well, Ingold argues, in that just as the tree is a dwelling place for many organisms, so too is a house built by humans, often despite the best efforts of their owners. All such dwellings, whether tree or house, 'have life-histories, which consist in the unfolding of their relations with both human and non-human components of their environments' (Ingold 2000: 233). Ingold's conceptual point is that the conventional divide between the 'biological' impetus behind animal houses and the 'cultural' or historical drive of human architecture is dissolved because neither animal nor human dwelling is prefigured in nature, or the mind, before its realisation in a continual flow of intentional activity.

This moves us from the tree as a metaphor to the tree as an organism and environment. Indeed, trees are a good example of being *both* organism and environment, or both 'thing' (or object) and landscape, at the same time. The tree is a living being itself and at the same time part of or even the entire lifeworld for those who live in and around it. This is the case for many other forms of life too, no doubt, but it challenges the distinction between landscape and object that is often taken for granted. In that way of thinking, landscape is the background to life and has come to be constituted as a visual scene to be appropriated in a gaze (Olwig 2002). Objects in much of modern life are likely to have no particular connection to the landscape, the materials of which they are made or the context and action of their use. Ingold has made much of this theme following TPE, for example in exploring the histories of materials as an alternative to the materiality of objects (Ingold 2007), and surfaces as a site of 'haptic vision' – again dissolving the distinction between object and landscape (Ingold 2017a). We consider these ideas in relation to trees that children interact with outside, but also in the detailed examination of seeds and pollen using microscopes in the classroom, where the lifeworld of the tree is, in a sense, encapsulated in its tiniest parts.

Considering trees as material entities that are at once an aspect of landscape and a form of life within it fits well with our current research into young people's learning with trees and woodland landscapes. In a similar way, we want to think about environments for learning as a topic in itself. In Ingold's TPE chapter, 'Making things, growing plants, raising animals and bringing up children', the analogy of developmental growth in farming, gardening and so on, is extended to children as a counterpoint to the concept of domesticating nature. Raising children is often 'regarded as a process of socialisation whereby approved norms and values are superimposed upon the raw material of new-born human infants' (Ingold 2000: 107). Instead, we might try and understand the 'developmental conditions under which "growth to maturity" can occur' (Ingold 2000: 105). For this task, understanding both how growth occurs and how such conditions have changed in the past will be important.

Listening to 'voices of the future' in treescapes

All this is relevant to us by way of our concern with the histories and future of landscapes in Scotland. As researchers, we have different disciplinary

backgrounds but shared experiences in research with communities and young people. Curtis works in Initial Teacher Education with a focus on outdoor education, heritage and archaeology. Schofield is a physical geographer and uses pollen analysis to reconstruct past environments. Vergunst is a social anthropologist with interests in community relations with landscape in Scotland. Together with archaeologist Colin Shepherd and storyteller and educator Grace Banks, we have all contributed to the Bennachie Landscapes Project, a long-term community-led research initiative on landscape history in Aberdeenshire (Oliver et al. 2016, 2022). A feature of this research is co-production, whereby university and community participants work together to design, carry out and create outcomes from the research (Graham & Vergunst 2019). At Bennachie, outcomes have included community-led publications, public events, exhibitions and a digital app as well as academic writing, all of which have been based on shared learning outdoors in the landscape and with an emphasis on low-tech and accessible methods (Vergunst et al. 2019). Young people from primary and secondary schools, along with their teachers, showed that they are well able to take part in the research and contribute to outcomes including writing (e.g. Teachers and Pupils of Keig School 2013; Curtis et al. 2019).

As a forested landscape, and understood through co-production, Bennachie was our inspiration in joining a new research project, 'Voices of the future: collaborating with children and young people to re-imagine treescapes'. The overall aim of the project is to explore children's and young people's knowledge, experiences, and hopes regarding trees alongside scientific knowledge of how trees adapt to and mitigate climate change. The wider research programme in which it sits, UKRI's 'Future of UK Treescapes', seeks to inform future expansion of treescapes in the UK and their resilience to climate change, pollution and pathogens. We argue that children's and young people's voices should be integral to this because they will be living with decisions made today about treescapes and, indeed, will be needed as adults to reverse declines in biodiversity and environmental quality created by current and previous generations. Where mainstream forestry economics has resulted in UK treescapes significantly made up of conifer monocultures that do relatively little for biodiversity and the communities in which they are sited, alternative ways of thinking about treescapes are sorely needed.[2] The current Scottish Government's Forestry Strategy 2019–2029 indicates six priorities for forests and woodlands: sustainable management, expanding their area, efficiency and productivity, adaptability and resilience, environmental benefits, and 'engaging more people, communities and businesses in the creation, management and use of forests and woodlands' – all underpinned by a targeted rise in annual woodland creation from 10,000 ha to 15,000 ha by 2024/25 (Scottish Government 2019).

If there are to be more trees, and if people should be more involved with them, we might look to models of co-production in research as a basis for these different futures. The goal of co-production would not simply be to transmit knowledge about trees from those who have it to those who do not

but for all involved to take part in 'creating living knowledge' as Facer and Enright put it in a review of techniques for collaborative research (2016). From this perspective, collaborative research is a tensioned and engaged practice, in which communities both have a right to contribute to knowledge that affects them and also have knowledge, ideas and experience that enhances the research itself (2016: 90). We can also connect back here with Ingold's (2017b) concept of education as an aspect of developmental growth; in other words, where knowledge is grown up rather than handed down.

Our task is to explore some of the ways in which this might happen in northeast Scotland. We are working in urban Aberdeen and rural Aberdeenshire, with the contention that both urban and rural treescapes are relevant to their immediate communities and wider society. For schools, treescapes offer a range of opportunities for learning about both 'things' and 'landscapes', or in other words trees, the environmental processes of which they are a part, and other aspects of the curriculum together. But to do this, we need to rethink the notion of curriculum itself, away from a body of knowledge to be transmitted and towards an emergent capacity of education. We also need ways of connecting between the past, present and future of treescapes, and that will require ways of involving young people with the temporal aspects of their environments.

Finding and enacting the curriculum

With teachers and children in primary schools, we are exploring how working with trees contributes to children's experiences of school and learning. We are working in different contexts in Aberdeen, including the planting and nurturing of a small wood in a school playing field and developing tree-based learning in another setting between school grounds and a nature reserve. Running through all this is an interrogation of the idea and practice of the school curriculum, specifically regarding interdisciplinary learning and learning for sustainability in schools, both features of Scotland's Curriculum for Excellence.

We argue that further thinking tools are needed for a critical approach to school curricula in the context of the Scottish education system. Drawing on the education theorist Gert Bielsa (2016), curricula can be understood as part of a pre-existing social order through which engagement with a range of disciplines and sets of knowledge about the world enables children to make sense and understand physical, temporal, spatial, philosophical and creative aspects of the world around them. The curriculum can also be thought of as society's means to identify, codify and pass on knowledge and skills of value to society now and in the future. It embodies sets of power relations and holds within it unspoken hierarchies of knowledge and values. In TPE, Ingold challenges the structuralist approaches to anthropology which looked for pre-existing social orders, frames of reference and language to make sense of the 'formless and continuous flux' of everyday experience (Ingold

2000: 158). We could argue that structuralist approaches still dominate the ways in which school curricula and schooling itself are understood and experienced.

Our aim is to start exploring Scotland's Curriculum for Excellence (CfE) from this perspective. CfE is built on curriculum guidelines which are set out as lightly framed 'experience and outcomes' and 'benchmarks' (Education Scotland 2022a). The design of CfE does not specify how individual teachers should design learning contexts to meet the learning outcomes, nor does it specify content in a detailed way. Teachers are encouraged to make learning relevant to pupils through the development of learning contexts that reflect the everyday lived experiences of children including school grounds and the local area. This potentially provides an alternative model for how school curricula can work, as less of a structural imposition and more of an emergent process for learning. In practical terms, such flexibility enables us as researchers to work alongside and be part of the everyday experiences of children and teachers with trees, in which teachers still feel they are meeting their curriculum responsibilities. In what circumstances can schools effectively create learning experiences that involve treescapes? (Figure 8.1)

One Aberdeen primary school with whom we are working was connected through the city council to a tree planting programme run by NatureScot, Scotland's national government-funded agency for nature and the environment. The programme invites schools and communities to grow a 'Wee Forest', which is a small but densely planted plot of around 260 m² (roughly the size of a tennis court) with native species used. As an initial knowledge exchange activity in March 2022, we spent time with various classes in the school supporting them with their Wee Forest planting, along with a Forest Schools educator Grace Banks. Together, we examined the soil prior to planting (pH testing, colour and composition), helped plant the trees themselves, and supported some initial monitoring exercises on tree identification, growth and associated wildlife. The design for the plot was selected from ideas created by the children, with a path from the edge and an inner circle through the trees. In the classroom, we used microscopes borrowed from our university to look at seeds and introduce pollen analysis, as discussed in the next section of this chapter.

All of the children in the school will now hold responsibility for looking after the developing woodland. Over the coming years, we hope to follow their experiences of the woodland in their everyday lives, and how, through weeding, watering, foraging in, playing in and measuring the Wee Forest, children learn about trees as living things. What values will they ascribe to these and other trees now and in the future? The children's enthusiasm for being outside seemed clear and we had many conversations with them during the course of the activities about the different kinds of trees and what they would be like in the future, as well as other things they found in the soil and what it was like to be a scientist (e.g. using the microscopes). There was perhaps a certain freedom for both teachers and pupils in not following a

Figure 8.1 The Wee Forest in May 2022, two months after planting. Photograph by the author (J. Edward).

defined subject curriculum area, and being able to move from science-focused discussions of tree and pollen identification to more imaginative and personal responses.

As noted, the Scottish Curriculum for Excellence sets out quite wide parameters for what should be learned by pupils, and these are conveyed in terms of experiences, outcomes and benchmarks. Our focus here is the stage for younger pupils before the Senior Phase begins in year 4 of secondary school. The pre-senior curriculum is known as Broad General Education (BGE) and is split into various curriculum areas and five levels of attainment (Early level and then levels 1–4), which pupils progress through individually (Education Scotland 2025). This means that pupils in a single class may be working at different levels within a curriculum area. At primary school, classes are quite often mixed between two year groups as well.

To take a specific example from the CfE relevant to our work, in the list of Experiences and Outcomes expected for level 2 Science, we find: 'I can identify and classify examples of living things, past and present, to help me appreciate their diversity. I can relate physical and behavioural characteristics to their survival or extinction'. One of the corresponding Benchmarks associated with this E&O is: 'Classifies living things into plants (flowering and non-flowering),

animals (vertebrates and invertebrates) and other groups through knowledge of their characteristics' (Education Scotland 2017. The scope of the actual teaching that could take place to provide these experiences and achieve the benchmark could be very wide and we might imagine that almost any activity around identifying species and understanding their ecology would fit. Encouragement to engage with outdoor environments, and thus living plants or animals in their habitats, comes elsewhere, for example in the form of a separate policy document 'Curriculum for Excellence Through Outdoor Learning' (Learning and Teaching Scotland 2010) and Education Scotland's more recent Learning for Sustainability initiative (Learning for Sustainability Scotland no date), but connections with outdoor learning are harder to discern in the BGE Science curriculum documents. We are finding that this kind of learning is up to schools and individual teachers, which vary considerably in terms of resources and opportunities.

When we began talking to the Wee Forest primary school teachers about our work, they were keen to connect what we could do together to the CfE. What was surprising to Jo Vergunst and Ed Schofield, but less so to Elizabeth Curtis as the experienced scholar in this field, was that they turned not to specific curriculum areas such as Science, but to Interdisciplinary Learning (IDL), which in the CfE is complementary to the curriculum areas. IDL is one of the four key contexts of the CfE, alongside curriculum areas, the ethos and life of the school, and opportunities for personal achievement. Formally it refers to 'space/opportunities that enable children and young people to make connections between different areas of learning' (Education Scotland 2025), emphasising different perspectives and working with partners.

This allowed the teachers to justify the time spent with us by fitting it into the CfE. In an interview in June 2022 with teachers who were involved in planting the Wee Forest, we asked how in the future children's engagement with the wood could link to the curriculum or contribute to interdisciplinary learning. They were uncertain as the children had already covered curricular areas in preparing for and planting the forest. Tree-based learning, they suggested, would happen outside of the formal curriculum, and what would be learned would, as Biesta suggests, be emergent, and identified by the children themselves through their personal learning journals. Despite the teachers' uncertainty, this is very much in the spirit of IDL and moves beyond the narrow idea of the curriculum as a list of topics to learn. In doing so, we also hope to move away from a focus on what often feels like the iconic moment of a child planting a tree (of which many images exist online in environmental education), where the child is made to appear as a symbol of environmental care. Instead, we intend to consider the value of learning in the longer term with a local environment. With the formal curriculum out of the way, and the trees planted, perhaps the real learning can begin.

Within educational research, Gert Biesta has over many years challenged teachers and other educators to question the purpose of schools and schooling, and that answers could impact the ways in which school curricula

are designed and implemented. Like Ingold (2017b), Biesta is troubled by normative practices in relation to schools and schooling and proposes an eco-logical approach to education. He argues that education functions in three domains: the acquisition of knowledge, skills and attitudes (qualification), the enculturation into society's ways of being and doing (socialization) and the subjectivity of those being educated, involving emancipation, freedom and responsibility (subjectification) – though these are underpinned not in reproducing what already exists, but in 'new beginnings and new beginners' (Biesta 2016: 4). Such an orientation, Biesta argues, 'is not just about how we can get the world into our children and students; it is also (...) about how we can help our children and students to engage with, and thus come into the world' (Biesta 2016: 5). This is a theme that Ingold again takes up in *Anthropology and/as Education* (2017b), drawing on the distinction derived from the Latin of *educare* – education as raising children to learn cer-tain forms of knowledge – and *educere* – education as leading one out into the world.

Biesta further recognises the tensions that lie between the domains of qualification, socialisation and subjectification, and this is also a key question for us. In addition to providing qualifications to learners, should the role of education be to enculturate learners into a set of social norms? Or should it enable subjectification, the constant process of becoming a person – that Biesta suggests is 'not entirely determined by existing orders and traditions' (Biesta 2016: 1)? Where institutions 'want education to be strong, secure, predictable, and (...) risk-free at all levels', Biesta argues that education should be 'weak', in a good way: not predictable, without narrow definitions of success, and open to question (Biesta 2016). Our hypothesis is that emer-gence may be a more nuanced way of understanding the experience of chil-dren and young people in teaching situations rather than the hierarchical developmental models which underpin most school curricula (Figure 8.2).

Engaging young people in woodland history

Our third and final task here is to open up questions of time and history. We seek to integrate the science of woodland and environmental history into our critical approach to the curriculum, as a way of improving science learning and contributing to treescapes in the future. What approaches and method-ologies can help us? In the following paragraphs, we outline a case study of what scientific learning about treescapes could mean, and it is one grounded in history.

The starting point is a recognition that the climate system and its compo-nent elements – the atmosphere and cryosphere, and the terrestrial biosphere and oceans – are rapidly changing at an unprecedented rate as a result of human influence (IPCC 2021). Climate change is indeed part of the Science CfE, but our challenge is to make this real and meaningful to young people, going beyond the assertion that climate change simply exists

Figure 8.2 The Wee Forest in June 2024, two years and three months after planting. Photograph by the author (J. Edward).

and into the ways in which knowledge is generated. Scientific understanding of climate change is heavily underpinned by 'baselines' generated through research conducted in the palaeosciences. This is an interdisciplinary subject area covering aspects of biology, geology and geography, that utilises the contents of natural archives – such as dust and gas trapped in ice cores, and microfossils preserved in lake sediments and peat bogs – to generate long-term observations of past climate and environmental change at a range of different temporal and spatial scales. As the future custodians of the planet, it is important that young people develop an understanding of rates and patterns of past environmental change that extend beyond that which can be directly observed over one or two human generations. This potentially enables better informed and more widely-understood decisions to be made regarding strategies that will be required to mitigate against climate change (IPCC 2022), and in situations where the immediate goal is to protect, conserve, manage or restore ecosystems to a perceived state of 'naturalness' or 'wildness'. The critical perspective of palaeoscience means asking 'when' an ecosystem is being restored, not just 'what'.

Palaeoecology, and in particular pollen analysis, have been central in the development of our understanding of vegetation history – including the

dynamics of British woodlands and their component tree species over the period since the retreat of the last (Devensian) ice sheet, beginning approximately 14,000 cal. BP (calendar years before present). Pollen analysis – also often referred to as palynology – is a technique for reconstructing former vegetation by means of the pollen grains and spores those plants produced (Fægri & Iversen 1989). In turn, this allows secondary deductions to be made regarding climate change and the past (inter)relationship between people, their animals, the environment, and the landscape. The method is based upon the extraction and analysis of sub-fossil pollen grains and spores from stratified organic and anaerobic deposits – such as peats, lake muds, and (selected wet and acidic) soils. The technique is 'undoubtedly the most widely adopted, and arguably the most versatile' of all the palaeobiological methods currently employed in the reconstruction of Quaternary environments (Lowe & Walker 2015: 183), with studies having been conducted for over a century (Edwards et al. 2017). Consequently, the postglacial woodland history of the British Isles – and within this, Scotland – is now very well-known (Birks 1989; Tipping 1994; Edwards & Whittington 2005). Broadly speaking, pollen analytical studies for the British Isles show how near-complete coverage of woodland, which was in existence c. 6,000 cal. BP has gradually been replaced by a mosaic of more open vegetation units (i.e. farmed landscapes, grasslands, heaths and moorland) largely as a consequence of clearance to make space for agriculture, industry and human settlement.

Pollen analysis, and with it vegetation history, is often taught to students in Higher Education Institutions (HEIs) as part of a wider package of teaching and learning related to Quaternary environments. There are, however, significant (mostly logistical) barriers and challenges to the adoption of the subject at earlier educational stages (i.e. in schools). The technique requires access to specialist equipment and facilities. A sediment coring kit is required to retrieve sample materials; preparation requires access to a laboratory with a fume cupboard and treatment with various chemicals; and a high-magnification (x100–1000) binocular optical ('light') microscope is needed for sample analysis and counting (Moore et al. 1991). The latter stage in the process also requires some initial training in the identification of the microfossils and/or access to reference materials. Certain practical aspects of the method may be accessible to young people where schools can pair up with HEIs (as we are doing in the 'Voices of the Future' project). For instance, demonstration in the use of sediment coring equipment and microscopes could take place in the field and classroom respectively, with some level of practical engagement possible for the pupils where there is close supervision. Exercises might be designed for the classroom that (at least partly) simulate the palynologist's other tasks, such as the collection and interpretation of data. In terms of the knowledge base required for teaching this subject to young people, literature on vegetation history is already widely available, though most of this is currently to be found in specialist textbooks or journals.

In the introduction to this chapter, we noted Ingold's emphasis on embodied knowing and being in the world encompassed in the practices of 'haptic vision' and understanding trees from the perspective of the history of materials. This brings a different approach to setting up a dialogue between children's experiences of being with trees and understanding them from a scientific perspective. From the direct experience of preparing the ground, investigating the properties of the soil, digging holes and physically planting trees in the Wee Forest, children have felt, smelt and noticed the properties of the earth, the features of different tree seedlings from the tips of the roots to the tops of stems that they can still look down upon for the time being. Looking at seeds and pollen, children become aware of the textures and shapes that form the earliest stages of the tree's life, as they handle the microscopes. They have first-hand awareness of the possibilities of types, forms and functions of mixed woodland and its understorey and lived experience of the transformation of the playing field to a forest (which of the trees will grow tall and which will form shrubs underneath, we asked). Through these combined sensory practices, stories of trees and the environment are woven into children's life histories.

It is this lived experience which creates a meaningful context for Ed Schofield to bring the pollen and seeds from the same plant species found in local ancient peat, microscopes and white lab coats to the classroom. Encounters with Ed as a scientist with a specialism, palynology, opens up the temporal aspects of trees and woodland and discussion about how learning from the evidence of ecologies and environments in the past helps us to understand the impact people have on what grows, survives and nourishes other organisms including humans. We could, if we wanted, say that this very much 'hits' the Science benchmarks in CfE, and we found that using practical learning enabled much more advanced science to be introduced to younger children than might otherwise be the case. But that is not the point, ultimately. More important were the children's experiences of the Wee Forest, which provides a known context for identifying the shape, size and texture of pollen and seeds which survive in centuries-old peat cores, connecting past environments with the present and enabling, perhaps, the future to be imagined differently. Through working directly with Ed, children are learning the practices of scientific enquiry through the collection and identification of pollen, through to the reconstruction of past landscapes in a way that will continue to grow in their memories, experiences and plans for the future.

The emergent curriculum of trees

In all this work, we explore the possibility of going beyond schools as places of curricular subject learning in the narrow sense. Instead, we seek to understand the role of trees in the everyday being-in-the-world of children and young people, and their values and hopes for learning for sustainability. Treescapes could provide the time and space to acknowledge what unfolds,

to notice entanglements of learners, environments, teachers and curriculum and surface the tensions between the intentions embedded in the curriculum and the everyday, attentive lives of children and their teachers.

In TPE, Ingold sets out to offer an alternative to what he terms the 'grand narrative of the human transcendence of nature (… .) as the counterpart of the self-domestication of humanity in the process of civilization' (Ingold 2000: 77). This may seem far removed from schools and curricula, but if education is viewed as a cultural practice of socialisation, it plays a part in the domestication of children and young people into existing societal roles. To realise the potential freedoms embedded in Biesta's domain of subjectification, Ingold's development of a dwelling perspective offers a different framing of what schools are for and the relationships between learners, teachers and curricula. As he puts it, 'Since the person is a being-in-the-world, the coming into being of the person is part and parcel of the process of coming-into-being of the world' (Ingold 2000: 168). As educational researchers, we can explore and understand how the curriculum could be more than pre-existing guidance, standards or directives, and can be brought into being by the actions of teachers and learners that emerge in specific environments. An 'emergent curriculum', therefore, does not make learning happen, but is rather the joint endeavour of learner and teacher in particular settings to create the conditions which make learning possible.

Notes

1 This research is funded by UKRI grant NE/V021370/1 'Voices of the Future: Collaborating with children and young people to re-imagine treescapes', part of the research programme 'Future of UK Treescapes'.
2 Conifers make up 74% of forests in Scotland and 51% in the UK as a whole, with a majority of Sikta spruce within that (Forest Research 2021: 16, 34).

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9 Corresponding with matters of pedagogy
Bauhaus, Black Mountain and beyond

Judith Winter

> Life is change—day and night, cold and warmth, sun, and rain. It is more
> in-between the facts than the facts themselves… I believe it is now time to
> make a similar change of method in our art teaching—that we move from
> looking at art as a part of historical science to an understanding of art as
> a part of life.
>
> <div align="right">Josef Albers Art as Experience—12, October 1935</div>

Ingold's form of philosophical anthropology offers a compelling way of
thinking about collective futures and how they are transformed through
the educational environment. What he offers is a way to imagine a moment
beyond our present situation, focusing attention on the ecology of practice
and the dynamics of teaching. Ingold's spotlight on ways of knowing and
knowing from the inside prompts us to carefully pay attention to matters
of pedagogy: the way knowledge grows in people and places, and in corres-
pondence with the past, present and future.

What Ingold reveals through this life philosophy is ways beyond our
present institutional impasse by using the cracks in regulatory systems to
find ways to open them and move through them. He describes a 'participa-
tory dialogue… corresponding with oneself, with others and with the world

(Ingold 2011:241) As he states: 'The key to correspondence lies in the twin principles that life is not confined to fixed points or locations but lived along lines, and that as they go along together these lines—rather like melodies in musical counterpoint—continually differentiate themselves from within the texture of their polyphony' (Ingold 2021:6).

This shift in pedagogic thinking and educational priorities is urgently needed. It asks how we might re-steer education toward a different future by returning teaching and research to something that addresses students' actual needs; a learning environment for the common good. This was the basis of Ingold's eponymous lecture at the Bauhaus for the 100th Anniversary as part of the Festival School Fundamental. Where he presented a challenge to the present Higher Education system by questioning educational priorities that have emerged over the last 15 years. Ingold addressed directly how the 'engine of economic growth collides with the realities of climate change' and 'a world where ideas are moving and meeting on an unprecedented scale' (Ingold 2019) there was a clear sense of déjà vu as those present – students, philosophers of education and Bauhaus scholars – responded to calls for an education that reintroduced the principles of 'freedom and trust'. As Ingold described: 'real freedom is not something one *has;* it is not a property or entitlement. It is, rather, the condition in which one *is;* in which is founded one's very existence. It is a condition that is fundamentally open to others, and to the world, rather than circumscribed by pre-existing interests. Real freedom rests on a willingness to relinquish the comfort of established positions, to take the risk of pushing out into the unknown where outcomes are uncertain and destinations yet to be mapped' (Ingold 2019).

The stage, where this presentation took place, was originally created for social and public gatherings by Bauhaus faculty and students in 1926. The location was a significant touchstone for my research that focused on the correspondence between past, present and future and whilst I was interested in the problematic relationship between the university and art school; the common thread was the way we listen again to the grassroots of practice to re-ignite debates about how we come together in difference, and differentiation. The core question was what kind of educational environment might be needed for emergent generations living in an epoch of extreme uncertainty.

It occurred to me then, that for countless artist émigrés forced to search and set up new lives elsewhere due to political conditions, Ingold's theories still resonated. Art is a living practice, always moving forward and responsive to changing conditions. It is in this art school context that the pioneering artist educator Josef Albers, a key *Bauhäusler,* whose words I have chosen to head this chapter, expressed his aversion to forms of retrospection and the taxonomic impulse to classify and define rather than bring things to life (1924). Albers believed that the next generation faced a stark choice, either to remain mired in a dead past or to focus on the way we handle and navigate change. Experimentation in these terms was an urgent and essential tool to recalibrate and navigate things to come.

What may echo and reverberate today across our universities and art schools is the way that those educators who independently created their own constellations of practice were amongst the first generation of students from different walks of life drawn together in the aftermath of the First World War, economic crisis and technological revolution that swept across the world. As such, many of the schools' participants were deeply suspicious of any educational models that were shaped by external forces (economic, political, ideological); they were also wary of any approach that was overly individualistic or esoteric; what they were seeking was a way to build a different future for generations to come. Albers's experiences in Germany in the interwar period convinced him that mass society was more confused than ever and that profiteering, and tradition were turning out a future of administrators, bureaucrats, and civil servants instead of creating the conditions needed for perceptive and empathetic citizenship. 'Europe', he wrote in 1924, 'is on its way to becoming a museum with nothing but servants, leaders, clerks, conservators, and restorers' (Danilowitz 2009:23).

Ingold reminds us that at the core of his approach to anthropology is informed by his deep interest in ontogenesis that is informed by music and the arts; in particular the 'creative credo' of another Bauhaus Master, the artist-educator Paul Klee, who repeatedly insisted and demonstrated through his working life (Bauhaus, Weimar & Dessau 1921–1931) the processes of genesis and growth that give rise to forms in the world we inhabit are more important than the forms themselves. As Klee wrote in his pedagogic sketchbooks: 'Form-giving is movement, action. Form-giving is life' (Klee 1973: 269). It is a philosophy of art that does not, in other words, seek to replicate finished forms that are already settled, whether as images in the mind or as objects in the world. It seeks, rather, to join with those very forces that bring the form into being (Ingold 2010: 2). This reading of Klee's pedagogic vision offers an important counterpoint to our current educational and institutional practices. It seeks to challenge the way we canalise the education of individuals rather than help them find their calling. It also questions the impulsion to pre-determine outcomes or rush toward premature specialism.

One significant question that most anthropologists have tended to ask me about my approach to research: *Un-learning Bauhaus: Searching for ways to imagine and transform collective futures* undertaken as a doctoral researcher in KFI (Knowing from the Inside, Tim Ingold, PI and my doctoral supervisor), is why listen again to these pedagogic ideas of modern art school reform – what has it to do with anthropology or our collective futures? Those working in the arts tend to ask what has the Bauhaus to do with anthropology and what else can be said about the school. It is after all an overmined subject, how does it contribute to and question the current crisis in education or challenge current social, aesthetic, and educational norms along with the instrumentalization of knowledge on which they rest? Colleagues teaching in art schools today seem more concerned that returning to the pedagogic practices of the modern art school is somehow a turning back the clock. In response to these questions herein, I outline the continuum of matters of

pedagogy that connects Ingold's concern with education as a generative force and focus on three core ideas: experimentation, experience, and ways of *un-learning* or undoing assumptions. I show how carefully listening again to the Bauhaus pedagogies in relation to Ingold's ideas may offer some new ways to listen to both the warnings and possibilities in the past. Providing the tools for both imagining things not as they are but as they could be.

Crossing disciplinary boundaries

I had been working in the arts since the mid-1990s and was the inaugural curator for MIMA (Middlesbrough Institute of Modern Art and Head of Arts at DCA (Dundee Contemporary Arts) from 2007–2012 before joining KFI. Through my experience of curation and being taught and teaching in art schools, I witnessed how in educational practices today, the trend is to define and turn experience into material for analysis and to measure students' success based on short-term goals and outcomes. This is problematic for all educational fields, but it is particularly challenging for artists and designers whose practice often questions structures and orthodoxy or proposes new ways of seeing and knowing that respond to the present, but also imagine and speculate about things to come. Moments that ought to lift students, and encourage them to experiment and challenge normative values, tend instead to weigh heavily. The modularisation of the curriculum focuses its attention on assessment outcomes and canalises learning; students spend more time wanting to know the correct methodology to unpick theoretical secrets. The meritocratic system turns attention to how to ensure that their practice meets the required standards – as if that was the only aim of education. Where was the time and space for real discussion about plays, poetry, music, performative practice, and philosophy – things that would light the fire of curiosity and fuel the imagination? Part of the main issue is that the systems that were put in place to support the logistic changes as art schools were merged with universities also reveal a very different philosophy of education and one that I have previously explored in the text, *Searching for the ethos of a lost art school* (Winter 2022). Whilst art schools attempt to retain or reclaim greater autonomy the environments are no longer designed by the artists and architects but managed through centralised departments and the learning environment has been radically altered in the process.

What I argue is that our approach to education is one of our own making and it is also one that we can redraw if we simply begin by asking what is education for and what urgencies we need to address. Ingold (2018), in his forward to the new edition of Roy Wagner's (1975, 1981, 2016), *The Invention of Culture* prompted many of those working across fields of anthropology, art, philosophy of education, and humanities that culture to listen again to Wagner's words – that our futures are transformed from the dialectic between the individual and the social world and the relationships between invention and convention, innovation and control. Making central the role of the imagination and reminding us that humans have the capacity to re-draw and shape alternatives. The educational environment plays

a significant role by creating a 'place of gathering, not just for socialization, in time off from study, but for deep conversation—a place to which students and teachers, researchers all, are drawn by their love of learning and desire to study' (Ingold 2019).

Perhaps most important of all is how Ingold's approach to teaching has nurtured growth amongst the cracks in our regulatory systems and provided some space for future generations to renew the common bonds that exist across the arts, humanities and environmental sciences, to consider a different way of working together. He argues that the future is something that requires dialogue, but not homogeneity. To learn, we need differentiation; 'participants, coming with different experiences and perspectives on things, must be ready to move on from where they stand' (Ingold 2019: 51) So too, there can be no outline for the future – for what is to come does not carry the imprint of any legitimating authority. This also accords with the pedagogic theories of Paul Klee and those artist-educators who remind their students time and again, that drawing, despite what it might say in any dictionary you care to consult, has very little to do with tracing or representing things as they are. It is not the outline that already exists in the world that matters. Drawing is in these terms a metaphorical tool, and what it tells us right from the outset is that there are no outlines to things at all unless and until we choose to give them legitimacy. Even this legitimacy can only ever be provisional (Archer 2007: 6).

My aim, therefore, in this chapter, as elsewhere (Winter 2019; 2022), is to connect those working in the social humanities, with this educational ethos of modern art school reform; that spotlights the role of the imagination, sense perception in the process of *un-learning* and transforming futures.

Listening again to the Bauhaus and matters of pedagogy

The Bauhaus, as Stephen Madoff (2009) reminds us, represented the last systemic shift in art education, which is why it is also such a significant touchstone for both the creative community and those interested in *things to come*. The core premise of my research is that we can learn from the ways similar challenges to those we face today have been addressed by our predecessors. The questions they asked are ours as well: how do we see, handle, and challenge our assumptions? How do we navigate the speed of change, both technological and scientific? How do we shift our perspectives and make informed judgements that are responsive to changing conditions?

The narrative of Bauhäusler (those directly associated with the school), is one of resilience and continuity, revealing how ideas collide and fuse across generations and how this creates a constellation of practices and feeds into the artistic ecology. It is an approach that enabled individuals to find their voice and way of working that was carried forward in new situations. Art, like life, is then always contingent, unpredictable, and dynamic and this,

I propose, is what makes the pedagogic ethos potent and vital, particularly at times of uncertainty.

The school was thus set against the backdrop of the social and political traumas of Europe at that time, and its entrants were navigating a seismic shift in social and political life (Forgâcs 1995). Walter Gropius described the school's dynamics as a 'whole staff of collaborators and assistants, people who would work, not as an orchestra obeying the conductor's baton, but independently, although in close co-operation to further a common cause' (Wingle 1969:14). As in all institutions, the assembled staff and students did not represent one singular educational framework, method, or model. The atmosphere was dynamic and responsive to interpersonal, social, economic, and political conditions. The orchestration of this kind of educational environment requires an understanding of how to bring things together, a certain spirit of camaraderie, and a sense of belonging that is not easy to define.

Acknowledged as a crucible of modern art education, the Bauhaus's pedagogic approach thus replaced both the traditional academic system and vocational craft training. It is no accident that all three directors of the Bauhaus were architects – Walter Gropius (1919–28), Hannes Meyer (1928–30), and Mies van der Rohe (1930–33). Most significantly, they were architects interested in ways of working that would address the speed of change as they navigated modernity. The character and dynamics of the school were then both situational and responsive. It existed for just 14 years in Germany, in three locations: Weimar (1919–1925), Dessau (1925–1931), and Berlin (1932–1933); thus, its pedagogic attitudes were driven by a play of forces and more importantly by needs and urgencies.

The name Bauhaus was clearly intended to convey much more European sensibilities than a stylistic design movement. Both bau (building) and haus (house) were to be understood in their broad philosophical sense and encapsulate the ideas of building character, practical skills, and imaginative capacities, alongside a sense of belonging. The name also invokes the medieval notion of Bauhütten, referring to working communities of builders and stonemasons, united in a common spirit. Understood in these terms, the educational environment was concerned primarily with learning as a social process; this is also strongly ingrained in the association of the German words for education (*bildung* and *erzieung*) with the neo-humanist tradition. Bildung is derived from Bild (image) in the senses not only of 'sign' and 'reproduction', but also of the way we form ideas. Whereas *erzieung* is associated with the notion of upbringing (Biesta 2014). Both of these ideas are strongly ingrained in the educational philosophy in Europe through the experimental approaches of the Swiss educational reformer Wilhelm Pestalozzi (1746–1827), who challenged the separation between intellect and practical skills, placing the emphasis on processes of formation and the relationship between hand, eye, and heart – or in other words, between practical, visual and emotional aspects of life, but also in the dynamics between teacher and student.

In terms of educational philosophy, these roots are found in educational reform and the notion of universal education, where everyone could be provided the opportunity to come together, to find some common ground where one might learn to tolerate social, religious, and ideological differences. This is perhaps why the most significant historical touchstone for Bauhaus appears to be Pestalozzi, whose ideas had a profound impact on those educational reformers who were advocates for holistic growth, personhood, and self-understanding of the individual, as a means to develop the sense of social responsibility and empathetic judgement. This idea that aesthetics was an education in ethics and empathy became central to the Bauhaus ethos in the much-quoted motto: 'head, hand and heart'. Pestalozzi's thinking found its way into the pedagogic approaches of the art school and of those artist-educators who believe in the value of education as a life philosophy. It accords closely with the educational pragmatism we also associate, in North America, with such figures as John Dewey, Jane Addams and Ellen Gates Starr. This is one reason why the Bauhaus émigrés found such strong support in the US, in their advocacy of an education based on personal freedom and responsibility rather than externally imposed authority. For them, what mattered in education was not just the transfer of knowledge or the way we conceptualise and represent the world, but what we learn and un-learn through the process of shaping and forming our own environments.

This approach overturned the prevailing hierarchies of knowledge that had tended to separate practice, theory and aesthetics from experience. It proposes that if everyday life is going to challenge us to see things in new ways, then we need ways of working that ask what if the theory (or that which we designate as such) were to lie not in the systematic interrogation of its own premises but in paying attention to the way we handle and transform the things around us? In these terms, what matters is not the way knowledge is transferred, but a deeper understanding of how experimentation, 'learning by doing' might help us communicate new ideas or change direction. This approach places much greater emphasis on the variation in human perception and aesthetic judgements are then a significant tool for exploring multiple subjectivities; material and spatial agency (the way materials and environments act and affect others).

As an important aside, it is worth noting that the Bauhaus also radically altered the demographic of the art school. Art school was previously highly elitist and limited by social hierarchy and class. Whilst attitudes to gender and ethnic equality are clearly out of step today, they should be understood in comparison to what came before. Listening again to these creative forebears might also then remind us that the Bauhaus was one of several calls for cultural and social reform, alongside the manifesto of the *Arbeitsrat für Kunst* (artist workers council) in 1918; and the Moscow equivalent of the Bauhaus *VKhUTEMAS (Higher State Artistic and Technical Studio),* established in 1920 as a successor to *SVOMAS* (Free State Art Studios). This generation of

art students might help us to think more carefully about our understanding of democracy and the divisions and polarisations that are apparent across the world in Higher Education today and how present systems have not created a means for people to move beyond their predestined positions, but have instead exacerbated social division.

The cast of characters who make up the Bauhaus faculty included some of the most influential avant-garde artists of the twentieth century, including Wassily Kandinsky, Paul Klee, Johannes Itten, Gertrud Grunow, Oskar Schlemmer, László Moholy-Nagy, and Josef Albers – they were clearly not alone in their endeavours to overturn received hierarchies of knowledge and experience. Together, these artist-educators and broader circle of friends and social visionaries set out to explore how technological changes brought about through mass communication – radio, gramophone, printed matter, photography, film, telegraphy – would alter our experiences. Those who were caught in the political crossfire following the rise of the Nazi Party, who managed to survive or escape Germany sort out new teaching positions – principally in Britain and North America – where they carried on their practices while adapting to their new environments.

Bauhaus was often dismissed by post-modern scholars as prescriptive, *apolitical*, and formalistic, but this is in fact, far from the truth. The Bauhaus approach was never *apolitical* and those who taught at the Bauhaus found ways to navigate external conditions and steer their students away from danger. What connects the diverse pedagogic approaches of the staff is this search for truth, integrity and a shared commitment to *open the eyes* of students (Albers) to explore the similarities and variation in perception (Kandinsky, Klee) and ultimately to enable generations of artists to imagine possible futures. (Moholy-Nagy). It is worth noting that it is these teachers, through their pedagogy, that would later inform the students we associate with the counterculture.

One can see these pedagogic principles in Klee's own design for the Bauhaus curriculum; a drawing that views the art school as a microcosm of the world; a location to rehearse and experiment. It certainly informed the more familiar curriculum circle produced by Gropius in 1922. Stepping into the circle required students to spend time circumnavigating the outer ring and then, once each area of study had been completed, to move inward toward the centre. Not all students would continue. Many left the school at the end of the preliminary course, the outer ring. Nevertheless, the progression from circumference to centre presents an overall idea of the way learning grows from experience. Along these lines, the Bauhaus students in Weimar would often describe themselves as journeymen (Gessellen), referring in the craft tradition to a time of travel prior to joining a trade, based on the principle of learning through apprenticeship. Thus, as one moves to the centre of the circle, the aim is to grow and develop the skills associated with mastering a craft, with invited individuals also being offered the possibility to become a junior master (Jungmeister).

The importance today of this foundational education is that it emerged at a moment of significant social and educational crisis.[1] It also reminds us of the need to reclaim many ideas that have been misappropriated in our current systems. For example, terms such as *apprenticeship* were understood very differently in the past – if we listen to the meaning of the word that is associated with the tradition of self-cultivation rather than premature vocation. As the concentric circles of the Bauhaus curriculum reveal, it is essential for students to find the direction of travel that is right *for them*, and to experiment in order to recognise where their talents lie, and where their dispositions and capacities might lead them. This notion of self-discovery or *calling* is part of the *zeitgeist* of certain circles of German culture, which was exemplified by the *bildungsroman* (coming-of-age genre) of which Goethe (1749–1832) is the acknowledged founder, as in *Faust* (1773), *The Sorrows of Young Werther* (1774), *Wilhelm Meister's Apprenticeship* (1795/96) and the sequel *Wilhelm Meister's Wanderjahre* ('journeyman years') (1821). The Wanderjahre novella speaks clearly to periods of disillusionment with conventional education, the hierarchy of knowledge and the ways individuals are captured and pigeonholed. The protagonist undergoes a journey of self-discovery and heartbreak, which enables him to escape his empty life of bourgeois convention and search for truth and meaning beyond transient pleasures or predestined expectations. While the *Bauhäusler* were warned by their school director not to steer too far toward the escapism and esoteric posturing of some of their romantic and intellectual forbears, they were, nevertheless, urged to reclaim the notion of *aesthetic experience* as integral to everyday life.

Unlearning and aesthetic experience

In the field of educational philosophy, this particular understanding of *aesthetics* is not widely discussed or understood. However, it finds an echo in John Dewey's *Education and Democracy (1916)*, as well as in his *Art as Experience*: the former, published in 1916, was written during the First World War; the latter, dating from 1934, appealed to the many artist-educators and émigrés arriving in the US to rebuild their lives after the enforced closure of the Bauhaus in the previous year (Dewey 2009, 1916). Reading these two publications together offers some insight into the relationship between education, democracy, and aesthetic experience. It is perhaps because the faculty and students fleeing the conditions of Nazi Germany found common cause with those navigating the extreme social and economic impacts of the Great Depression that Dewey's philosophy resonated so strongly with artist-educators who recognised art as a lived practice (Jane-Jacob 2018). Dewey's theories, particularly in *Art as Experience* (1934), offer a greater sense of the importance of *aesthetic* education as a means of opening up experience and channels of communication between learners and teachers alike. What his ideas propose is that aesthetic experience creates a space for participants to

think carefully about their judgements. Learning in these terms does not then have to begin with a corpus of contextualised knowledge. It rather begins with an understanding of multiple subjectivities and then turns attention to some collective problem or task, however large or small, that must be resolved. This approach helps us understand our preferences and capacities, and how our impulses, perceptions and experiences relate or can contribute to the experiences of others.

The émigrés that managed to find passage to the US included the Bauhaus artist-educators Josef and Anni Albers and Xanti Schawinksky, later joined by the founder of the Bauhaus, Walter Gropius, and by László Moholy-Nagy, Marcel Breuer and Herbert Bayer (amongst others). For them, Dewey's ideals of individual freedom and discovery must have felt like a beacon of renewed hope. But Dewey's philosophy was also foundational to the establishment of Black Mountain College[2], conceived in 1933 by John Andrew Rice. The pedagogic ethos and principles of this new independent college included: (1) that artistic and aesthetic experiences are central to democracy; (2) that learning emerges through immediate experience and independent study; (3) that governance should be shared by faculty and students; (4) that education extends through social relationships and endeavours beyond the classroom; (5) that oversight and judgement should be limited to participants in the collective experience; and (6) that visitors should be invited from diverse disciplines. The line from the Bauhaus, through the philosophy of Dewey, to Black Mountain provides possible future paths to follow to imagine an educational environment based on process rather than objectification (Egglehöffer 2015).

What Dewey reminds us through his educational philosophy is that the power to grow depends on carefully formed relationships with others. These are the conditions of education as growth – understood not in economic terms, but in terms of future capacity:

> In directing the activities of the young, society determines its own future... Since the young at a given time will at some later date compose the society of that period, the latter's nature will largely turn upon the direction, activities that were given at an earlier period.
>
> (Dewey 1934:26)

This accords well with the words of artist-educator Josef Albers, who recognised that to see the world, we must first become aware that reality is not necessarily as we believe it to be, that we must learn how to see the world anew and understand how we might transform it. This approach to experimentation still found in the grassroots of art school is underpinned by responsivity and the motivation to retain one's own perspectives or human agency whilst also responding to needs, urgencies and shifting cultural attitudes.

To return to the Bauhaus pedagogical process that continued at Black Mountain through Albers, the preliminary or foundation course (referred

to as either Vorkhurs, Vorlehre or Grundlehre) is an important bridge. The course was intended to return to first principles, break the cycle of imitation, and clear the baggage of inherited practices and accumulated knowledge. Under the co-direction of Josef Albers and Lázló Moholy-Nagy, the pedagogic lessons of the preliminary course continued in a similar vein to the earlier ideas laid out by Johannes Itten in April/May 1922 and acknowledged and republished by Gropius in the catalogue for 1938 Bauhaus exhibition at the Museum of Modern Art (MOMA), New York.

> Every new student arrives encumbered with a mass of accumulated information which they must abandon before they can achieve perception and knowledge that are really their own… The preliminary course concerns the student's whole personality, since it seeks to liberate them, to make them stand on their own feet, and makes it possible for them to gain knowledge of both material and form through direct experience.
>
>   (Itten 1922 in Bayer, Gropius 1938:34)

Whilst this notion of 'un-mediated' experience formed by the Swiss expressionist painter and artist-educator would be naïve today, the pedagogic experiment should be understood as a way of supporting students recovering from the trauma of war and revolution, attempting to break from an idealised past and classical orthodoxy alongside questioning normative academic values. The Bauhaus moved quickly away from this expressionistic position, following Itten's departure from the art school in 1923. A greater emphasis was placed on material, sensory and experiential learning as developed by Moholy-Nagy, and Josef Albers through the Vorkhurs and in the colour and form theory developed by Kandinsky and Klee. In common with Ingold, what these forebears proposed was a way to enable participants to read between the lines and to make informed judgements (aesthetic, pragmatic and ethical). This aesthetic education was then perceived as an antidote to imposed external knowledge or the propaganda circulating through popular media (whether commercial or state-owned). Many of these perspectives are continued and carried forward in the writing of Ingold, particularly in his book *Anthropology/and as Education* (2018) and in *Imagining for Real* (2022), where Ingold extends the argument that education is not the transmission of knowledge, but a way of leading the student out into the world, an education that is attentive and responsive; that enables future generations 'to achieve correspondence that goes beyond what any of them could have imagined at the outset' (Ingold 2018: 38). Education, in these terms, is not about finding definitive answers through systematic methods; it is, instead, one that creates a space for new ideas to grow, enabling individuals to work together, and also find their own position and move in new directions as and when needed.

The Bauhäusler László Moholy-Nagy (1895–1946) also remains a significant touchstone for thinking about how we change direction or respond to

the future. He explored with students at the Bauhaus and in Chicago what it means to live in an impersonal and anonymous modern age. With remarkable contemporary resonance Moholy stated:

> The problem for future generations is to bring the intellectual and emotional, the social and technological components into balanced play; to learn to see and feel them in relationship. Without this interrelatedness there remains only the disjunctive technical skill of handling human affairs, a rigidity stifling biological and social impulses, a memorized not a lived life.
>
> (Moholy-Nagy 1947:12)

These ideas resonated also in Britain, particularly in the industrial heartlands and with artist educators who carried forward a new approach to art education that would address class divisions and help build an alternative future. For example, the artist Richard Hamilton referred directly to the creative credo of Paul Klee – to the *Pedagogic Sketchbook*, first published in English in 1953, and later to *The Thinking Eye*, translated into English in 1961 (Klee 1953, 1961). Hamilton also refers to the writing of Moholy-Nagy, whose book *The New Vision*, written to inform a wide public about the principles of Bauhaus ethos, was first published in English in 1938, followed in 1947 by *Vision in Motion* (Moholy-Nagy 1947).

Future pedagogies

Like many whose formative experiences emerge not from the university, but from the pedagogic practices found in the art school, hours of carefully painting colour circles, tonal and tactile charts, drawing blindfolded whilst listening to music, or searching through skips for discarded materials, I feel I owe something to those artist-educators who taught the emerging generations to look not only at things as they appear, but also to see the discrepancies, nuances and similarities in our perception. The continuum of art education that I speak of, arguably offered a moment to turn away from the educational hierarchy, that so often separates, divides and polarises communities, and the continual jockeying for position that is so much a part of our current educational culture; one that reaches back to an educational tradition of Western philosophy that continually attends to the relative merits of disciplines, and in doing so divides and separates the mind's eye from the bodily hand, the theoretical-conceptual from the practical. Rather than focusing on cultural and disciplinary hierarchy, it offered an educational approach that focused on urgencies and needs and the common tasks ahead of us.

Thinking of the pedagogic ethos that guides this kind of educational approach; one that retains a deep anthropological sensibility. I propose, also, this may help us to envisage an alternative way that we can shift our institutional models through our attitudes to teaching. This shift in attitude perhaps

gives us some tools to ask meaningful questions about the tacit lessons that inform our current educational models across FE & HE. Yet an ethos is not easy to defend or communicate, as it denotes the customs, feelings and collective emotions that animate a particular social group. As the anthropologist Gregory Bateson stated:

> I pictured the relations between ethos and cultural structure as being like the relation between a river and its banks— The river molds the banks, and the banks guide the river. Similarly, the ethos molds the cultural structure and is guided by it.
>
> (Bateson 1972: 93)

Perhaps we could draw on this image provided by Bateson and the educational philosophy of Ingold to think about how we might transform education in the future. My contribution to this discourse is to also propose that the reservoir of pedagogic experimentation found in art school reform provides much evidence that this shift in attitude and *ethos* is possible. The experimental approaches, variation, and dynamics of the learning environment are essential for real growth. Instead of appearing unworkable or unsettling, thinking carefully about education as a microcosm of things to come; could inspire a sense of renewal. It returns us to the most important question of all: *what is education for?* (Biesta 2014; Ingold 2021) For the custodians of education it turns the spotlight on the questions raised by Dewey, who one might speculate would ask what tacit things we are teaching the next generation through our consumer-centred models and why have we turned education into a space that canalises learning or fuels the impulse for instant gratification rather than addresses long-term needs.

Notes

1 Winter, J. 2022. Searching for the Ethos of a Lost Art School: 165–188 in Ingold, T (ed) Knowing from the Inside Cross-Disciplinary Experiments with Matters of Pedagogy. London: Bloomsbury.

2 References to Black Mountain College are formed primarily from extensive professional research as a curator. The most useful resource was: Berlin: Black Mountain: An Interdisciplinary Experiment 1933–1957. 05.06.2015 to 27.09.2015, Hamburger Bahnhof, Museum für Gegenwart, Berlin. Primary research drew on material from Arnold Dreyblatt: 'Performing the Black Mountain Archive', running in parallel to the exhibition and incorporating the live performance of archival material as readings, concerts and performances within a pre-planned time structure at predetermined locations within the exhibition, along with personal communications with Black Mountain Scholar Mary Emma Harris, Friday 22 March 2019 and Fabienne Egglehöffer, chief curator and head of collection, exhibitions and research at the Zentrum Paul Klee, Monday 25 March 2019.

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Section IV

Introduction

Moving forward with anthropology

Sarah Pink
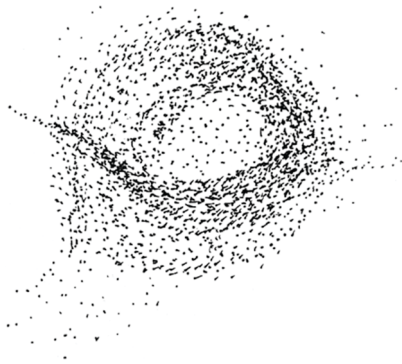
The concepts of creativity, correspondence and design, each invoke a sense of ongoingness, in a processual, continually changing world where lives, environments, experiences and activities are always emergent, never completed and never closed, and are open to each other and to possible but as yet unknowable futures. This is one of the great gifts and legacies of Ingold's work; the possibility to understand the world and life itself as open-ended but also (whether or not Ingold intended it) to open up anthropology itself to new modes of participation in possible futures (Pink 2023a); to experiential worlds that do not and perhaps never will exist; as Caroline Gatt (Chapter 11) shows, to revise our understandings of power and politics as emergent, relational and processual; and to do so with a sense of hope, taking hope here to be a corrective to hype and optimism. Ingold warned us against thinking in binaries, whereby things come directly up against each other (2000). In this spirit, his legacy has not been to inspire projects of direct contestation, action or resistance to approaches which depend on dominant narratives that thrive on the hype of what Ingold calls 'big science' (2022). Rather, his work has directed us towards an approach that advocates something altogether

more effective: a new mode of engagement with and of going forward into and with possible future environments, relations and ways of being. Ingold's work has been a key inspiration in my development of futures anthropology (Pink & Salazar 2017) and what I see as doing 'anthropology forward' (Pink 2023b), and in this section, we find a growing commitment in anthropologists towards an anthropology that likewise seeks to rework the temporalities of anthropology, and in doing so to impact on the wider temporal structures of society, industry and governance.

Science and engineering disciplines and the industries and governments that direct and fund research and innovation agendas frame the dominant agendas of our time. Often through programmes that seek to create 'better' futures, by developing technology for 'social good', or seeking 'social licence' to transition communities and lives to net zero carbon emissions. The organisations that fund such research and intervention programmes might believe that the outcome of their programmes will be to mitigate climate change and secure just and fair societal and environmental futures. Yet it is hard to imagine how they will achieve this while they remain complicit with corporate capitalism, neoliberal governance and all those processes that are co-implicated in the current circumstances of climate change in which we find ourselves. It is not just what Ingold (2022) calls 'big science', engineering and technology which, as colonising and extractive forces have participated in the trajectory we find ourselves in. Rather, the rise of the consultancies, industry, and short-termism of government are also complicit in these processes (Shore & Wright 2018). Academics – anthropologists and colleagues in cognate disciplines – are also bound up in these very systems. They sustain our positions, and our research and also offer us a space in which to collaborate with those very disciplines whose logics the social sciences and humanities have so harshly critiqued for so long. For me, Ingold's legacy involves the ability to see alternative modes of proceeding, rooted precisely in creativity, correspondence and design. How might anthropology participate in reshaping the possible futures that are envisaged and predicted by science, industries, consultancies and government? How might we collaborate with the world in which we already find ourselves, and the science, engineering, business and governmental agendas that concern us so much, to complicate their future visions, and pre-empt the possible disasters that critical pathways lead us down?

The three essays in this section ask closely related questions: how might generative modes of change occur; how can anthropologists become co-implicated in the projects of science and give direction; and how by shifting the tools through which we engage with the environment, might new pathways into unknown futures be shaped?

I believe anthropologists have an ethical responsibility to engage with such questions and to seek to work towards hopeful and generative ways forward. Ingold's work has inspired me to ask how we can best work at what I call the 'edge of the future' (Pink 2023a). I suggest that as responsible and ethical anthropologists we must ask ourselves what concepts and principles might help us to shape an anthropology which goes beyond simply critiquing

dominant, quantitative and predictive top-down future visions. Instead, we should complicate these visions in generative and hopeful ways. In my work, for example, this has involved investigating how we might constitute trusted futures. Here, trust is a feeling derived from our sensory and affective confidence in the circumstances in which we find ourselves (Pink 2022a), rather than something that government, industry, technologists and consultancies think they can extract from people through surveys and investments in new technologies (Pink 2022b). I argue that we can hope to create these shifts through pedagogical modes of engagement outside academia by creating theoretically informed and conceptually relevant ethnographic knowledge, through which we must connect outside anthropology, and in the very sites, discourses and fields of practical activity which we wish to complicate.

The essays in this Section offer us a series of starting points and examples through which to consider how anthropological research and practice might participate as we move forward into uncertain and possible futures. Each essay takes a different route towards showing us how Ingoldian anthropology might contribute to constituting pathways forward.

Wendy Gunn writes about *Design Anthropology as a Design Methodology*, drawing on her many years of experience as an active participant in the design anthropology movement with Ingold, and her subsequent work with engineers, architects and other experts. Gunn advocates for 'practices of sustainable future making', involving collaborative methodologies inspired by Ingold's argument that the main goal of design anthropology is educational. As Gunn emphasises, design anthropology is sensorial. It attends to the phenomenological and experiential modes through which people live and engage with their environments. Such an approach enables us to understand not only the present as a sensorial situation but to also ask what the future might feel like (Pink 2023a). Design anthropology is also, Gunn points out, political and critical. However, in its critical perspective it does not represent a problem-solution paradigm, and as such as she puts it design anthropology: 'challenges assumptions of a problem-solution orientated technical understanding as the basis for design interventions'. Instead as a collaborative approach, design anthropology should support and shape sustainable future-making practices in architectural and engineering disciplines.

Design anthropology, as demonstrated in Gunn's examples, involves new practices, new methods and new commitments. As Ingold has long since advocated, anthropology and ethnography are not inseparable, or the same thing. Rather than emphasising a central role for traditional long-term in-person participant observation in design anthropology or future-making practices, Gunn highlights four methods. First, workshop methods – which are commonly used in design research and practice (Akama et al 2018, Pink et al 2022), and are becoming increasingly used in design anthropological research. Second, researching with prototypes which can enable us to invoke experiential elements of possible futures, and in my own work has been developed in the context of researching possible future experiences of riding in self-driving cars, or smart homes (see Pink et al 2022). Third, using

experimental archaeology methods to research how astronauts live on space stations to produce understandings related to the design of such sites, the results of which would 'inform future research design experiments and to improve the design of mission equipment and spacecraft design for future space missions'. Fourth, the necessity of doing design anthropological research at a distance when for whatever reason we cannot be with participants in research in person. In Gunn's case, this was undertaken while the astronauts were in flight, and during the COVID-19 pandemic, many ethnographic studies shifted online to engage with participants at distance, using video and other technologies (Pink 2021). Gunn is, then, describing a mode of doing anthropology that goes beyond the expectations and conventions of the discipline's mainstream, and indeed surpasses its conventions both in terms of its temporality and its methodologies.

Caroline Gatt (writing with colleagues Gladys Alexie, Joss Allen, Gey Pin Ang, Valeria Lembo, Amanda Ravetz, and Ben Spatz) suggests another way to disrupt conventional scholarship, and in doing so challenges the dominant narratives I have described above in a different way. Gatt presents a way forward through *Regenerative Scholarship and Pluriversities*, which offers a welcome recognition that we must confront the difficult questions that we are challenged with today through anthropology as a generative practice. Gatt has been inspired by Ingold & Mbembe (2005) to work 'towards developing forms regenerative scholarship based on the notion of the pluriversity' within the frame of a mode of anthropology which is more aware and precise regarding its impact.

One of the key contributions of Gatt's chapter is her development of an approach by which 'the pluriversity would be epistemologically plural; and rather than being extractive, scholarship would be regenerative'. As I have noted above, dominant academic approaches to climate change are often framed institutionally and conceptually in ways that resonate with the extractive industries. Well-meaning ambitions to achieve a transition to net zero carbon emissions tend to be pinned on the idea of gaining the 'social licence' of communities to allow this to be done – and in doing so, borrowing the same concept used in the extractive industries (Adey et al 2022). Moreover, as also pointed out above, the ways in which concepts, such as trust are engaged across quantitative, computer science and engineering disciplines are transactional and extractive; they seek to win or gain the trust of 'publics' and to invest it into technologies or organisations so that people will trust these entities (Pink 2022a). Such visions are, in many ways, antithetical to an Ingoldian approach, since they separate things out from each other, construct extractive channels between them, and see sustainability as an engineering problem to be solved for communities, if only they will trust and give licence to those who lead such initiatives. For Gatt, like Gunn, there is a pedagogy underpinning the very different approach she advocates, since, she argues that 'regenerative scholarship would provide a context in which people are nourished to critically and creatively explore the world in equitable ways; and to generate sustainable ways to make a living'.

Gatt's work invites speculative proposals which can impact the world, but this vision for regenerative scholarship is also collaborative. It is also a collective practice, whereby her chapter is composed of a series of pieces written by her co-authors, bringing their approaches into view. She proposes a set of principles that should guide regenerative scholarship. These involve: seeing anthropology as a fundamental element, in 'Drawing on Anthropological Practice'; a commitment to 'Decolonising Scholarship' as a requirement for sustainability and equity; and the need to be 'Embedded in Local/Global Communities'. Gatt makes a powerful call for a revised scholarship, underpinned by collective speculation, which indeed, if followed through will also enable new modes of hope, and for an academic community that leaves behind its extractivist model.

In *Dwelling with the Trowel: Humble Tools and Imagining the World Differently*, Rachel Harkness and Cristián Simonetti also take us close to the ground, to propose a way of thinking about how futures might be made. They also suggest a new way of experiencing and generating hope, and like Gatt and Gunn, they call for a new practice, arguing that 'as both academics and as citizens of a shared world' we need to seek new, interdisciplinary routes forward. Harkness and Simonetti, like Gunn, engage with the world as material and sensory and bring new temporal dimensions to the discussion in this section. Through their consideration of how the material culture and sensory knowing of the work of archaeologists and eco-builders, they suggest that 'trowels might act as prisms on both the uncovering of the past and the building of the future'. By investigating the low-tech practices of people who build with the earth, they account for an approach to buildings which sees them as being, as they express it, 'fully *in* and *of* the contemporary world'. They compare this to the practice of archaeology, which, they suggest 'does not sit upon a ready-made world but is rather in and of a world in constant becoming'. In an Ingoldian sense, Harkness and Simonetti, thus, see these practices and the modes of creativity they entail as moving along with the world and as part of the ways in which the world transforms itself (rather than being external forces which transform it).

Harkness and Simonetti suggest that we might learn from the perspectives of archaeological and eco-building trowelling. They describe these as practices which critically challenge dominant understandings of space and time, establish a connection between people and environment, and as such reveal alternative, and hopeful paths forward. The development of Harkness and Simonetti's analysis and argument resonates deeply with Ingold's scholarly practice and indeed demonstrates the value of detailed ethnographic focus on skilled practices and situated ways of knowing as they come about in the world. They invite us to attend to and learn from the details, and in doing so to see how and when it is possible to go forward in ways that are attuned with the world. At present a growing number of anthropologists are likewise seeking to learn from examples which offer hope and optimism for futures (Willow 2023), and rethinking concepts of space, time and futures is fundamental to this task. To accomplish this, Harkness and Simonetti focus on what might be seen as 'traditional' or alternative craft skills; yet we can

also find equally important insights by analysing the practices through which people undertake mundane daily tasks framed by dominant narratives, such as laundry practices (Pink 2012). Indeed, returning to Gunn's chapter, it is likely that collaborative investigations with astronauts in flight will likewise reveal how people live creativity *in* the world with the materials they have at hand.

The chapters in this section powerfully demonstrate the ability of Ingold's ideas to bring us directly to the core of universal questions of human experience and perception that are simultaneously personal and intimate, political and of crucial importance to the future of the planet. They make it very clear that we must acknowledge human creativity, seek out the correspondences between things that dominant science and engineering narratives tend to treat as separate, and that we must seek to design with and as part of ongoingly emergent environmental, social and everyday circumstances and configurations. This, as the examples each chapter has described, involves configuring our intimate sensory relations with elements, minerals and materials – air, soil, books, and clothing – with the politics and technologies of climate change. To end, I bring these insights together with an example from my own work to open up the question of what should follow from these positions.

There is a growing anthropology of air (summarised in Pink 2023a). For instance, in her work with theatre practitioners who explore Prana and Chi through their heritages, Gatt (2020, 2018) traces how air and breathing participate in processes of *generating* environments, sometimes deliberately, in ways that highlight the ontologically simultaneity of body, perception and knowing. Yet, as Gunn points out 'since it is normally invisible and intangible, air has been neglected in studies of architecture and material culture' in favour of attention to human and human-thing interactions. Ingold's work on air and breathing, as Gunn reminds us, frames air as 'the primary medium of perception for creatures such as humans' and, following Ingold and colleagues she notes that air quality will 'have effects that exceed the purely physiological, to include the varieties of sensory experience'. Gunn's work on air quality, and indeed my own (e.g. Pink 2023a) is informed by Ingold's legacy and develops it further. Likening breathing to thinking (2022: 26), Ingold proposes that 'we breathe with our entire being, indissolubly body and soul' (2022: 254–5), thus making breathing, and the air we breathe a key consideration for any anthropology that is concerned with futures and future-making. If hope is to be part of how we approach futures, then one of the things we must hope for and with is breathable air. In Australia, where I am based, air quality is a growing everyday life concern, as householders and organisations increasingly purchase air purification and filtration technologies to protect themselves from indoor and outdoor air. The question this raises, and which I have explored through a documentary film, titled *Air Futures* (Pink 2024), is however, not simply concerned with how people stay safe from airborne threats, but how they may do so as we move into a

future where we need to mitigate climate change by protecting the air from us (see also Pink 2023a). This is precisely the kind of situation we must address through an approach that attends to climate change, politics, and the experience and perception of the environment as emergent phenomena in which we live and in which we must participate (re)generatively to ensure that people and environment can move forward together in hope. It is clear that top-down initiatives to mitigate climate change cannot achieve this alone, and while government and industry ask themselves how to gain 'social licence' to apply decarbonisation programmes to communities, Ingold's work prompts us to look in a different direction: to ask how, by moving forward in collaboration, between disciplines, communities, people and powerful stakeholders, we might better collectively ensure that the air we breathe, our life source, is kept safe for future generations. The chapters in this section help us to start to answer this and the many similar or parallel questions that are active in the emerging world in which we dwell. But we must press on, through practical engagements with co-stakeholders in our futures, using anthropology to complicate, pre-empt and redesign the assumptions that currently guide dominant pathways towards imagined futures.

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10 Design anthropology as a design methodology

Wendy Gunn

In anthropology disciplinary investigations of architectural design and environmental engineering design practice(s) have been limited to the anthropology of design and for design; anthropology by means of design (Gatt & Ingold, 2013) is, however, less developed. Across the various research projects, I have collaborated on since 2005, I have placed emphasis on how technology design processes and anthropological practices can be brought together in a productive collaboration. Integral to conducting interdisciplinary research within multidisciplinary design teams, I have worked to define frameworks to move collaborative research inquiry into design processes; to integrate anthropological methods and frameworks for analysis within design processes and to generate tools for engagement to communicate results of research inquiry in a diversity of forms. I have also developed research insights into how collaborative processes work, as well as how anthropology can play an important role in design, whether in product, architectural or engineering design.

Practices of sustainable future-making go beyond future trends and projections. The practice of making sustainable futures relationally is concerned with, response-ability and performativity, reflexively attuning, and thus, transforming design processes and future-making practices to respond to emerging conditions

(Gunn, 2020). Importantly, this approach challenges assumptions of a problem-solution-orientated technical understanding as the basis for design interventions. Central issues, here, are to: identify anthropological methodologies and theoretical concepts that would support sustainable future-making practices in architectural and engineering design; define, describe, and discuss forms of architectural and engineering design practice that would support sustainable future-making practices; further development of aspects of anthropology whereby designing is the process of collaborative research inquiry.

In this chapter, I will illustrate how the theories and practices of design anthropology have made a difference and changed how our material and social world is approached. I will do so by providing details about the findings and the specific conduct of several research inquiries I have been involved in as a researcher and research supervisor since 2005. I will attempt to briefly describe the research questions, the collaborations, the work processes, the conflicts, decisions, and outcomes. The research inquiries will act as the grounding needed to illustrate the philosophies, methods, collaborations, processes, and outcomes of involving Design Anthropology as a Design Methodology.

Each of you reading this chapter, I would imagine, comes with an understanding of many different methodologies and methods dependent upon your disciplinary backgrounds. For the purposes of this chapter, let us consider design anthropology as a design methodology. That is *the way* methods are involved in addressing social-technical-environmental issues. Methods here can originate from many kinds of design, but they can also come from different kinds of disciplines, for example from anthropology. Design methods on their own, I argue, will not be able to address social-technical-environmental issues facing not only our generations but future generations also. In this regard, what I will do in this chapter is position Design Anthropology as a design methodology. Design refers to the specificities of a diversity of design processes that I have been engaged within as part of my involvement in collaborative design processes and practices since 1989. I position Design Anthropology as a design methodology as a way towards a more conscious and reflective way of designing in a diversity of contexts involving multidisciplinary design teams, interdisciplinary research, and transdisciplinary practices. Through some examples of design anthropology as a design methodology in three research inquiries over time, I highlight how the theories informing design anthropology practices have made a difference and changed how our material and social world is approached.

Sustainability, intra-action, communities of practice

The research inquiries discussed in this chapter have been influenced by sensorial and affective aspects of collaborative design research involving design anthropology as a design methodology. This is made possible by working in correspondence *with* researchers, architectural, engineering and healthcare professionals by sharing our experiences of different kinds of practices within a

diversity of worlds (Ingold, 2017; Gatt & Ingold, 2013). Central to involving design anthropology as a design methodology as Ingold et al (2016) argued, is for people to be actively involved as part of their learning practice and research. Thus, the main goal of design anthropology as Ingold has argued is educational.[1] Importantly, this emerging field is interdisciplinary and attends to practices of inquiry. It is fundamental, however, that while these practices are concerned with politics and criticality, they continue to involve sensorial modes of making and engagement, informed by different ways of caring for others.

My research in Design Anthropology has been influenced by working with Ingold since 1994 when I first began my graduate studies in social anthropology at the University of Manchester. During this period, Ingold argued that human gestures cannot be understood as isolated, decontextualised movements (Ingold 1993). Building on his work on the anthropology of technology (in *The Perception of the Environment* 2000) and Ingold's critical review of the anthropology of Leroi-Gourhan (1999), I was interested in studying how an ethnographic approach to movement and skill could help architects and designers to better place their design processes and practices in relation to the site specificities and localities of environments and communities they were intervening within. In the first instance, Ingold was my Masters and PhD supervisor and advisor for my post-doctoral research (1994–2005) focusing on the interrelations between perception, creativity, and skill. In 2005, I moved to take up a position as Associate Professor of Design Anthropology at the Mads Clausen Institute for Product Innovation (MCI) at the University of Southern Denmark, Sønderborg. During the early stages of developing a unique research collaboration between the Department of Anthropology at Aberdeen where Ingold was appointed Chair of Anthropology, the Faculty of Industrial Design at Eindhoven University of Technology, and the MCI, we focused on the ways in which an anthropological approach to skilled practice and environmental perception may be applied in the emergent field of tangible interaction. This was concerned with the design of technologies that would build upon and enhance the embodied skills of human users, through attention to the dynamics of performance and the coupling of action and perception (as against the more traditional focus on mental computational operations). At the time, this opened a radically new area of research that cut across a wide range of fields from industrial design, through human movement studies and ecological psychology, to sociocultural anthropology. From an anthropological perspective, it resonated with three areas of interest that at the time were generating some of the most exciting new work in the discipline: the understanding of skilled practice, the anthropology of the senses, and the aesthetics of everyday life. Our collaboration and associated research projects were, as we argued, aimed towards providing the foundations for establishing a research agenda for the new sub-field of Design Anthropology (Gunn & Donovan, 2012).

Throughout subsequent attempts (2005-ongoing) to bring design processes and future-making practices closer to people's sensory experience and perceptual acuity in live projects engaging both public and private

partners, the tools for helping to move interdisciplinary research into engineering and architectural design processes and future-making practices are not considered as being representational, objects or even artefacts, rather the focus is to generate flexible categories within dialogic contexts of *intra-action* (Gunn & Donovan, 2012).[2] The tools involved within our inquiries have a critical role and aim towards bringing attention to the limits and potentials of differences in understanding between, most often, different disciplines and professions. They are made to explore the nature of practices of sustainable future-making that allow for, 'an ongoing reworking of the very nature of dynamics' between peoples (Barad 2003: 818).

Practices of sustainable future-making as outlined in the examples I present in this chapter go beyond future trends and projections. Instead, such a dialogic context of *intra-action* allows for participants to be actively involved as part of their practice of learning and research. Integral to these practices of learning and research is a sharing of sensory worlds during participatory processes rather than mental representations (Ingold, 2014: 520; Fors, Bäckström & Pink, 2013:175; Gunn, 2020). At the same time, critically exploring social, relational, and political aspects of these processes and practices. Our overall aim, therefore, is to move beyond the projection of future trends and give focus to the emergent conditions of the present (*after Mead*) to inform future design *intraventions* as opposed to proposing interventions (Arlandis and Lieberman, 2013). Here, the tangibility of tools for engagement does come to matter, since problems of inquiry as I have argued previously (Gunn, 2018) is best explored using multi-sensorial investigations – the ability to hear, see, touch, smell, manipulate, etc. As such, meanings and understandings are created by combining thinking with doing and acting in the world.

Sensory experience and perceptual acuity

I have continued to build upon Ingold's theoretical research concerning sensory experience and perceptual acuity to study the affects and effects that design processes and future-making practices have on people who engage with products, services, buildings, and urban landscapes. This has resulted in conducting research on different science-related structures such as medical facilities and a space station to understand how their design processes and practices affects, for example, patient outcomes of air quality in hospitals, or astronauts' everyday practices of engaging with designed environments and products while being within a unique environment. I also build upon his ideas of future-making, for example, in my current position as Associate Professor of Collaborative Design in Design Engineering at Aalborg University in Copenhagen: About innovation. Here, I explore how the creative economy can be developed not just through business-led models but through expanding the scope of participatory citizenship in collaborative design in engineering design (Ingold et al, 2016). Regarding *sustainability*, I seek to build new relations with

our environment that focus on long-term sustainable growth and coexistence rather than short-term profit and exploitation (Ingold et al, 2016). Regarding health and wellbeing, I am looking for ways in which engineering design practices can promote healthier and more productive lives among those they affect. The futures to be made through my long-term research plans, at Aalborg University in Copenhagen are tied to interdisciplinary research concerning collaborative design in design engineering, connecting current design practices with possible trajectories of continuation in the form of sustainable futures (ibid).

In this chapter, I go on to elaborate on three specific research inquiries through developing very specific ways of working in multidisciplinary and interdisciplinary contexts, and the challenges and benefits of this, through designing, i.e., literally making futures together. Designing here means making experiments involving provotypes, prototypes, and propositions with a diversity of peoples over long periods. Key concepts underpin these inquiries are *sustainability, intravention and communities of practice*. The three inquiries I go on to elaborate in this chapter, which demonstrate what is particular about design anthropology as a design methodology and its relation to making futures are: *Making Futures: New Directions in Anthropology, Architecture and Design* (MFAAD); *The Growth and Well-being Workshop and The International Space Station Archaeological Project* (ISSAP).

Making futures

Through research collaboration (2014–2016) Ingold, Samore, Gilby, McCarthy, Salbitano, Jokela, Bichard, Gunn, Arlandis, Grasseni, Erkkilä, van Olden, Que, Lønne, Myerson, Hanson, Seppälä, Sacramento, Vermehren, Massaini, Serenelli worked towards a MARIE SKŁODOWSKA-CURIE ACTIONS Innovative Training Networks (ITN) application. *Making Futures: New Directions in Anthropology, Architecture and Design (MFAAD).*

In the designing of a doctoral training network across the fields of anthropology, architecture and design, The *Making Futures* research team argued for a redefinition and temporal realignment of the process of research. An important aspect of the team's research inquiry was contributing to participatory care and sustainable citizenship through participatory field research:

> Rather than undertaking systematic investigations into the state of affairs of the past or present in order to contribute final results, 'findings' or datasets that may be applied by others (often policymakers) in defining the shape of the future, in MFAAD we see research itself as a way of joining from within amidst the ongoing lives of people and communities in a forward-looking, experimental and collaborative process of shaping futures for all.
>
> (Ingold et al 2016: 11)

In terms of the work packages, I was involved in designing how this *joining-in* entails connecting with temporalities, uncertainties, and unstable objects that influence for example hospital patients, staff and visitors' multi-sensory experiences and perceptual acuity of the outputs of architectural and engineering design processes and practices. At the same time, by 'joining from within' as researchers, we acknowledge the limits of our methodologies and methods in response to the ongoing changes in, for example, hospital environmental conditions and hospital patients, staff, and patients' practices. Underpinning our research proposal were two key terms originating from the MFAAD research collaboration: *sustainability* and *intravention*.

By *sustainability*, we do not mean the maintenance of human-environmental relations in a steady state, but rather the possibility for ways of life to carry on. The emphasis, thus, is not on the stability of outcomes but on the continuity of the process. By *intravention*, we mean that the tasks of making, which are themselves unending, are inevitably carried on from within a nexus of social and material relations. In this regard, futures are as much grown as made, and there can be no great divide between the artefactual processes of making and building, and the organic processes of growth and reproduction. It follows that any programme of future-making driven by the twin principles of *sustainability* and *intravention* must bring together into the same frame of observation and analysis, the nominally inanimate world of landscapes, buildings, and artefacts with the animate lives of plants, animals, and people. Therefore, in our collaborative research inquiry, we combined our studies in architecture with an equivalent emphasis on the growth and cultivation of plants, and on practices of provisioning, not only in relatively sparsely populated, rural regions but also in towns and cities, and not only outside buildings but inside them as well (Ingold et al 2016; Arlandis & Lieberman, 2013). Sustainable intravention, we argued, however, can only be carried on within *communities of practice* (Lave & Wenger 1991). This was the third key term of our proposal. It is within such communities, formed whenever people *join in* the common tasks of future-making, that the necessary skills are developed and passed on from generation to generation. These are multisensory skills of perception and action, by way of which practitioners engage creatively with both the materials they use or consume and the landscapes they come from (Gunn, 2020; Ingold et al, 2016; Ingold, 2012; Ingold, 2000; Pink, 2009, and Hallam & Ingold, 2007).

Designing for growth and wellbeing

In parallel to contributing to the design of the Making Futures research proposal, I collaborated with an engineer (Christopher McCarthy)[3] and an architect (Howard Gilby)[4] in designing *The Designing for Growth and Well-Being* workshop held at the University of Sussex in April 2016. To

reiterate: Involvement of the positioning of design anthropology as a design methodology in The Designing for Growth and Well-Being Workshop built upon two main terms originating from the MFAAD research collaboration: *sustainability* and *intravention*. Workshop participants included architects, engineers, industrial designers, anthropologists, international development and international specialists, researchers in public health, and doctoral and post-doctoral researchers. The overall aim of the workshop was to engage a multidisciplinary grouping in collaborative design research inquiry focusing on improving air quality in hospital environments.

During the Designing for Growth and Well-being workshop, we problematised notions of sustainability and intervention by asking: In what ways could we combine biotic and abiotic elements in the designing of hospitals? Further, we asked: Could involving biotic and abiotic elements improve air quality in hospital interiors? The set of architectural design propositions made by workshop participants explored how bioclimatic principles could be involved in improving air quality within hospital environments by combining environmental engineering systems and architectural elements.

Challenging existing assumptions about limits of bioclimatic principles within hospital interior environments, workshop participants presented a series of counter theses whereby bioclimatic architecture and engineering design propositions could contribute to preventing contamination of indoor air quality in hospitals while at the same time contributing to health and wellbeing of patients, hospital staff and visitors. First-year interaction design engineering students from the University of Southern Denmark (SDU), under my supervision and two graduate students in IT Product Design, Torenholt, and Wint Htet (SDU), designed a series of prototypes. Their task was to make a series of prototypes focusing on Gilby and McCarthy's ongoing research on a) tangible testing of insulation and air cleansing properties of plant roots, b) light capturing and shading capacity of algae, c) potential of growing plant walls to form dynamic interactive walls equipped with transparent chambers and water aeration flushing systems. These prototypes were involved in the workshop to instigate dialogue among workshop participants about bioclimatic principles and their potential to improve air quality within indoor hospital settings.

The Designing for Growth and Well-being workshop participants included a mix of graduate and doctoral students from the School of Global Studies, which includes the departments of anthropology, international development, geography, and international relations. There were also several researchers from the departments of architecture, design engineering, anthropology, and international development and from the department of product design, which sits in the School of Engineering and Informatics. Workshop participants were asked: How would your team improve air quality in hospital healthcare facilities involving bioclimatic principles embodied within the physical prototypes? Participants were divided into three groups composed

of different disciplines, design and engineering practitioners and researchers from the healthcare sector. Each grouping was given a task: Collaboratively build three design propositions for improving IAQ in hospitals referring to bioclimatic prototypes, inspiration cards and excerpts from a series of interviews conducted with medical staff working in Norwegian, Danish, Croatian, and German hospitals. A set of architectural design propositions of how biotechnology could be involved in improving air quality within hospital environments by combining biotechnology, environmental engineering systems and architectural elements were produced by the participants within a three-hour period. Due to the expertise of the participants, the quality of the design materials and the long-term planning that went into the workshop design, the final design propositions contributed to the research investigations. The design materials and biotechnology prototypes were not only a way of testing hypotheses but also of passing on skills and learning between people. Importantly, findings from these collaborative design activities, whereby design is the process of inquiry and design anthropology was the design methodology showed that workshop participants recognized possibilities to conduct future research projects together.

These ongoing dialogues involving working prototypes were essential in exploring collaboratively the possibilities for integrating sustainable approaches towards designing in hospitals, but also more broadly future urban landscapes to meet the global challenges of increasing air pollution and contamination, while at the same time promoting health and wellbeing. Analysis of empirical materials generated from the workshop also provided an opportunity to investigate how understandings of hospital occupants' sensory experience and perceptual acuity can be disclosed to different members of a hospital design team, considering the divergent needs of different stakeholders regarding research content and mode of representation.

Figures 10.1 and 10.2 show the design materials used during the workshop and propositions built by workshop participants. Design materials included small prototypes (made by 1st-year interaction design engineering students) of Gilby, and McCarthy's ongoing research of how to involve fundamental research in biological systems and integrate this with environmental and construction engineering of building design. The materials also included excerpts from interviews conducted with healthcare staff in hospitals throughout Europe. Importantly, these design materials enabled workshop participants to actively engage, collaborate, and contribute to research outside of their knowledge domain in a short period of time.

Here, the positioning of design anthropology involving theoretical concepts from anthropology concerning *sustainability and intravention as* a design methodology shows how researchers, students and a wider body of research participants can engage with design materials embodying these concepts. In so doing, it enables them to take seriously sensorial and affective aspects of collaborative design research through practices of making.

Figure 10.1 Workshop materials © Wendy Gunn. Photograph by the author.
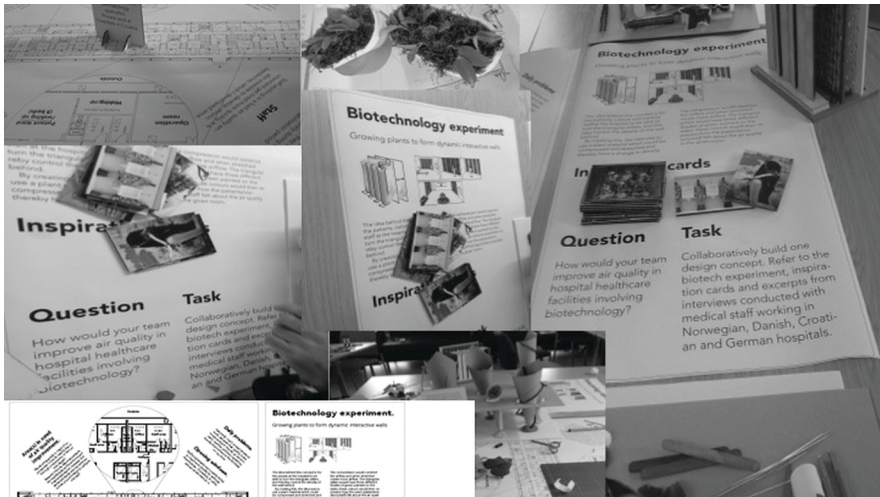
Figure 10.2 Building propositions © Wendy Gunn. Photograph by the author.

The International Space Station Archaeological Project (2015–ongoing)

From 2018–2022, I was a co-investigator working with an international grouping of researchers on *The International Space Station Archaeological Project* (ISSAP) (Walsh & Gorman, 2020; Gorman & Walsh, 2023) This is the first systematic observation and documentation of *in situ* material culture in a space habitat. The project is focused on exploring life on the ISS and understanding how astronauts live and work in space through their experiences and relations with material conditions (Walsh & Gorman, 2021). The purpose of the investigation is to provide insights not only into how astronauts use everyday living and work environments in space but also how astronauts use objects and spaces related to behaviours and interactions. Our investigations set out to define the significance of designed environments in a space habitat and ultimately will help space agencies understand exactly how different objects and spaces are used over time. The research team comprises archaeologists, geologists, environmental engineers, science and technology specialists, and the author, as the design anthropologist, from US, Australian and Danish universities and institutions including NASA Glenn Research Center. One of the main challenges of the research project is to conduct research at a distance, i.e., it is necessary to develop a research protocol for astronauts to conduct research on the research team's behalf during an in-flight mission. Importantly, the research project has an important contribution to understanding how science gets done daily at the International Space Station (ISS) from the viewpoint of the astronauts

themselves, beyond using existing methods of video, photography, audio recordings and live feedback. As a Co-Investigator in the Archaeological Survey of ISS project led by two space archaeologists Justin Walsh and Alice Gorman, I build upon my previous research studying the affects and effects that design processes and future-making practices have on people who engage with products, services, buildings, and urban landscapes. Of most relevance, here, is my focus on science-related structures such as medical facilities to understand how their design (particularly relating to air quality) affects patient outcomes.

The research team proposed to do an intensive survey of the material culture of the ISS, as part of the first comprehensive archaeological investigation of a human habitat in space. ISS is the largest, most complex, and most intensively inhabited spacecraft ever built, with 241 visitors from 19 countries during its 20 years of continuous habitation. The researchers, with disciplinary backgrounds in archaeology, anthropology, architecture, geology, sociology of space, and indoor air quality engineering were not able to visit ISS, due both to cost and a prohibition on social scientists becoming astronauts. To carry out this work, therefore, we developed a series of procedures for the astronauts to follow, just as they follow procedures to carry out experiments in physics, medicine, or chemistry.

The research team worked together on the design of seven experiments. The first, *SQUARE* (January–March 2022), was concerned with understanding how astronauts use ISS interior facilities and develop activities within the unique space-based habitat whose primary function is as a scientific laboratory. The procedures focused on illuminating four main areas of anthropological interest at ISS:

1) uses of space in the ISS and the problem of habitability,
2) diverse modes of crew engagement and relationships with objects,
3) the nature of public and private spaces,
4) distinctions between planned and actual uses of various interior ISS environments.

Experiments

As the design anthropologist in the team, I am interested in the astronauts' recording of everyday practices such as repairing, cleaning, tidying, securing, rearranging, searching, responding to failures, or sense-making. The first experiment was carried out by astronauts working in the US ISS sector and was completed in late March 2022. Walsh and Gorman, working with Graham (a digital archaeologist at Carleton University in Ottawa) and his MA student Brousseau, are currently extracting archaeological data from the photographs taken during the experiment. Once the data has been extracted, the wider research team plan to co-analyse the materials.

The second experiment I will discuss in this chapter is, S*ampling of the air in various modules to identify the origins of airborne particles in a microgravity environment,* concerned with the sampling of the air in various modules to identify the origins of airborne particles in a microgravity environment. e.g., lint, fibreglass, skin flakes, metals, and carbon fibres (Meyer, 2016; 2018). Our aim, here, will be to test the hypothesis that the air in such an environment, where particles do not fall but instead remain suspended, moving only in response to collisions or a stream of ventilation, is analogous to human-generated soil and can be treated as an archaeological *artefact*. In addition, we consider air in a microgravity environment as equivalent to a soil matrix on an archaeological excavation. These conceptualisations of air could radically change both how archaeologists conceptualise deposits and how space habitat designers approach their work. Our research builds upon Co-Investigator Meyer's (Meyer, 2016; 2018) results from the Aerosol Sampling Experiment; my previous research *An Anthropological Inquiry by Design Towards Improving Indoor Air Quality within Hospital Settings 2017-2018)* in collaboration with researchers Ann Heylighen and Dirk Saelens[5] from KU Leuven University (2017–2018); and Co-Investigator Richter's work on anthropogenic soils (Richter 2020).

To date, the purpose of the experiments is to provide insights into how astronauts' ongoing use of the internal environments of the ISS results in social and material changes. The results of the analyses will be used to inform future research design experiments and to improve the design of mission equipment and spacecraft design for future space missions.

Air, sensory experience, and perceptual acuity

In the archaeological survey of ISS research, sensory experience here relates to perceptions of ISS indoor cabin environments, and perceptual acuity relates to how different senses are interrelated in perception through movement by astronauts within these environments. The experiment also builds upon the MFAAD work package: *Nurturing health and well-being within hospital healthcare facilities*. Up to now – since it is normally invisible and intangible – air has been neglected in studies of architecture and material culture. In discussing the 'atmospheres' of buildings, scholars have focused on interactions between people and things and the feelings these interactions generate. Yet without air, there could be no such interactions: not only do we need air to breathe, but it is also the primary medium of perception for creatures such as humans. Thus, the quality of the air is likely to have effects that exceed the purely physiological, to include the varieties of sensory experiences (Ingold et al, 2016). Sampling the air in various modules of ISS to identify the origins of airborne particles in a microgravity environment offered a radical reshaping of the archaeological record (Walsh et al, 2020). The focus on sensory experience and perceptual acuity here can be traced back to Ingold's research on *The Perception of the Environment* (2000) and

my early research on *Walking, Movement and Perception* (Gunn, 1996). Here, we can see how Design Anthropology as a Design Methodology has influenced the design of research experiments to inform the future design of spacecraft and influenced how our material and social world is approached.

Collaborative research and collaborative design

In this chapter, I have presented three live examples of multi-disciplinary research teams, to these I brought experience and theories of collaborative research and a focus on architectural and engineering design processes and practices. Building upon Ingold's theoretical research concerned with building closer relations between the movements of designing and the movements of using; sensory experience and perceptual acuity, and correspondence, this chapter has proposed design anthropology as a design methodology.

Specifically, I have presented how design anthropology, as a design methodology, can provide a different methodological approach for involving sensory experience and perceptual acuity in architectural and engineering design processes engaged with improving air quality in hospitals and ISS environments. I have also shown how anthropological knowledge concerning sensory experience and perceptual acuity can influence architecture and engineering design processes and practices depending on how knowledge is disseminated among design practitioners by collaborating anthropologists.

Here, we can also see how researchers can engage with and take seriously sensorial and affective aspects of collaborative research, engagement and dissemination are not auxiliary to research endeavour, but intrinsic to the research process itself. Such a discussion returns us to a reflection upon the collaborative research process and the importance of designing frameworks for analysis for correlating and co-analysing different kinds of evidence generated through involving quantitative and qualitative methods.

Acknowledgements

Notes

1 Tim Ingold, comment to presenters, Panel "Design Anthropology: Uniting Experience and Imagination in the Midst of Social and Material Transformation",

RAI 2018: Art, Materiality and Representation Conference, British Museum-BP Lecture Theatre, London, June 1, 2018.

2 As Barad says of the notion of *intra-action*, '… (in contrast to the usual "interaction," which presumes the prior existence of independent entities/relata) represents a profound conceptual shift. It is through specific agential intra-actions that the boundaries and properties of the "components" of phenomena become determinate and that particular embodied concepts become meaningful' (2003: 815).

3 McCarthy was a partner at Battle McCarthy (BM) and has since retired. BM is an internationally recognised environmental and construction engineering and landscape architecture company founded in 1991 and located in London. BM has extensive business experience involving biotechnology in built environments. In their design processes and practices, they integrate fundamental research in biological systems with environmental and construction engineering. Gilby was a research associate at BM at the time of our collaboration. He has extensive experience in architectural practice and has worked as a director with Sir Norman Foster and Partners. He was Head of Department at the Architecture and Landscape Department and Director of the Green Project Office, University of Greenwich (1992–2015). Gilby has specialised in sustainable urban design, working on the green engineering of future cities and live community, cooperative and neighbourhood projects in varying climatic conditions including London, Helsinki, Venice, and Cairo.

4 McCarthy was a partner at Battle McCarthy (BM) and has since retired. BM is an internationally recognised environmental and construction engineering and landscape architecture company founded in 1991 and located in London. BM has extensive business experience involving biotechnology in built environments. In their design processes and practices, they integrate fundamental research in biological systems with environmental and construction engineering. Gilby was a research associate at BM at the time of our collaboration. He has extensive experience in architectural practice and has worked as a director with Sir Norman Foster and Partners. He was Head of Department at the Architecture and Landscape Department and Director of the Green Project Office, University of Greenwich (1992–2015). Gilby has specialised in sustainable urban design, working on the green engineering of future cities and live community, cooperative and neighbourhood projects in varying climatic conditions including London, Helsinki, Venice, and Cairo.

5 At present, indoor air quality literature is overwhelmed by studies that rely heavily on quantitative tools such as surveys and questionnaires. My main research contribution at KU Leuven was to present an initial proposition for interrelating qualitative measures of sensory experience and perceptual acuity in the hospital environment. This original research (2017–2018) research has been developed through the work of a PhD student Sara Willems (2021, 2022). Willems has been conducting research since 2020 at various hospitals in Leuven, Belgium and has published the results in collaboration with Prof Dirk Saelens and Prof Ann Heylighen (Willems, Saelens, Heylighen 2021, 2022).

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11 Are anthropologists makers?

Towards regenerative scholarship and pluriversities

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Amanda Ravetz, and Ben Spatz

Introduction

In the first half of the 1900s, many anthropologists were active in public debates, feeling a responsibility towards making contributions to their different contexts (Niehaus 2018). However, following postmodern critiques of scientism and objectivity, and the crisis of representation, anthropologists began shying away from public debate (Eriksen 2006; MacClancy 1996). Instead, most anthropologists came to understand themselves as primarily observers, writing critiques and narratives, which did not address wider world politics and issues directly (*ibid*). Currently, however, there is a shift towards understanding anthropologists as makers[1], and everyone and everything else as makers too for that matter. This is part of a recent onto/epistemic change in wide swathes of anthropological practice that emerged in the early 2000s and is now beginning to become established. In broad brush strokes, the change is from a fixist ontology to what could be considered emergence ontologies.[2] Consequently, anthropologists are becoming more deliberate about the effects of their scholarship (Gatt & Ingold 2013), and as a result, are making all sorts of things as part of their anthropological crafting.[3] Ingold's work has been pivotal in bringing this about.

In this chapter, I trace the shift in my work towards paying increasing attention to what I make as an anthropologist, developing a speculative approach. This has led me to my current trajectory, which is a long-term plan working towards developing forms of regenerative scholarship based on the notion of the pluriversity (Allen & Gatt 2019). Ingold's body of work has been essential in understanding anthropology as a generative practice. Two key ideas from Ingold's work that enable this are the notion of the world as an ongoing process of mutual constitution and the centrality of skill in understanding perceptual processes.

I have worked with Ingold since 2005 in various capacities. Ingold was my doctoral supervisor. Towards the end of my doctoral research, I collaborated with Ingold as James Leach's research assistant developing the field of design anthropology (Gatt & Ingold 2013). From 2013–2018 I managed a sub-project of *Knowing from the Inside* (KFI), called 'Crafting Anthropology Otherwise', for which Ingold was the Principal Investigator. Since then, we have continued to collaborate mainly around discussions on education.[4] Ingold (2018) has developed pedagogical arguments in relation to education as 'leading out', which tally with and further develop his approach since TPE. I have developed my work in relation to education independently, leading to the proposals for regenerative scholarship outlined in this chapter. While our work on education is distinct and separate, the very possibility of developing this work as an anthropologist depends on Ingold's proposals for a world characterized by ongoing mutual constitution. For this reason, rather than elaborating on Ingold's (2018) particular discussions on education, I highlight the generative potential his approach has enabled for my work.

At first, drawing on Ingold's opus, I set out to develop conceptual tools to take seriously the political ecology elaborated by Friends of the Earth International (FoEI) activists, whom I worked with from 2002 until 2012. FoEI activists work tirelessly to incorporate 'cultural diversity' (terms used in their official documents) into the workings of the federation. Despite this deeply held commitment to radical difference, they persistently struggled to generate decision-making processes where difference was the ground for joint work, rather than only 'tolerated' (see Stengers 2011). The biggest challenge was how to take on board another's (political) realities and priorities when that, in the system available to them, implied having to give up one's own. Many vital discussions of difference turned into a zero-sum situation (Gatt 2018).

Both the struggles FoEI activists faced and the argument that anthropologists should study *with* people (Ingold 1993) brought me back to my parallel research and practice in Laboratory theatre, in the post-Grotowskian tradition (Spatz 2019), that I had begun at the same time as doing my undergraduate in anthropology. The key skill we were developing, similar to other improvising performers, was how to offer and receive *simultaneously* (Gatt 2023). In principle, this type of skilled attention obviates the either/or logic I observed in FoEI. For this reason, I went on to explore the skills embedded in this form of theatre training for their broader political relevance in my 'Crafting anthropology otherwise' project.

Aware of the political implications of academic research itself, especially in relation to the claim of doing anthropology *with*, I also set out to develop the research collaboratively. I aimed to extend the question of how to attend to differences in relation to research and collaborative processes. The research led me to critically question and attempt to revise anthropological disciplinary practices, towards designing forms of regenerative scholarship and the possibility of *pluri*versities. In this hope, I participate with so many others who have been working towards this for generations, which would reposition scholarship as a search for making sustainable and equitable lives and communities (e.g. Cajete 1994, Tuhiwai-Smith 1999, Wilson 2008, Wirrer-George Oochunyung 2024).

The pluriversity is a nascent proposal for restructuring academia in ways that counter colonial and imperial impositions of universalism (Mbembe 2015). The idea that only Western ways of knowing can be properly academic has been forcefully imposed around the world and has led to devastating epistemic violence and used to legitimise coloniality and imperialism (Santos 2018; Mignolo and Walsh 2018). By contrast, the pluriversity would be epistemologically plural; rather than being extractive, scholarship would be regenerative. Regenerative scholarship would provide a context in which people are nourished to critically and creatively explore the world in equitable ways, and to generate sustainable ways to make a living.

For this chapter, six people with whom I have collaborated over the years, have generously shared fragments of their hopes and needs, critical imaginaries, stories and reflections for regenerative scholarship, for a future pluriversity. I present them as a collage for two reasons. First, although I envisaged and put this chapter together alone, inviting my collaborators into the chapters as authors of their own distinct contributions is a way to acknowledge how multiple the source and development of ideas/movements really is. In an academic environment in which single authorship and the persona of the individual scholar remain hegemonic, this remains a point that constantly needs to be made. In the difference of their forms their contributions also provide an irritant to that idea. Secondly, because in the current academic environment, certain persons are routinely silenced and ignored, for instance, PoC, Indigenous people, women, LGBTQIA+ people, neurodiverse people, people with disabilities or chronic illnesses, as well as people developing anti-capitalist, degrowth possibilities and so on, the form of a collage can highlight certain specific, even if always intersectional, experiences and offerings.

The contributors to this chapter include academics, artists, and educators; with each of whom I had shared interests in different ways of knowing. Except for Joss Allen and Ben Spatz, the others were part of a workshop that I organised in Aberdeen in 2017, but which was shaped by all the participants (Gatt 2017/2018). The contributors bring performative, Indigenous, recoverist, and ecological/degrowth ways of knowing. They each wrote very differently; they responded in telling ways to my invitation. These contributions are an important reminder of the possibility of a pluriverse of

forms, affects, lived experiences, ways of knowing, and modes of address that can jostle and vibrate in more than one way in the pluriversity.

The politics of dwelling

In TPE Ingold laid out in great detail what he called at the time a 'dwelling perspective'. This was Ingold's proposal for how to (re)consider behaviour and meaning-making ecologically, not only of humans but also of animals and other beings. Coming from an anthropological context in the 1980s and 1990s where, despite the practice turn (Ortner 1984), and notions of culture as co-produced (Tedlock and Mannheim 1995) , human perception and relation to the environment were predominantly still understood as following cultural scripts or being mediated by conceptual cultural constructs. In TPE and later works, Ingold revises these premises: different ways of life emerge from practical, skilled and direct engagement with the environment.

Ingold bases his arguments on a bewildering array of works from ethnography, philosophy, ecology, art, biology, cognitive psychology and many more sources. However, Heidegger's notion of dwelling and von Uexküll's theory of the *umwelt* are central. Ingold puts these notions to work to show how no 'cultural' constructions can be built outside of, or before one's inhabitation of the world. This was the reason why he named it a 'dwelling' perspective. For Ingold, relationships are *constitutive* (Ingold 2000: 187) as opposed to merely contiguous (Ingold 2008). Relationships occur in a single continuous world (Ingold 1993, 2018) where persons, like everything else, are constituted by all the relations in which they participate, this includes relations with other persons, but also with animals, plants, materials, non-human animate beings and inanimate persons or things, with imaginings and wishes and so on.

Many Friends of the Earth activists whom I worked with for my doctoral research, lived first-hand the destruction of their ecologies, their relations, their histories. In this context, it would have been unconscionable to develop an ethnographic narrative based in any way upon an account which did not address politics and power, or even from a relativist and non-engaged approach. The activists themselves, for differing reasons, considered there to be one single world, in which the polluting, violent and extractive actions of some human beings impinged on others, even those the ontologies of those other humans were radically different from their own. Their reasons for coming together as a federation which understood there to be a single world came from necessity; FoEI's one-world approach is the obverse of the forceful colonialist impositions of a 'universe' (Escobar 2017). However, their sense of belonging, as I wrote in my doctoral thesis in 2011 emerged from their ongoing choice to 'co-respond', or to respond together to the issues they faced, to each other and the ecologies and communities they fought for. So, apart from any other reason, to be ethnographically precise, my approach needed to simultaneously take into account the very real effect different ways of life have on others, both human and non-human. Despite the critiques

of Ingold's dwelling perspective as not addressing power (see the introduction to this volume for details), I found that it was the ideal basis, together with Haraway (1988) and Latour (2004) among other theorists, for me to develop a set of conceptual tools that brought various forms of power into imaginaries of emergence ontologies.

The concepts are: vectors in fields of forces, direction of attention and unprotected backs (Gatt 2013a, 2013b, 2018). Their purpose is to enable accounts of forms of power that had been previously separated, such as personal power, supra-personal power, entanglements of human and non-human power as well as both their unintended consequences *and* their intentional strategies (or structure and agency). If the world is an ongoing process of mutual constitution where actions and inaction, choices, refutations, where anything and everything participates in making the actual world, the broader *effectivity* of such things depends on surrounding vectors. The concepts I proposed are a revision of approaches to understanding power and politics from the relational and processual perspective of emergence ontologies. From this perspective, academics can no longer refute responsibility for the effect their scholarship might have in the world, or, in other words, the effect of what anthropologists make (Gatt & Ingold 2013).

Collaborative anthropology

In taking responsibility for what anthropologists make, George Marcus's 2001 article 'From rapport under erasure to theatres of complicit reflexivity' is illuminating. He argues that the trope of the co-production of knowledge in anthropology, arising from the debates around the crisis of representation, has not led to a radical restructuring of anthropological research. Instead, it led to a reproduction of previous, instrumental research practices that are instrumental, or in other words extractivist (Rodriguez 2015) . Therefore, in order to take responsibility for what I make as an anthropologist, it is essential to address what effects such scholarship already has. Marcus proposes that what is needed to counter instrumental research is 'reflexive complicity', that I understand to be collaborative research processes. Therefore, in my subsequent research, I committed to carrying out and exploring collaborative anthropological research practices with laboratory theatre makers. It is important to define collaboration in order to distinguish it from Marcus's (2001) critique of 'rapport under erasure'. Collaboration requires that all research participants are involved in the design (Lassiter 2005; Marcus 2001), that they benefit from the research (Rodriguez 2015), and adapting Stengers (2011), that all participants need to be able to define the terms by which they are drawn into collaboration.

When I proposed a collaboration to Gey Pin Ang, who went on to become one of my main collaborators in the 'Crafting Anthropology Otherwise' project, my only desire was that we would explore how to work together in a way where the ways of knowing we brought with us would have equal value; where one way of knowing would not subjugate or domesticate any others.

The most important thing I learnt through the subsequent collaborative work in relation to that initial question, was that many aspects of the anthropological craft, no matter how small or apparently innocent, participate in epistemic colonialism and require revision to work against it. This includes collaborative research processes themselves (Ang and Gatt 2018, 2018b), teaching (Gatt 2022), reading (Gatt 2023), writing, notation and multimodal publishing (Gatt 2017/2018), conference presentations (Gatt, Galafassi & Ang 2021), academic voicing (Gatt and Lembo 2022) and so on.

Thanks to the incredible generosity of Ang, and many other people who engaged in the collaborative projects that followed, this led me to want to join all those others working to develop pluriversal forms of scholarship. Growing out of this, what could scholarship be? Could it be regenerative rather than extractive? Fundamentally, onto/epistemologically plural? Could there be a shift from the *uni*versity to the *pluri*versity?

The pluriversity

The notion of the *pluri*versity (Mbembe 2015) calls for a form of pluralism which is neither relativistic nor based on a separate worlds model.[5] It draws on the notion of the pluriverse, originally introduced by William James (2015 [1909]) to describe the complexity and multiplicity of lived experience. James argued that such multiple experiences can be shared, but that modernising and industrialising processes characterise fields such as knowledge, states, subjectivity or institutions as *unitary* and *uniform, thereby* obscuring the differences and diversities that actually constitute experience. James did critique the dominance of the one over the many. However, the uni- vs. pluri-distinction is not about the one *versus* the many but rather distinguishes ways of thinking about oneness. The modernist *uni*versity posits oneness-as-homogeneity while the *pluri*versity is based on oneness-as-relationality (Ingold 1993, 2018). In the latter, *difference* is the very basis for developing relationships, and for knowledge to grow.

There are major obstacles to the uptake of such an approach. Contemporary universities do not know what to make of the emergence onto/epistemologies and concomitant notions of the pluriversity and regenerative scholarship. While there are certainly different epistemologies already at work within mainstream universities, for instance, the different epistemologies employed by the humanities in comparison with life sciences, there are many other epistemologies that are routinely excluded. In fact, any epistemology that is not abstractable from a particular way of life, or the relationships embedded in community commitments, is amongst those most often not considered 'properly academic'. Even in now-established disciplines, such as Gender Studies, scholars find they have to constantly defend themselves against the charge of being a political movement and not an academic field (Pereira 2017). The situation for Indigenous (Blaser 2010) or neurodiverse ways of knowing (Manning 2016) is significantly more challenging.

In addition, the neoliberal transformation of universities is resulting in a literal epidemic of burnout, overwork and precarity (Ivancheva & Keating 2020). Alongside the extractive stance towards the environment that has led to current environmental catastrophes, the neoliberal university equally constructs academics as resources (Arantes et al. 2024). What is needed is a form of scholarship that nourishes and regenerates life, rather than one, as is the case in mainstream academia, which subjugates through processes of epistemic colonialism and neoliberal commodification of knowledge, labour and health.

Gladys Alexie

Teaching in this sort of university would be similar to how I teach in elementary and middle school/junior high following Gwich'in educational principles. I would teach students how to live in a tent, living on the land and sitting around a warm stove, working on various projects/products while listening to elders share their life stories.

For example, during freeze-up and trapping season, the boys would learn to prepare their snowmobiles, sledges, snowshoes, winter clothing, and traps and bait. The girls would be learning to sew a clothing item, from beginning to end, be it mitts, shoes, hats, or parkas. They would all be taught survival skills, making a fire, setting up a shelter, ice/water safety and how to use a gun safely.

For the Gwich'in people, language is important; it is our culture, traditions, beliefs, our way of life and survival as a people.

Joss Allen

In the school garden, a row of plants is laid next to a pile of fresh compost.

> "Where should we plant this mugwort?" a student asks.
> "Let's see, how tall do you think it will grow?" asks another.
> "I think around 1.5 metres, so let's put it here towards the back", says another.

Slowly, a garden comes together, but one that looks more like a woodland in miniature; full of fertile edges, layers, plants making way for other plants, no such things as weeds, bountiful, and diverse. A self-sustaining edible ecosystem – nourishment and medicine for the school.

~

Along a north-facing wall in the school garden, a pile of rough-sawn planks of local larch are being transformed. A drawing translated and negotiated from page to place; three compost bays to house a summer's worth of vegetable peelings, leaves and stalks on the turn, soon to be next year's beginnings.

~

In spring, willow is coppiced and cut into rods, to be woven into baskets for the summer harvest. Summer ripenings – a celebration of multispecies doings; the warm breeze heralds a temporary change in pace. In the autumn, students busy themselves gathering apples from the orchard and brambles from the garden – a crumble for lunch. Seeds are collected and cared for, roots and fruits stored, apple trees pruned, and leaves piled. In winter months, the garden does not sleep but makes preparations. Temporalities of season, critter, plant-kin and soil intersect and knot together (Deborah Bird Rose, 2012). These are the rhythms of the school.

~

The garden teaches interdependence, an earthly economy of care and reciprocity (Robin Wall Kimmerer 2013). The garden implicates a troubled history of people and plants. Gardening teaches how to grasp the nettle, to know the closeness of toxin and remedy. Through testing-trowel and failed germination, students learn fellow-feeling. The weeds of the garden whisper to those that listen, 'We were here before you, are constant and ubiquitous companions, and will be here when you are gone (Richard Mabey, 2012)'.

~

Beyond the garden walls, an avenue of linden trees – 'the tree that nurtures community' (Eleanor Brown) – leads through the centre of the town. The school gathers, then slowly weaves its way through the trees. Torsos press up against boles and branches; fingers, like shoots, twist and turn, searching for the sun. Feet become ears and fingertips, eyes. Bodies become with trees. A walk through the town becomes an 'entangled mimetic dance with others' (Natasha Myers, 2015). The school does not stop at the skin.

Ang Gey Pin

I have heard about children who go to a certain kind of school which impressed me. Children learn in nature; they learn different things and don't have to sit in the classroom all the time. Also, when they are very small, they do meditation, which is the beginning of every knowing – knowing the self. Then, they can go on to learn other things. This is very close to my interest in the source within. There is something very rich inside all of us, which is connected to the past. It is very magical: when someone is born, they already know.

What I noticed when I met these children was how free they were, these little humans. There is something different from the young people I have worked with who are educated through the formal education system. They are very intuitive and respond very easily. They do not seem to have a lot of restraints in their bodymind. When we did the workshop in Aberdeen in 2017, and we were teaching each other, I also felt that sort of freedom.[6]

When I began my very first apprenticeship in the Practice Theatre Ensemble, the artistic director asked us each to study our interests and then share them with the others. So, some studied psychology, some studied Stanislavski, and

I studied Grotowski and we each went on reading. After that, we taught each other. In the apprenticeship, we also learnt how to set up backstage, and how to make sounds of thunder, without recordings and this practice; this apprenticeship really helped me when I then went on to do my degree in theatre. When I was studying at university, my body remembered even if I might not have known all the words and names; hearing them made a world appear to me. The words become very vivid for me.

I am currently picking up on music from my Fujian dialect named *Nanyin*, or literally Southern music. It's a very old, over 2,000 years old tradition. This music includes particular ways of singing, with specific instruments, and percussions. This, for me, is to reconnect to something very ancient. It's important to transmit to more people the value of this very old art form. Among the Chinese population in Singapore, many don't know their own dialects and have heard nothing about this ancient heritage.

Based on these experiences, I envision a school or pluriversity for regenerative scholarship. It would be essential to teach/learn outdoors, to best explore the potential of each person, and to find ways to uncover the innate capacity in each of us.

Also, it is important for this to be set in a natural setting, not the classroom, the explorations we do would not be so rigid. Essentially Taijiquan and Qigong will be the source of training within this dream school, to discover the different modes of learning for each group of students. And these are all related to people's potential and their wellness.

Valeria Lembo

In my experience as an anthropologist working within the field of Health and Social Science, knowledge is structured in a logocentric, analytical way. While storytelling and narratives are certainly present and utilised, these are subservient to the dominant logocentric way of organising and shaping knowledge. In my daily life as a Social Science researcher, I have experienced logocentrism as a constraint, in the way it shapes our scholarly modes of knowing; not only the ways we present our work, our articles, pieces of writing and presentations, but also in the way we encounter colleagues, research participants and co-researchers, within formal and informal contexts. This logocentrism doesn't give space to other ways of analysing and synthesising, and to more intuitive aspects of knowing.

I think something that has *regenerative* potential is to open up to other ways of knowing: poetic ways of knowing, storytelling, and non-verbal knowledge practices. I feel a need to open up the Social Sciences to non-logocentric possibilities, and non-analytical experimentation. I long for a break from bullet points.

Bullet points and models are everywhere in my field, they are almost an organizing principle. Everything always has to be clearly categorised. Bullet points *can* clarify things; they can be useful, but if we are always thinking

in their terms, what are we missing out? What are we missing out when we impose this bullet point mode of thinking and ask people to summarise their work into, for instance, four points?

I would like to be part of a form of scholarship where there is an acknowledgement of the limitations of this organising principle. A scholarship that can facilitate a space for opening up to intuitive ways of knowing; one that is not exclusively text-based or bullet-point organised. A scholarship that allows contradictions and non-clarity to be present, that acknowledges the contingency of different epistemologies. Regenerative scholarship, for me, is about being aware of how our education has been shaped historically. And now, we are at a point where we *can* open up to other ways of knowing and researching.

During the workshop you organised in Aberdeen in 2017, what really stuck with me was how Gladys Alexie shared her knowledge about the land in Fort MacPherson (Canada).[7] She talked about local plants, and it was a narrative. It felt like a walk through the land; a way of sharing knowledge that we do not usually experience in an academic context. In regenerative scholarship, I would definitely feel the need to give more space to storytelling, movement, poetic and non-analytical ways of knowing. What the intuitive, the poetic, and the non-analytical can open up is a space for the unresolved.

Analytical ways of organising writing or content are dead in a way. What they offer are accounts in which things are already clarified, presented as finished, and stated as truth. There is no space for anything that goes forward, that is not finished yet. A regenerative scholarship can instead transport you forward and give space for something that is not yet clear, or not yet known.

Ben Spatz

Of the book

Bringing a camera into a theatre studio was a big discovery for me. But I did not begin to understand the implications of this transgression until Caroline arrived, as a guest, and invited us to bring our books into the studio also. Then everything changed.

In some way, bringing a book into the studio was an even greater transgression for me than bringing a camera. Why was that? The camera's power and danger are well-known: It captures, records, steals your image, takes your audiovisual body, and distributes it across time and space. But a book? A book is silent. It sits there, waiting to be read. What kind of violence can a book do? How could I find books so dangerous, so powerful, that I had banished them from the space of 'practice' even more strictly than cameras?

Anyone who has learned about the history of colonisation in the Americas knows that nothing is more dangerous than a book. Whole peoples were

barred from reading on pain of death, while others were forced to read, again on pain of death. European Christianity wielded the Book as cruelly as it wielded guns, germs, and steel. And we have not escaped the former any more than we have escaped the latter. The Bible continues to dominate, as much in Israel/Palestine as in the United States. But the more powerful church today is that of finance: a vast, interconnected book of Numbers in which the value of everything is imagined to be written. The great book of logocentrism, in which what is written is considered to be more real than life itself.

If I have a place in the regenerative pluriversity, it is as a person of the book—but not that book. A different book and a different way of being *of* it. I know that letters are flames and books are made of fire. This is why, in the act of reading, it is 'as if the room became brighter and larger'.[8] But this fire is not a weapon. It does not announce the Word of God unless that Word is equally spoken by the wind, the mountains, the rivers, and all their kin.

Like a spade for the earth, like a pot for the kitchen, the book is a tool for thinking. We should carry the book lightly, honestly, alongside our other tools. Maybe, if we can remember how to do this, then we will not have to banish the book from the future of the world.

Amanda Ravetz

Another way of studying

In a school like this,

> I would learn the art of recovery,
> each limbic stria
> a microroute of undergoing.

> Along the river bank
> birch leaves lift and twist
> like eyelids opening.

> "There are a thousand doors to happiness."
> Evening illuminates
> rose-coloured robes;
> earthly greens
> on indigo blue.

> Who are you,
> …a shape, a sound,
> a happening?

> "The thing without a name."

Young children under-common
in kelp forests of snot and complicity.
They shudder inside subterranean floes,
whispering.

"We are all walking each other home."

Regenerative Scholarship and a system of Pluriversities

The years of working with colleagues, including those who shared their thoughts above, reading, and remembering have led to the following basic principles. Eventually, these will be the basis for establishing an actual place of learning and study, which is what I am committed to making as an anthropologist.

Drawing on anthropological practice

The orthopraxy of most academic disciplines is founded on what Savransky (2016: 16) has called an 'ethics of estrangement'. In a unique way, anthropologists suspend this ethics/epistemology during fieldwork, and it is precisely the immersion of a whole person in the ways of life under study that is understood to be the source of knowledge. Regenerative scholarship would extend the onto/epistemology of anthropological fieldwork to the whole process of education and scholarship. This does not deny the importance of moments of reflection and analysis, but it acknowledges that these, too, are bodily practices, with material effects on bodies and the wider world. And vice versa, apparently, 'practical' tasks enable distinguishable forms of attentiveness and knowledge of equal value to so-called 'intellectual' ones.

The practices of critical reading and writing, including ethnographies, would still be important. In fact, critique is essential to the work of recognising oppression, subjugation and discrimination. In order for relations to be equitable, parties need to be able to disagree (Stengers 2011), and safely, without concern that their critiques will be used against them. But it would also incorporate other activities as routine parts of studious practice. Growing, preparing, and enjoying food; reincorporating all forms of waste; tending to dependents of all sorts, the land, animals, and buildings; relating to surrounding communities, humans, and more-than-humans will all be central to the work of critically exploring and addressing questions of subsistence, exchange, history, politics, health and wellbeing, religion, cosmology...

Sustainability and equity require decolonising scholarship

Regenerative scholarship requires that all forms of aggression, including microaggressions.[9] Different ways of knowing will not be undervalued based on a priori assumptions (Gatt 2022). Scholars will not only be those with

credentials from formal educational systems but include bearers of knowledge considered teachers in their communities. Building networks with Indigenous, and alternative institutions and valuing already existing alternative forms of education and scholarship will be key.

However, in order not to simply reproduce the current system of *uni*versities, what will be required is to reorient our understanding of knowledge, from the Western abstractable 'good' to emergent, emplaced and situated concrescences. Dylan Robinson (2020), *xwélmexw* (Stó:lo) sound and Indigenous studies scholar, writes that moving 'toward anticolonial listening practices requires that the "fevered" pace of consumption for knowledge resources be placed aside in favor of new temporalities of wonder disoriented from antirelational and nonsituated settler colonial positions of certainty' (2020, 53). In fact, Conquergood (2002), who identifies logocentric forms of writing in anthropology as participating in 'subjugating' other knowledge, argues for knowledge to be located, engaged and in solidarity, rather than transcendent, abstracted, and separated off from daily life.

Embedded in local/global communities

The pluriversity will need to explore how knowing can both be shared widely as well as sometimes understood to need to remain localised. Importantly, there will be a structural implication of this. It will be essential to enable families, young people, elders, kin, relations, and odd-kin of all sorts to be equitably involved in the process of the scholarship. Exploring questions of kinship, relatedness, and community in tandem with people of different ages and levels of engagement is not only manageable, it is also a vital political move that will enable scholarship to be accessible to groups and individuals that are often 'externalized' (Escobar 2008, 169).

The broader question this raises is about accountability and accreditation. Which constituencies would the work regenerative scholarship be accountable to? How are those different constituencies different to conventional academic ones? What effect would shift these audiences of legitimation have on, for instance, the discipline of anthropology, on scholarship more broadly, as it currently functions? Following Freierian educational philosophies, it would be the communities the knowledge grows from that would be the environments of legitimation and accreditation. How wide such communities need to be would depend on the issues are hand, as Friends of the Earth activists find in figuring out how to run each and every one of their campaigns (Gatt 2018). Together with a shift in what knowledge is understood to be, the whole system of accreditation also requires revision.

However, 'communities' can be equally oppressive, or resistant to otherness and change. Echoing Gopal (2021) and Ram (n.d.), who give examples of the notion of the rights of the individual being put to work to combat violence against women in former colonies, it is also possible that elements of

modernity may be repurposed from the ruins of coloniality and imperialism (Tsing 2015).

The elephant in the room is money. All forms of monetary support will, in some way, issue from and participate in contemporary capitalist systems. There is no space here to go into detail however it is important to mention a few points. The current plan for funding such an initiative is based on community-owned organisations and institutions. Examples include the Dechinta College, in Yellowknife, Canada and Deveron Projects, Huntly, Scotland, both of which pay particular attention to being both locally embedded and developing broad thinking and relationships. Other possibilities include different forms of private investment, to get the project off the ground. Further, the Findhorn Foundation, Scotland, is attempting to put in place forms of off-setting for carbon emissions that take into account chains of production and exchange. This means that it is not only the immediate goods and services purchased that are offset but also the proportional emissions of for instance banks, insurance companies, communication networks, etc. This method of taking into account chains can also be taken on board for considering how the pluriversity will engage with the wider world.

In sum, the work of regenerative scholarship is to figure out, through collective processes, what can be salvaged from the ruins, and re-imagined through the many ways of being and knowing that have been silenced for too long. This is what anthropologists can participate in making. Importantly, imagining also participates in making the world (Ingold 2022), therefore speculative proposals also have actual effects in the world. The work of Tim Ingold, and his detailed elaboration of the world as an ongoing process of mutual constitution, and of perception as practical and skilled engagement, enables a revision not only of scholarly understandings of how humans engage in the world but also of scholarly practice and engagement with the world.

Notes

1 For example, the conference theme of the Association of Social Anthropologists of the UK 2023 is 'Anthropology in a Speculative Mode'.
2 See Introduction to this volume for details regarding the ontological turn, critiques of this and Ingold's relation to that. Thanks to Germain Meulemans for introducing me to the term 'fixist'. The assumption that crafting texts and arguments is not also a form of making that has wider consequences is itself a part of this fixist ontology.
3 Examples include the Ethnographic Terminalia exhibition which, from 2010, was organised to coincide with meetings of the American Anthropological Association, the labs introduced into meetings of the European Association of Social Anthropologists from 2014, and those of the Association of Social Anthropologists from 2016, and over the last decade the emerging field of multimodal anthropology which has quickly received attention and formal recognition. But note also Veena Das's (2010) argument that what anthropologists make are relations.
4 See for instance the 2022 ASA Studio 1 'Anthropology as Education' www.theasa. org/conferences/asa2022/studios#11566 (accessed 9 December 2022).

5 Also see la Paperson 2017.
6 See Gatt (2017/2018) and Gatt (2022) for details about this workshop.
7 See references mentioned in Gey Pin Ang's piece above.
8 Buber (2002: 58).
9 See Bafo and Dattatreyan (2021) for details of cumulative racist microaggression in an anthropology department in the UK.

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12 The Trowel and the shaping of worlds
Humble handtools, time and imagination

Rachel J. Harkness and Cristián Simonetti
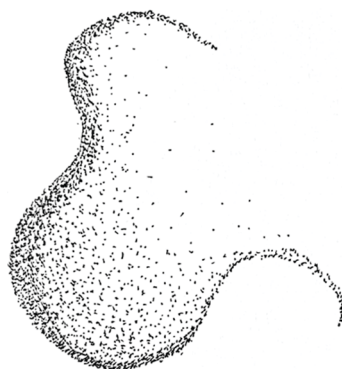
Introduction

In this contribution, we explore the material and sensory worlds revealed and constructed by archaeologists and eco-builders in these times of climate change. We begin with a humble hand tool found in both their practices, the trowel. We consider how trowels might act as prisms in both the uncovering of the past and the building of the future. As we watch the archaeologist scrape away the layers of time, we see the counter-movement of the eco-builder who adds layers of earthen plaster to the wall they have raised. But these practices with trowels reveal more than simple removal of earth versus its application: both are creative crafts of careful surfacing, made possible by trusted hand tools. Our discussion, therefore, follows how portraits of these tools-in-use, these simple technologies, might speak to the relation of care between reality and imagination; a relation that, as we hope to demonstrate, enfolds at the trowel's edge and affords an understanding of the ground that challenges the standard stratigraphic view of earth history, and the place modernity occupies in it.

As the archaeologist and the builder work, we see them making things manifest and skillfully attending to their crafts, and we acknowledge their creativity

within streams of material and energy and the flux of the environment-world that all these aspects participate in generating. This is, of course, a world in which our human social world, and its dimensions of power, are very much entangled with the other-than or more-than-human. Building on the work of anthropologist Tim Ingold, first our doctoral supervisor, then our mentor and colleague, our discussion considers how humble tools, such as the trowel, might help illuminate the relationship between reality and imagination differently. It argues that there is a radicalism here – if a quiet one; a radicalism of both *other ways of doing,* and of *researching-writing about these other ways of doing.* Ultimately, we draw upon these examples to think about the necessity, as both academics and as citizens of a shared world, of going along alternative routes and across non-professionalised as well as professionalised and inter-disciplinary grounds in order to cut what is still a hopeful path through these landscapes of the Anthropocene.

But first, to the tools!

The archaeologist's pointed Trowel

The WHS 4" is the standard trowel used for archaeological excavation in the UK, recognised as the single most versatile digging tool archaeologists can carry around digs (see Figure 12.1). Forged in a single iron piece, and mounted in a wooden handle, the WHS 4" trowel is designed for gestures

Figure 12.1 The WHS 4" pointed trowel used by archaeologists. Photograph by the author.

including scraping, dragging, contouring, cutting, and removing, which archaeologists often perform towards their bodies, as they crawl backwards, taking care not to step on the surfaces and findings they uncover. For those accustomed to earning a salary working in archaeological digs in the UK, the WHS 4" is a symbol of labour. WHS are the initials of the company that produces them, namely William Hunt and Sons. Informally, for these professionals, the initials stand for the sense that they have to 'work hard or starve'. Unlike the rest of the tools in an archaeological dig, these trowels are not to be shared. Being personal, the trowels can hold in a record of the archaeologist's enskilment, as they grind differently depending on dexterity and handedness. Knowledge and biography of an archaeologist meet at the trowel's edge which, according to important theorists, is where archaeology takes place (e.g. Hodder, 1997: 694). It is in the slow grinding of its surface, against the emerging surfaces of the past, that archaeology carries on.

The eco-builder's Trowel Float

The stainless steel Swimming Pool Trowel Float, with its soft rubber handle rising out of the back of a small flat sheet of steel, is around 35.5cm long and just over 10cm wide and weighs about 325g (see Figure 12.2). Both of its short ends are gently curved. It comes recommended by teachers of how to build off-grid eco-buildings, called Earthships, on the desert plateaus of New Mexico. Although a tool designed for shaping swimming pools, in the hands

Figure 12.2 The Swimming Pool Trowel Float used by builders. Photograph by the author.

of self-builders[1] building Earthships, it is favoured for earth-plastering the curvilinear forms of these buildings. Earthships are off-grid environmentally-friendly buildings that originated in the 1970s. Determined by the four architectural principles of passive solar design, thermal mass, reclaimed materials and autonomous (energy) systems, they are designed to challenge what their builders see as the environmentally damaging, exploitative and alienating mainstream Western housing system. Earthships draw energy from the sun and wind, collect water from rainfall and are made of natural and reused materials. The pool trowel float has none of the sharp corners of the conventional trowel that might dig into the Earthship's rounded walls, creating unhelpful nicks in the smooth earthen-plastered surfaces. Instead, it allows the plaster, a rich mud mixture flecked with tiny pieces of golden straw, to be pressed onto the walls of the building interiors in layers until the surface is regular, smooth and unblemished. This trowel float is rather emblematic of Earthships because it shares unusually curved forms with them, because of Earthship builders' insistence on the importance of low-tech self-build in tune with the environment, and because it plays a key role in the careful work of creating walls of earthen 'adobe' plaster. The eco-builders hold it, and feeling its weight and balance, they use it to sweep across the surfaces of their building, both inside and out, tying places together, and creating a recognisable aesthetic – one that brings the earthen tones of the outside, and inside. The trowel float can symbolise the empowering and imaginative movement of taking up tools and building one's own shelter in close relation with the environment-world. This is a way of building around oneself that acknowledges the flows and dynamism of materials and forces within the wider environment-world, and that is something that remains rather alternative in today's Western societies.

Trowel (ing) – in – the – world

> This means that in dwelling in the world, we do not act upon it, or do things to it; rather we move along with it. Our actions do not transform the world, they are part and parcel of the world's transforming itself. And that is just another way of saying that they belong to time.
>
> (Ingold, 2000)

The trowel, common to both archaeologists and builders, is a key tool with which humans have studied the past and built up the future. Whereas digging in archaeology is traditionally regarded as an act of scientific discovery, building is often conceived as an act of creation. All sorts of trouble surrounds this distinction. On the one hand, the distinction implies that creation results from a process of innovation abstracted from tradition and the material transformations in which it subsequently becomes instantiated (see Ingold and Hallam, 2007). Underlying this assumption is the so-called hylomorphic model, inherited from classical times and according to which

a design results from the imposition of a mentally preconceived form onto raw matter. Yet, as Tim Ingold (2013) has argued, inspired by the work of philosopher of technology Gilbert Simondon, formation processes are never divorced from the ongoing history of material transformations.

Correspondingly, on the other hand, the distinction implies that the scientific study of the past involves the encounter of a ready-made past. Indeed, suggesting that archaeology involves crafting the past sounds counterintuitive to most practitioners of the discipline. This is especially so to those accustomed to model the discipline on the secure protocols of modern science, according to which true knowledge results exclusively from the act of inspecting a world at a distance; a world that has been given in advance of the act of observation. Yet, 'an act of craft' is precisely what defines archaeological excavation. Archaeologists need to trowel carefully, one at a time, the layers of soil that cover the surfaces and findings they wish to study. In doing so, they must trowel across fine – as we argue co-created – lines that form at the meeting of each layer.

According to Matt Edgeworth (2012) – in an argument much inspired by Ingold's reading of philosopher Gilles Deleuze and psychoanalyst Felix Guattari (1987) – what archaeologists learn to do is to 'follow the cut', to 'follow the material'. Trowelling such lines involves the risks of digging more or less than is required, therefore, respectively creating the surfaces of the past or leaving them buried under more recent soil. In striving to follow such lines, expert archaeologists learn to perceive the subtleties that distinguish different soils and to project their attention imaginatively beyond what is immediately visible, using multiple senses. Much like building, digging in archaeology is a craft similar, perhaps, to plastering, in that surfaces do not predate the act of trowelling but coincide temporally with it (Simonetti, 2018).

This should not be read regrettably, but as a true fulfilment of the historical condition of a discipline dedicated, par excellence, to the study of historicity. Far from static, the past that archaeologists study, as they trace the footsteps of those who preceded them, is subject to ongoing material transformations, as well as ongoing transformations of how the past is imagined and interpreted. If archaeologists are to understand the past at all they need to recognise how they participate in those transformations, much like builders engage in the practice of creating future surfaces through which to carry on with life. Similarly, and conversely, trowelling in building creates surfaces from scratch, as it is always informed by past material transactions. At the edge of the trowel, past and future, reality and imagination, meet. Put differently, through trowelling, builders and archaeologists imagine, for real, the transformations of a landscape that humans inhabit, and have inhabited, as they move forward in life (Ingold, 2021).

This irrefutable historical condition of our human relationship with the landscape explains why for Ingold, 'the practice of archaeology is itself a form of dwelling' (2000: 189). Ingold's claim relates generally to his approach to anthropology, which he baptized famously in his *The Perception of the Environment* (TPE) as a 'dwelling perspective' (2000). This approach starts

by situating humans amidst their active engagement with the constituents of their surroundings; it is an ecological approach to sociality that fundamentally overturned traditional divisions between naturalistic and culturalist understandings of the landscape.

The inspiration for Ingold's ecological approach to sociality comes partially from the writings of philosopher Martin Heidegger (1962). Heidegger proposed that contrary to the modern dictum that starts by separating what is objectively out there from what is subjectively inside us, humans find themselves always already immersed in correspondence with their surroundings, an idea inspired by the work of semiotic biologist Jacob von Uexkül (1957). According to Heidegger, humans should not be conceived as subjectively isolated from the world but as suspended in a web of relations with each other and their surroundings; a conception he famously summarised with the expression Dasein and according to which *being* (sein) human is to be *there* (da) in the open. Humans are, in essence, what Heidegger described as being-in-the-world-with-others, an ontological determination constituted historically.

There are numerous resemblances between how Heidegger understood our access to the historicity of our being-in-the-world and trowelling. According to Heidegger (1962), accessing the truth about Dasein's historical constitution involved a process he described using the Greek term *a-letheia*, meaning discovering, which necessarily involved a simultaneous counteract of lethe, or covering. Arguably, Heidegger's inspiration for the term came partially from the earth sciences accustomed to studying the past in the ground (Edgeworth, 2006). This understanding was likely informed by Heidegger's mentor Edmund Husserl (1966) who argued that consciousness was sedimented over time, much like the archaeological record, allowing us to have a sense of continuity between past, present and future.

Yet, Heidegger's argument around how humans find themselves immersed in their surroundings as they dwell, related also famously to the act of building. In his celebrated essay 'Building, Dwelling, Thinking', written in response to housing shortages and the need to quickly rebuild Germany after World War II, Heidegger traced the etymology of the verb 'to build', to conclude that the term originated from the Old English and High German *baum*, which means 'to dwell'. In his words, 'We do not dwell because we have built, but we build and have built because we dwell, that is because we are dwellers… To build is in itself already to dwell… *Only if we are capable of dwelling, only then can we build*' (Heidegger, 1971: 148, 146, 160, original emphases). Much like archaeologists, builders *can* build only because they participate in the ongoing historicity of the world that mutually constitutes them as they dwell. Trowel in hand, archaeologists and builders simultaneously participate in the unfinished act of trowel(ing)-in-the-world-with-others, human and non-human, past and present, as they excavate down the past and build up the future.

Yet, according to Ingold's (2021) most recent work, what is at stake in archaeology and building is not simply an act of covering and discovering

perfectly demarcated surfaces that are simply arranged hierarchically as the stratigraphic study of earth history or the act of paving the city's ground might make us believe (i.e., indeed, how both expert archaeologists and builders learn to trowel, mostly by pretending that the surfaces they create are there as if by necessity). Builders, accustomed to working nowadays with concrete, aspire often to level a new ground for modernity to carry on its narrative of transcendence by systematically trowelling away the very same gestures that give shape to the form. Similarly, archaeologists are thought to cover their tracks and erase their gestures as they trowel, pretending as if the surfaces of the past they uncover are the original ones (Harkness et al., 2015).

In *Imagining for Real* (2022), Ingold has critically engaged with this stratigraphic view in relation to archaeology, to challenge the conception of the ground as composed of a series of superimposed layers that culminate with the horizontal pavement of the modern city – an artificial stratum regarded currently as indicative of the arrival of both modernity and the Anthropocene (Simonetti & Edgeworth, 2022). According to Ingold, digging in archaeology results from an anti-stratigraphic gesture, resembling how palimpsests used to be composed in medieval times. Palimpsests resulted from the need to reuse precious parchments, as past inscriptions were scraped off to allow new marks to be made. These marks did not just sit on top of older inscriptions but penetrated into those of the past: in a palimpsest, the present does not simply sit on the past in hierarchical arrangement but carves into the past to reveal it, with the result that both past and present infiltrate each other. As archaeologists participate in the temporality of the landscape to follow in the footsteps of predecessors, they must necessarily cut through past soils with their trowels to unearth them. A similar thing occurs with building: when considered from the viewpoint of its foundations, any new building must penetrate through past soil to make room for emerging surfaces with the result that past and future infiltrate each other in the present in anti-stratigraphic arrangement.

Arguably, it is through humble tools such as the trowel that an anti-stratigraphic understanding of the ground can be primarily afforded; the contrast between the stratigraphic and anti-stratigraphic understandings of the formation of the ground, proposed by Ingold, corresponds roughly to that between so-called high and low technologies. Current information technologies are used increasingly in contemporary archaeology and architecture, to map strata and to project builds respectively, which tends to reinforce a stratigraphic view of history. It is, to this contrast, that we now turn as we look at contemporary, yet low-tech, earth-building practices.

Low-tech and lively building

Sites where Earthship-builders wield the trowel float begin with digging, with pick-axes, spades and small digger trucks. Carved into the earth, these dwellings are then constructed further from it, and in the movement of

earth – not least as it is moved up into new edifices that are characterized by the material – these sites clearly show that excavation is very much a part of construction (Harkness, 2013). In construction processes such as these, Earthship-builders use simple tools and what they call 'low-tech' technologies. As well as using hand tools such as the trowel float, the sledgehammer, the spade, and basic 'power tools' such as the drill driver or circular saw, they argue that low-tech means of building make for a more inclusive environment, a democracy of construction, where access to building and dwelling (ecologically) is not limited by needing access to the wealth and specialist skill required for high-tech approaches. Here, in their humble tools, we see examples of limited, socially-embedded tools. This is reflected in wider eco-building spheres, where builders promote these 'simpler' technologies, still today, at a time when in wider society so much is being made of automation. The eco-builders' use of these tools is revealing: limited tools are helping people to skilfully attend to their crafts – the learning and teaching of them – and their materials, whilst simultaneously helping them keep an eye on the bigger pictures of shelter and the plight of the environment-world. After Hassan Fathy, writing on the human scale in building (Richards et al., 1985), the eco-building movement can be understood as somewhere where limited tools help make processes of production palpable (Harkness, 2009). They also help the people who will dwell in a place decide how to shape it through key participation in its construction (Harkness, 2009).

As we will see, Ingold's writing about tools and skill in *TPE* (2000) gels with this recognition; it also calls the book's readership to take up tools as a way of learning about the world. This way allows the researcher to spend time with and 'work-alongside' makers, creates spaces for conversation and provides a sense of what the maker's process is, what motivates them and what things and ways of life they are imagining or dreaming of creating. To wield the tool and manipulate materials with it, in place, offers rich direct sensory engagement with the stuff of the makers' lives and environments. However, because of technology's non-neutrality and its ability to act as a mediator, selectively enhancing some aspects of the world that are experienced and therefore neglecting other aspects (Ihde, 1990), researchers should also ask what might the trowel (or the spade, or the sledgehammer, etc.) and their wielding, enhance and neglect, reveal and obscure?

Ingold's thinking on this in *TPE* was that 'technical relations are embedded in social relations, and can only be understood within this relational matrix, as one aspect of human sociality' (2000: 314) and furthermore, that a shift from skill (*tekhne*) and tools (*mekhane*) to 'technology' and the 'machine' has simultaneously seen the 'disembedding of technological relations from their matrix' (2000: 317). Methodologically, as well as theoretically, then, an ethnographic approach to research that centres one's own labouring-, learning-, and work-alongside-others, with limited tools such as the trowel in hand, can be part of a re-embedding. In our experience, this approach encourages the development of a multi-sensory attentiveness to

place, to materials, to processes of learning and becoming skilful, to the body within the wider environment-world (Harkness, Simonetti & Winter, 2015). Furthermore, it resonates deeply with observations from our fieldsites, where low-tech approaches to building, which tend, in turn, to depend on more labour power and reductions to the complexity and scale of people's architectural desires (Harkness, 2009), can be understood as recentring the person in the process of building and a re-embedding of technical relations into their matrix all whilst simultaneously incorporating a consciousness of the earth/ Earth.

It is important to note that these arguments draw heavily upon self-building, a form of building that is for the people, by the people (Harkness, 2009). This sort of building highlights people's power to overcome alienation through the lifting of tools and working together, not in terms of agency as such, but as this recentring of people in the process of building from which they have become separated (even excluded, as it has become a professionalised realm), as mentioned above, and through a challenging of dominant growth-focused ideas of work and value in neo-liberal capitalism that too often create cultures of exploitation and degradation of people and place. Furthermore, self-build eco-builders show that this centring does not come at the expense of an awareness of what is happening further afield. In fact, returning to Ihde (1990) and Ingold (2000), they see the immense amounts of work, labour and environmental impacts behind technologies or labour-saving devices, and see their own labour with low-tech tools as an alternative to this. Eco-builders' approach is not dissimilar to anthropologist Alf Hornborg's argument that there is a need to recognise the unequal social exchanges that prop up or characterise high-tech technology in the world system (2003). As Hornborg (2003) goes on to explain, 'hightech sectors of global society presently celebrating their efficient use of time and space appear largely oblivious of the extent to which this "efficiency" has been made possible by exploiting vast investments of human time and natural space made, historically and presently, elsewhere in the world system' (2003: 8).

These threads of thinking that explicitly critique capitalism, that consider the relations and ethics of labour and dwelling, can be added to and interwoven with those laid down by Ingold around technology and the machine. These two approaches together help reflect the importance of things such as labouring bodies in construction, the gender relations of building sites (including acknowledging the existence of alternative ones where, for example, women lead and make up considerable numbers of the workforce), and the power dynamics and reach of building projects within global systems. This is, in effect, to blend in Marxist approaches to questions of dwelling, allowing a focus on concerns of justice, work, labour and value.[2] Eco-builders show us ways of looking at activity in the world that very much fit an Ingoldian understanding of the dynamism of the environment-world in the broadest sense (Ingold, 2000, 2007, 2012). The humble hand tool helps render visible more of these relations within building and further illuminates

ways of perceiving activity (such as archaeological or building work) that fit with an Ingoldian understanding of the dynamism and potential of the environment-world (Ingold, 2000, 2007, 2012).

Picture the scene: in a building being built from earth, the multiple trowel floats, wielded by the builders, skim around the mud-lined curvilinear forms of a building, their metal flashing. The pressure exerted onto them transfers into the straw-flecked earthen walls, condensing and smoothing them. Arms arch and swoop into the mud mixed for the plastering: the action is dance-like, and the materials have come up out of the place itself. Annually, the dance will return, to maintain and refinish the surfaces of the home.

Working with builders, one can begin to see how building is the bringing together of things, their fixing in place for a time, and their efforts to maintain them against the forces of entropy (Harkness, 2009). Eco-builders speak of streams of resources meeting on site and the pre-life or history of the stuff they are working with, as well as their future potential impact (Harkness, 2009); so these are streams with histories and futures, which can be traced and projected. Building sites, thus, become visible as places of concerted action and the orchestration of people, ideas, tools and materials (Harkness, 2022).

This perspective on/of buildings and sites invites people to consider towns, buildings and landscapes anew; as accumulations and agglomerations of materials, as the patterning of a material world in motion. In this revised understanding of building, accumulations can also be seen for the removals or dispossessions they have caused elsewhere that – as Hornborg (2003) noted – are often global. In Heideggarian terms, the bringing together of things in (a) building can be seen in that 'farmhouse in the Black Forest' which features in *Building Dwelling Thinking* (Heidegger, 1977: 338). Here, Heidegger describes the farmhouse building as the concrescence of what he calls the 'fourfold' of earth, sky, divinities and mortals (Heidegger, 1977: 328). This concrescence might be interpreted as a way to think about the unity or entirety of a thing, how microcosms might hold a macrocosm and vice versa, and how, in building homes in particular, people create something holistic in nature for a time (Harkness, 2009).

Perhaps striving to reconcile knowledge of our individual minuteness with our potential for creating wider social and environmental change is a holism that is neither totalising nor fixed. Ingold's ideas, taken mainly from his writing about materials (not materiality![3]) (Ingold, 2007, 2010, 2012), explain this non-fixity well: depicting a world that is moving, and alive. This is what is visible when spending time in the field with eco-builders: out, in amongst the weather which feeds the power and water systems of off-grid buildings; or working on a site with materials sourced from the place, such as sheep's wool or mud dug from the earth or wood cut from nearby forests. That is the porosity of the holistic *thing* that is the building. It is visible as a characteristic that simultaneously connects and continues the world's coursing through the building, the world's coursing *being* the building.

The lines of the world (which of course lace not only horizontally, but in all sorts of directions and shapes including up and down through the earth) can be seen to be flowing through/in builders' constructions. In 2004, Ingold summarised this lively and alternative view of buildings when he suggested:

> …that a building is a condensation of skilled activity that undergoes continual formation even as it is inhabited, that it incorporates materials that have life histories of their own and that may have served time in previous structures, living and non-living, that it is simultaneously enclosed and open to the world, that it may only be semi-permanently fixed in place, and that it affords scope for movement in inverse proportion to its scale. Buildings, in short, are not so different from organisms. They are raised and nurtured in an environment that includes, most importantly, their human as well as non-human builders-cum-inhabitants; they embody – in the life that goes on within them – their relations with their surroundings; and they figure as an integral part of the environment in which the manifold beings to be found in and around them grow up and live their lives.
>
> (Ingold, 2004: 240)

This liveliness is more discernible in eco-building than in other building because its ecological design seeks to make visible and connect with natural systems, flows and materials, against a more conventional tradition that does not prioritise this or even demonises it.[4] However, even in the latter, liveliness is a characteristic: for as much as it might be denied, their building materials are also resourced from the environment and they and their inhabitants also exist within time, within the weather-world, and in relation to those around them.

Even when this ongoing liveliness is acknowledged in the building process, it is often considered to cease once a building's main construction is finished. The phenomenological tradition of keeping a focus on doings can combat this though: the focus, here, is then on movements, gestures and actions, such as the scraping or smoothing of earth with a trowel. This unfinishing approach sees 'architecture as a verb' (Harkness, 2017a), and helps all buildings be understood as retaining something of the people and activities, sounds and movements that constitute(d) their making and maintenance.[5]

Taking this idea of lively building, with its spatial and temporal aspects, in combination with eco-builder concerns with ethical sourcing and the far-reaching routes of materials to the site (along supply chains and distribution routes), or the global nature of environmental problems like climate change, allows a further delving into the ways in which building can be understood to connect or relate the builder to other times, people(s) and places (Harkness, 2009; Anusas & Harkness, 2016). These themes of relation and connection – often across large distances and timespans – are themes reflected in the wider practices of ecological design, where there are increasing efforts to herald processes of making and consumption that are cognisant of their

environmental impact both 'up-' and 'down-stream', as well as attempts to lessen the damaging traces they might leave in soils, bodies, air and waters.[6] Another way to acknowledge, emphasise and interrogate the liveliness of buildings, then, is to make works that trace and follow and speculate upon the trajectories of building materials[7], allowing consideration of what their movement through hands, environments, markets, and even time, might reveal.

Moving along in times of crisis

Eco-builders' ways of relating to the world, tool choices, and their ability to make their environmental values manifest in built forms, show clearly that issues of power, empowerment and action are at the heart of building. By this, we mean something towards that power to take the stuff of imagination (values that are held dear, glimpses of things seen elsewhere, skills and materials known, hopes for the future) and to create something physical out of them by using the (ecological) resources one can reach, wielding one's tools, collaborating with others, and working within the currents of the natural environment-world. Building can be understood as a practice of bringing together the actual and the possible (Harkness, 2009).

Empowered to build differently then, eco-builders such as Earthship builders are keen to argue that their building efforts – despite being off-grid and self-built – are not to be understood as a withdrawal from the world. Their buildings, they say, are fully *in* and *of* the contemporary world. As we have suggested here, this similarly occurs with regard to archaeology, the practice of which does not sit upon a ready-made world but is rather in and of a world in constant becoming. Much like Earthship builders, archaeologists labour to find themselves ecologically at home in a world in ongoing transformation. Paraphrasing Ingold, in trowelling in the world, builders and archaeologists do not act upon it or, simply do things to it. They rather move along with it. Their actions do not just transform the world, they are part and parcel of the world's transforming itself. In other words, building up the future and digging down into the past, respectively in building and archaeology, belong to time. They are part of the stuff through which humans have been imagining for real.

This should not be read as a denial of creativity but as the affirmation that creation occurs in the midst of changing material properties and environmental and socio-political forces. Indeed, archaeological and building sites are living examples also of how people might inhabit the past, present and future differently. Eco-building, for instance, demonstrates how people can build differently now, and in doing so they embody the duality of being *of* the world, and offering alternatives and possible futures; a condition of promise shared by archaeology, with its ability to inquire about the possibilities of humanity through a creative material correspondence with the past and what might have been once before.

As anthropologists, we see a certain amount of kinship here with the builders and the archaeologists, in that our work also helps to demonstrate that there are, have been and can be alternative ways of living already in existence. It is important to know of or about these alternatives as students of contemporary cultures, but also, more broadly, as citizens of the world in these times of ecological crisis. Knowing that alternatives are possible (partly through knowing of different examples in time) is an empowering and essential context for criticality, creativity, imagining and making change happen. In universities, but also in the wider public realm, examples of behaving, seeing, believing and doing differently can throw open doors of opportunity and be liberating in times when possibilities seem to be diminishing along with the planet's rapidly disappearing biodiversity and our own defuturing (Fry, 1999).[8]

The pointed trowel and trowel float provide glimpses into the practices of archaeologists and eco-builders, both groups constructing and creating within a lively ongoing lifeworld – if an increasingly ecologically damaged one. To wield each trowel, lift and carefully use them, compare and contrast, lends different perspectives of this world. These are perspectives that upturn hierarchies, and whilst so doing, challenge understandings of landscape and time and their interpretation. They are perspectives that recentre and ground people in ecological-relational building(s) and places that are lively and connected/ing out to the world. The trowel scrapes and smoothes at the edge of creation, poised to offer insight into the transforming and transformative energies, materials and powers at play there. Thus, there is a rich vein of radicalism running through the movements of these trowels and what they illuminate. This radicalism of both other ways of doing and writing or communicating about these other ways of doing, points to the necessity, as both academics and as citizens of a shared world, of going along alternative routes and across non-professionalised and inter-disciplinary grounds, in order to cut what is still a hopeful path through these damaged landscapes of the Anthropocene. These radical ways are crucial in these times. They are ways of questioning what has been and is, whilst attempting to also act and create better for the what-might-be. Ways to enact wider critical change of economic, socio-cultural and political systems within the world's transformation. They are instances of hope in these times of ecological crisis. They are simple tools, very apt for our time.

Notes

1 In self-building, dwellers of a building are the ones that construct it. In practice, it is a social, collaborative affair, where the dwellers' wider social network are often involved. It tends to refer to the inclusion of non-professionalised labour in the building process. This is, in contrast, to situations where the dweller-to-be pays professional builders to construct a building *for* them.

2 See Howard (2018), for an example of this.

3 Referring to the title and bold argument of Tim Ingold's (2007) paper 'Materials Against Materiality'.

4 Liveliness is often seen only as a bad thing: e.g. rainwater leaking in, or insects or rodents trying to share human accommodations. Also, see Van der Ryn and Cowan (2007) for comparison of 'ecological' and 'conventional' design (2007: 41).

5 Arguably, this dictum also applies to archaeology's careful transformation of the ground through trowelling, which depends on the ongoing maintenance of sites across changing weather conditions; a process involving activities that often resemble the gardener's continual care for their garden (Marmol, 2020).

6 Within design disciplines, material re-use, reclamation, and recycling speak to these themes, as do Circular Economy movements that are challenging the linearity of damaging 'take-make-waste' cultures of production and consumption through alternative processes that keep materials in circulation.

7 See Harkness (2017b) and (2022)

8 Having observed Ingold's educational style and politics since *TPE*, we've seen him cutting across disciplines, connecting people, places and ideas, drawing together the works of others (philosophers, archaeologists, anthropologists, educationalists, artists) and opening doors between them. A curiosity and willingness to try different ways of engaging, to be influenced by different environments (from beach to mountain) and different mediums of creativity (drawing, dance, music, architecture) has characterised his approach to thinking and action. Ingold wields the pen as the simple tool of his own craftsmanship; he is able to move people with words, with the pen – Ingold's being mostly filled with blue liquid ink – and with the power of the spoken word. The educational environments around Ingold, the constellations of people that constitute them with him, are a version of an academia that is a base for critical and thoughtful making, doing and action in an unfinishing world (Higgin, 2017). This is an unfinishing, a moving along, that does not deny the possibility of rest or (feelings) of completion and closure, but rather, and again, is something that enables a move out to a distance, from which the restless energy of life, lives, ecologies, can be acknowledged and felt, and where apparent fixities can be questioned.

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Section V

Introduction

Movement, Becomings, Growth

Elizabeth Hallam
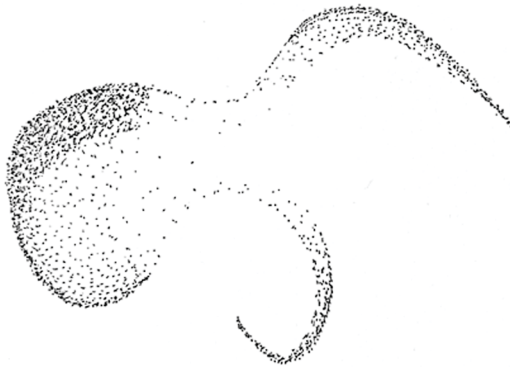
This section's interrelated themes – movement, becomings, growth – draw on some of the central concerns in Tim Ingold's work, where movement is often equated with life, and is integral to becoming; as formulated in *The Perception of the Environment* (2000: 242) the world 'is continually coming into being as we – through our own movement – contribute to its formation'. Movement, in these terms, is relational, as a human person's movements, for example, are responsive to other people's and animals' movements, as well as to motion, such as that of weather, within a wider environment. Unfolding within a world in perpetual motion are processes of growing so that, as Ingold argues, '[t]he growth and development of the person [...] is to be understood relationally as a movement along a way of life' (2000: 146).

Processes of growing are inseparable from those of making in Ingold's analysis (see 2000: 88), an interweaving that inspired our co-edited volume on anthropological studies of organisms and artefacts, which analyses the 'anthropo-ontogenetic' dynamics of 'making-in-growing or growing-in-making' that is at once social and material (Ingold & Hallam 2014: 5). Again, motivated by a concern with generativity, our earlier co-edited book on creativity and cultural improvisation highlights the temporal and

Figure SI5.1 Waterfall, River Leen, England, 2021. Photograph by E. Hallam.

relational dimensions of productive processes as on-going emergence, where movements of ideas are 'inseparable from our performative engagements with the materials that surround us' (Ingold & Hallam 2007: 3). Close attention to movement in time, or the continuous flux of life, also creatively informs Ingold's work with drawing, as vividly demonstrated, for example, in his description and line rendering of salmon leaping up a waterfall in Scotland (Ingold 2011a: 1). By drawing the vital movement of the fish leaping upwards

Figure SI5.2 In a dhow before a storm, Lamu Archipelago, Indian Ocean, 1988. Photograph by E. Hallam (photographic print, detail re-photographed 2023).

through falling water, Ingold invites the reader to look with his drawn line that also moves distinctively and energetically up the page:

Figure SI5.3 Cyclone approaching, Cairns, Australia, 2018. Photograph by E. Hallam.

> You have rather to look *with* it: to relive the movement that, in turn, described the vault of my own observation as I watched the salmon leap the falls. In this line, movement, observation and description become one. And this unity, I contend, is nothing less than that of life itself.
>
> (2011a: 1)

Responding to Ingold's striking drawing as movement, and recalling anthropologists' and artists' work with photography practised as bodily action (see Grimshaw & Ravetz 2015), I weave into this text my photographs as images that, for me, vividly recall the motion of water; looking with these photographs forms a sensory process of remembering that evokes, and refigures over time, past motion and emotion experienced in particular material settings (see Hallam 2020a, 2020b). Shifting between image and text, photography and writing, between different media, also enacts imaginative movement (Hallam 2016; see also Küchler & Carroll 2021: 206–222).

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The chapters in this section explore different modes of movement – dancing, sailing, running, kayaking – that are intimately engaged with the material world, and are also simultaneously physical and imaginative processes. Focusing on the body in chronic pain, Paola Esposito's chapter develops an

anthropology with butoh dance. Drawing on personal experience of chronic pain during the COVID-19 pandemic, Esposito describes a form of 'somatic attentiveness', generated through long-term practice of butoh. Cultivating this receptive and reflexive practice, she uses the notion of morphogenesis to analyse perceptual transformations that occur when a perspective from within the body is sustained and finely attuned. Here, the argument builds on Ingold's critique of hylomorphism – the notion that form is imposed on inert or passive matter from the outside 'by an agent with a particular design in mind' (Ingold 2011b: 210) – and further problematises such notions, especially as, Esposito argues, they tend to inhibit awarenesses of 'bodily imaginations', or capacities to imagine from the inside through skilled bodily practices.

By placing bodily form, sensed from within, at the centre of the analysis, Esposito performs and describes a mode of anthropology grounded in personal experience, attuning her own and her reader's attention to the perceptual transformations that become possible. In this account, such transformations amount to a metamorphosis, which moves beyond the metaphorical into bodily sensation and knowledge. Through this exploration of her own practice, Esposito explains that butoh, for her, enables an 'art of inquiry' into pain which makes manifest bodily processes of thinking and imagining. So chronic pain, felt as an ambiguous, moving and shifting interior shape or space, is powerfully described. In Esposito's analysis, which deepens anthropological approaches to self-perception, imaginative processes are movements, sensed as motions of 'wayfaring through the somatic terrain of the body'. Practising with butoh dance, Esposito's chapter builds on Ingold's work towards a key shift or re-orientation, from an anthropology *of* to an anthropology *with*, a shift that has significant implications for ways of doing anthropology in theoretical as well as methodological terms (Ingold 2013, 2018).

Movement is the central theme in the chapter by Montse Pijoan, focusing on perceptions entailed in seafaring. Educating attention with regard to the perception of movement at sea is the concern here, and such an education, as Pijoan suggests, also informs perceptions on land – which, although often sensed as stable, is constantly in motion at different scales from the changing weather and moving tectonic plates, to the growth of cells in living beings. Pijoan's study of seafaring describes how sailors navigate encounters between the ocean and the sky with its wind currents, showing how they work with, and manage, tensions and rhythms in these encounters. Through this process, the skilled responses of sailors, the 'more-than-oceanic surface', and the ship are mutually constitutive, caught up in an ongoing becoming through inter-relation and action.

In the context that Pijoan analyses, based on fieldwork involving training in sailing with rigged ships and Atlantic crossings, sailors develop a mode of attention that is acutely sensitive to oceanic movements on board, and this skilled perception is cultivated through relationships in the ship. The chapter draws on Ingold's notion of meshwork (Ingold 2015) – or 'dense tangle of

trails' formed by animate beings finding their ways in the world and thereby bringing into being enmeshed 'lines of movement and growth' (2015: 82). Inspired by this, Pijoan traces the active participation of ships' crews as they keep their vessels afloat and undertake journeys enabled through collaborative action that can be interpreted as a continuous form of making, a 'building of the boat itself' within the marine environment that includes myriad non-human aspects. Ingold's account of the meshwork – which, with reference to a spider's web, describes action as emerging 'from the interplay of forces' in which an organism lives (2011b: 64) – is put to work in Pijoan's chapter as a means of understanding the dynamics of seafaring and the unfolding work (adjusting rigging, sails, hull and so forth) entailed in the crucial finding of direction.

As Pijoan argues, sailors and trainees, always facing potential danger on board, become especially skilled in attending to movement and this enskilment is significant in that it is constitutive – it informs the 'muscular consciousness' of those at sea and enables them to inhabit, and move with, the boat. This approach to movement as constitutive, and often transformative, is emphasised in Pijoan's chapter which discusses seafaring in terms of a 'fluid ontology' – highlighting the 'continuous presence of movement' in life at sea (see Ballestero 2019, Strang 2020). Such emergent movement, and its fluidities and fluencies, then, amounts to so much more than the reductive notion of movement as simply a physical displacement or transit from one (fixed) place to another.

Chapter 15 offers an exploration of two further modes of movement, through a conversation between Paolo Maccagno and Deborah Pinniger: marathon running in prisons and kayaking along rivers. Inviting readers into their ongoing dialogue, Maccagno and Pinniger begin with a university workshop, held with students, on the subject of upstream and downstream movement, which aimed to open out different approaches to, and ways of communicating about, adventure, education and research. Given the authors' own practices of running and kayaking, they are particularly concerned with 'paths of education' in which people 'face and deal with limits' – a significant issue they foreground as an experience that potentially changes perceptions of the world. Experiencing limits, they suggest – when outdoors and in an exposed or vulnerable position that accentuates sensations of being alive – can form an educational pathway with the capacity to 'lead out from orthodox ways of knowing'. From this perspective, while facing a limit, there is a move towards the unknown which can offer insights into different ways of sensing and being in the world.

Comparing moving upstream in marathon running with movements downstream in kayaking, Maccagno and Pinniger identify different kinds of limits that can become apparent when a runner reaches around 35 km (at which stage, they might 'hit the wall and collapse' with exhaustion), or when a kayaker enters rapids of a white-water river that are extremely difficult to navigate. In both cases, entering this limit zone can lead to a loss of control

but also to heightened sensations of clarity, alertness and awareness which the authors describe from inside their own practice. Movement towards or at the limit has further effects that force the runner or kayaker to focus intensely on the present moment, on the immediate *now* in which ultimate care must be exercised to ensure that their movement can continue.

As the dialogue develops in their chapter, Maccagno and Pinniger discuss vulnerability and rehabilitation, presence and disorientation, placing emphasis on how the movements they undergo in their practice – albeit at different speeds – inform, affect or train attention. In this exploration, they take forward Ingold's (2018: 20–36) work on education where 'attentionality' is important, especially with respect to acting ethically with responsivity and responsibility (see also Ingold 2022). Through their discussion, then, the authors describe movement as a mode of knowledge making that offers an alternative orientation to education, departing from mainstream or dominant pedagogies that tend to privilege 'textual and verbal representations of thought processes'. In their conversation, Maccagno and Pinniger propose that experiencing limits through practices of running and kayaking brings a person to 'unfamiliar territory where movement and imagination have to be recognized as different forms of knowledge in their own right', thereby potentially generating 'a new sense of life'.

Together, this section's chapters point to the personal and the shared significance of movement in a range of contexts, and in so doing they open up different, experimental and creative ways of working anthropology, suggesting how attentive perceptions, and sensitive descriptions, of movements – their shifts, rhythms and fluctuations – can become potent sources of knowledge in time.

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13 Reimagining the body-with-chronic pain through an 'anthropology with butoh dance'

From bodily hylomorphism to somatic morphogenesis

Paola Esposito

Butoh as an art of inquiry

The anthropological material for this chapter stems from my personal experience of self-managing chronic pain between 2020 and 2021, during the SARS-COVID-19 pandemic, through somatic attentiveness cultivated during years of dancing *butoh*. Suffering from pain that propagated throughout the left side of my body, and exacerbated by stressful circumstances, I made use of regular bouts of insomnia to lie on my yoga mat, either completely flat or with knees slightly bent and soles of the feet in contact with the floor. I would then attend to my body-in-pain, listening in, trying to establish a 'correspondence' (Ingold 2013a). That is, instead of trying to ease my discomfort by moving in predetermined ways, or by forcing my body into specific postures, I would try and remain receptive and curious about what my body was 'trying to tell me'[1] through the pain. Throughout this self-led, unstructured, and reflexive bodywork, which would normally take place in the dead of night for two to three hours at a time, I found myself relating to Ingold's (2013a) proposition of art practice – in this case, butoh – as an 'art of inquiry' into

my body-in-pain – even as those enquiries were oriented towards self-care rather than artistic creation. This chapter explores the extent to which butoh-informed somatic practice may be a form of bodily 'wisdom' (cf. Ingold 2022) and intelligence (Savranski 2019) that may be harnessed for self-care. It shows how an 'anthropology with art' (Ingold 2013a) can participate in one's life, not only in thinking 'about' life.

Butoh is a dance genre that emerged in Japan in the 1960s and is practised today around the world. Due to its stylistic idiosyncrasies, elusive aesthetics, and lack of a formalised movement vocabulary, butoh is often referred to as an 'indeterminate', or 'formless' dance (Roquet 2003; cf. Vangeline 2020: xliii). Against this overarching characterisation, one of the most common butoh traits is said to be 'metamorphosis' (Klein 1988: 37–40; Miyabi in Klein 1988: 70; Barber 2005; Fraleigh & Nakamura 2006; Fraleigh 2010) a term which, however, is typically used metaphorically and remains anthropologically under examined (except for Esposito & Dziala 2021). In this chapter, I propose that an appreciation of butoh metamorphosis, which is more than metaphorical in that it entails perceptual transformation, can be achieved by mobilising a somatic (Hanna 1988; Eddy 2017; Nicely 2018) or '*from* the body' perspective (Farnell 1999), that is, a perspective 'from the inside' (Ingold 2013a). Through this 'anthropology-with-butoh dance', I aim to show how butoh metamorphosis can be understood as an expression of the lived body's capacity to think and imagine.

At the core of my argument is a reflection on the idea of bodily 'form'. In the first part, I explore this notion as mediated by the condition of my body-with-chronic pain. I propose that discourses on and of the body reflect ingrained hylomorphic assumptions which hinder an engagement with bodily imaginations, as emerging from the inside of one's practice. Based on Ingold's critique of hylomorphism and his work on perception and imagination, I propose an alternative, *morphogenetic* model which lays the basis for what I call 'somatic morphogenesis'. I, thus, extend Ingold's ideas from the field of making through art and craftsmanship to that of skilled bodily practices. These explorations are grounded in my long-term engagement with Ingold's work,[2] as well as my collaborations with research associates[3] of the *Knowing From the Inside* project that Ingold coordinated.

I draw on auto-praxiographic[4] materials gathered during my nocturnal inquiries to argue that 'correspondences' with the living/lived body (*soma*) can destabilise hylomorphic images by revealing the ontological instability of bodies (Taylor 1996; Vilaça 2009; Ingold 2013a: 101; 2021: 72). The concluding section proposes that a butoh-style of somatic attention (Csordas 1993) is an art of inquiry into the body's metamorphic capacities that can contribute to self-care.

'Walking through' the body-with-chronic pain

In the medical anthropological literature, chronicity is intertwined with ambiguity (Honkasalo 2001). Chronic pain challenges the 'objective' – identifiable,

determinable, and treatable – parameters of 'disease' upon which the bio-medical rationale of intervention relies. Because chronic pain does not have a clearly identifiable location in the body, biomedicine cannot adequately account for nor treat it (Good 1992: 39), which can lead to delegitimisa-tion, stigmatisation and isolation of chronic pain sufferers (Kleinman & Kleinman 1991; Jackson 1994; 2005; Honkasalo 2001). Oscillating between merging with one's sense of self and being something alien, chronic pain has been described as a 'demon' or a 'monster' (Good 1992: 36; Honkasalo 2001: 323; 341). It could equally be compared to a 'dragon', that is, 'an affliction instilled at the core of the sufferer's very being' (Ingold 2013b: 737) which 'can neither be classified nor mapped' yet no 'less real or true' for the person experiencing it (Ingold 2013b: 744).

Dragons cannot be 'precisely located, as on a cartographic map', but 'can be told' (Ingold 2013b: 743). Similarly, chronic suffering may be accessed through narrative (Good 1992). Despite its resistance to localisation and communi-cation, Honkasalo (1998) found that chronic pain sufferers could describe their pain in spatial terms. Not as an empty kind of spatiality, where space acts as a container for things, but a dense, moving, morphing space coin-ciding with felt dimensions of the lived body-in-pain. Honkasalo's participants described these spaces variously as 'shifting and fluctuating', 'shrinking, constricting, folding', 'split' as well as 'expanding' and 'without any bound-aries' (Honkasalo 1998: 36–49). Moving, shifting spatialities are integral to chronic pain's ambiguity. Through somatic attention, I, too, began experien-cing spatial dimensions of my body-with-chronic-pain. In fact, one of the most striking aspects of attending to such a body was accessing its unstable interior morphologies which were 'never the same twice' (Ingold 2013b: 743). Like dragons, chronic pain has 'form/s', however unmeasurable these might be.

My nocturnal explorations through my body-in-pain would usually begin with sensing the main 'nodes' of pain as relatively static, as entailing contrac-tion, fixedness, and a sense of being stuck – like 'confused knots' (Devisch 1993: 48). Over time, usually within a two-hour period, by gradually tuning into them, these interior morphologies would shift, change into a different shape or pattern. The slightest change would sometimes be accompanied by an overall sense of relief from pain in my entire body. These night enquiries would bring relief from the pain not only for the remaining night but con-tinue, sometimes, even for two or three days following an exploration. They would also be repeatable. It is not that I applied or enacted pre-determined butoh techniques (as in Esposito & Dziala 2021). Instead, by engaging proprioceptive and interoceptive somatic attention, I would tune in, and listen deeply to my body's flows, interruptions, and stagnations.[5] A som-atic utterance would typically catch my attention, 'prising an opening' and I would follow its lead (Ingold 2013a: 7). The exploration would involve stepping up of kinaesthesia to reveal subtle micro-movements and dynamics, including the movements of my breath sinking, sliding, slithering, rippling across; or the slight adjustments of my body weight(s) to the pull of gravity; or the involuntary releasing and expanding of deep tissue.

In attending to my body-in-pain and its utterances, new interior morphologies emerged, manifesting as images at the intersection of kinaesthesia, tactility and vision that I describe in the last part of the chapter. I refer to these images as 'place holders' (Ingold 2011: 197) supporting the idiosyncratic, elusive 'wayfaring' (Ingold 2011: 198–199) through the somatic terrain of my body-in-pain. By Ingold's use of 'placeholders', I understand temporary stabilisations of perception into images or 'condensed stories' (Ingold 2011: 198–205; 2013b: 741): not representations but imaginative elaborations of the experience of 'a world *in formation*' (Ingold 2022: 38, original emphasis), momentary 'nodes' or 'knots' in a 'matrix of trails to be followed' (Ingold 2011:197; 2013b: 741). I refer to this process as 'somatic morphogenesis' as involving a reimagining of the body *from the inside of experience*, whereby a sense of form, or 'imaginary consciousness' (Sheets-Johnstone 1999: 511–513), of the lived/living body emerges through self-perception, not through the projection of abstract models or geometries onto it.

From bodily hylomorphism to somatic morphogenesis: the body as material

> Rather than trying to mould their bodies into an idealized shape or judging or pushing them, they learn to listen deeply to sensation and find the *movement pathways* that are most pleasant and comfortable for the body. This generally seems to be tantamount to movement efficiency.
>
> (Steckler 2016: 171, my emphasis)

In scholarly discourse, the body has been largely framed in terms of a Cartesian divide from the mind and its critique. A related yet less examined trajectory concerns the extent to which Western conceptions of the body may be underpinned by hylomorphism, whereby an idea or form (*morphe*) is impressed onto inert matter (*hyle*). In Aristotle's hylomorphism, everything that exists arises from a conformative relationship between matter and form, as distinctive yet inseparable features of being. This 'compounded' view of reality (Deleuze & Guattari 2004 [1988]: 430) extends to human beings, where body-soul replaces matter-form (Cohen 1992: 58). Ingold traces how, in the subsequent history of Western thought, Aristotelian hylomorphism became progressively more unbalanced, with form taking an active, generative role and matter becoming passive and inert (Ingold 2011: 210; 2013: 37–8). While Cartesian dualism – which posits the body as a machine – may be the most extreme expression of this unbalance, I argue that 'embodiment' (Csordas 1990; 1994), too, is hylomorphic in privileging 'an invariable form for variables', or 'constants', over 'forces' (Deleuze & Guattari 2004 [1988]: 430; cf. Gatt 2020: 113; 119). That is, in maintaining the binary between mind and body, subject and object, agency and matter (Gatt 2020: 113), embodiment reinstates presumptions of a body's 'packaged'

unity and homogeneity (cf. Sheets-Johnstone 1999: 119; Ingold 2013a: 25; 94) rather than variability, differentiation, and instability (cf. Deleuze & Guattari 2004 [1988]: 475).

Hylomorphic tendencies may be seen in optical renditions of the body. In biomedicine, the bio-technological gaze has produced images 'from within' the body which have hardly been scrutinised phenomenologically (Vall & Zwijnenberg 2009: 4–7). In the case of brain scans, the stabilising effect of these visualisations is not only illusory but potentially damaging in so far as their 'creation of apparently definitive objects of disease' hides the relational dynamics underlying mental illnesses (Cohn 2010: 82). In some dance cultures, a hylomorphic model is implicit in the practice of adjusting one's body to its mirror image (Bull 1997: 272; Williams 2011: 73–85; Bizas 2014: 107). Dance anthropologist Drid Williams (2011: 73–77) argued that (Western) dancers' over-reliance on an abstract model, as encapsulated by the dancer's image reflected on a training mirror, distorts both the dancer and the dance: 'mirrors turn *four-dimensional bodies* (three dimensions of space and one of time) into *two-dimensional* images' (Williams 2011: 73; original emphasis). A primacy given to 'visual images' of the body, as originating from 'outside' the body (e.g. in mirrors) can hinder the invisible kinaesthetic logic by which dance comes into being (Williams 2011: 76). Drawing on Ingold (2011), who is influenced by Deleuze & Guattari (2004 [1988]), I argue that the problem is not so much with the image being *visually* constructed but with being *optically* constructed. In this elaboration, the optical does not refer to the visual but to a mode of perception that is distancing as opposed to the haptic, which is close-up (Deleuze & Guattari 2004 [1988]: 572–573; Ingold 2011: 133). Just as vision or touch can be either optical or haptic, other sense perceptions too can be either optical or haptic, including kinaesthesia (Esposito 2013). Ethnographic accounts of dance point to haptic inflexions of kinaesthesia, for instance, as heat (Potter 2008). However, optical constructions of the body remain an important reference in aesthetic practices (as exemplified by Williams 2011).

I argue that haptic modulations of self-perception can yield corporeal morphologies emerging 'from the inside', inviting a reconceptualisation of the body from optical to haptic. Morphogenetic and ontogenetic models can be instrumental to this process. Critics of the hylomorphic model (Simondon 1958; 1992; Deleuze & Guattari 2004 [1988]; Ingold 2013a) argue that, far from being homogeneous, matter is always 'in movement, in flux, in variation' (Deleuze & Guattari 2004 [1988]: 476). Rather than receiving form passively, or conforming to a pre-given design, matter is active, internally varied, and dynamic. This is seen with materials which, with their 'tensions and elasticities, lines of flow and resistances' (Ingold 2013a: 25), have form-taking potentials: They are *morphogenetic*. A logic of emergence also underlies *ontogenesis*, which refers to the coming of being through processes of differentiation from the 'one world' we inhabit (Ingold 2018). While these frameworks have been productively applied in the fields of art, design and

technology, similar developments have not occurred in the fields of body-work and the aesthetically moving body. I argue that these models can destabilise residual body hylomorphism by reimagining the body as 'matter-flow' (Deleuze & Guattari 2004 [1988]: 470–484) and 'a dynamic center of unfolding activity' (Ingold 2012: 439).

Somatics, a field of bodily practices extending the capacity for self-directed and self-correcting movement through self-observation of kinetic patterns (Eddy 2017; Meehan & Carter 2021; Thecla-Schiphorst 2009) is compatible with morpho/ontogenetic frameworks. As media artist and scholar Thecla-Schiphorst (2009) put it: 'In somatic practice "making" is akin to first-person body awareness and self-reflexive action' allowing to reframe the body as a material (ibid: 33–36), one that is not only active and generative but also *sentient*, that is, feeling, thinking, and participating, and as such expressing its own aims and values (Savranski 2019: 122). Somatic movement underpins butoh (Eddy 2017; Nicely 2018), which also approaches the body as a material (Esposito 2017). The passage I quote at length below speaks both to the craftsman's experience of their material and to the butoh dancer's experience of their body:

> Materials are ineffable. They cannot be pinned down in terms of established concepts or categories. To describe any material is to pose a riddle, whose answer can be discovered only through observation and engagement with what is there. *The riddle gives the material a voice and allows it to tell its own story: it is up to us, then, to listen, and from the clues it offers, to discover what is speaking.* … [Practitioners'] every technical gesture is a question, to which the material responds according to its bent. In following their materials, practitioners do not so much interact as *correspond* with them. … In the phenomenal world, every material is such a becoming, one path or trajectory through *a maze of trajectories*.
>
> (Ingold 2012: 31, my emphasis)

Having posited the body (*soma*) as sentient material, the next step is to establish what 'following' or 'corresponding with' such *sui generis* material entails in butoh. I focus on three aspects, as identified through sensory anthropology-informed butoh practice: an ongoing reflexivity; an extended kinaesthesia; and a haptic-optical oscillation of kinaesthetic attention.

Reflexivity in action

Much anthropological literature on skilled practice is grounded – knowingly or unknowingly – in a phenomenological model of perception as an activity which is also a following, or going along with, the movements of the life-world (Latour 2004; Grasseni 2010; Ingold 2013a; Marchand 2016; Hsu & Lim 2020). Studies informed by this approach tend to emphasise an *exteroceptive* orientation to perception, as entailed in actions and micro-actions

in the form of education of attention, correspondence, articulation, or sensory attunement while overlooking processes of self-perception as directed towards the perceiver's own body (Harris 2016: 34; 47). That is, while there has been a reorientation in scholarship from objects of perception towards relationality and dynamic enmeshment in the world, scarce attention has been directed towards how skilled bodies are reflexively experienced and imagined by practitioners and movers. One explanation for this imbalance could be that a proprioceptive orientation is assumed to entail reflexivity, which is traditionally posited as *secondary* whereas bodily processes such as sensory perception are seen as primary. That is, sensory perception (understood as an activity) and reflection have been conceptualised as temporally incompatible and belonging to alternative moments (Farnell & Varela 2008). Others have argued, however, that bodily processes should not be seen as prior to 'mental' ones (such as analysis, reflexivity, referential or semantic meaning) but in a mutual and emergent formative relationship (Massumi 2002: 8–11; Ingold 2012: 6–7; Gatt 2020: 108; Hsu & Lim 2020: 147–154).

Writing on religious experience, Ingold (2014) argues that imagination and perception can co-exist: '[Religious experience] lies … in the perception of a world that is itself continually coming into being both around and along with the perceiver him- or herself. It is because such perception is intrinsic to the process of the world's coming into being that it is also imaginative, rather than opposed to imagination …' (Ingold 2014: 157). So where does this coincidence of imagination and perception leave the imagination of and with the proprioceptively sensed lived body that underpins skilled practices such as dance? Put differently, what kind of imagination of the body stems from skilled self-perception? If the exteroceptive-oriented body recedes into the background, with enhanced self-perception – as triggered by pain, illness, or engagement in meditative practices – the body itself is thematised (Leder 1990: 99), laying the basis for bodily (self)imagination. This is the case with butoh as an activity that is enacted with and oriented towards one's body as material whereby reflection and imagination unfold in ways that are *not* temporally separated from perception, but co-constitutive. 'It is because such perception is intrinsic to the process of the [body's] coming into- being that it is also imaginative' (Ingold 2014: 157; my alteration). Somatic movement and butoh provide a privileged avenue to 'follow' the body's imaginal activity and corresponding form-taking processes through ongoing self-observation. What remains to consider is: *what forms might such bodily imagination engender?*

Kinaesthetic imagination

Philosopher-cum-dancer Sheets-Johnstone (1999) offers a phenomenological treatment of kinaesthesia as pertaining to the sense of self-movement, 'a *bona fide* sensory modality in its own right' (Sheets-Johnstone 1999: 512, original emphasis) not to be confused with proprioception. Sheets-Johnstone

contends that kinaesthesia has a 'double mode of reality,' one 'definitively felt' and the other 'definitively perceived' (Sheets-Johnstone 1999: 515). She describes these as 'internal' and 'external' kinaesthesia respectively, with the former referring to the perception of self-movement as a qualitatively inflected felt dynamic, and the latter to the perception of self-movement as a three-dimensional dynamic unfolding in and through interaction with an environment (Sheets-Johnstone 1999: 120; 516–517). While analytically valuable, the separation of kinaesthesia from other sensory modes such as proprioception restricts what Sheets-Johnstone calls the 'imaginary consciousness of movement' to an 'ongoing spatio-temporal-energic dynamic,' a three-dimensional 'flow' or a 'dynamic streaming' (511). This definition might suit the description of Western dance systems like contemporary dance and ballet, which privilege the abstraction of movement qualities through ample gestural and exteroceptive dynamics. However, in anthropology, it is known that different dance approaches entail different sensory and kinaesthetic organisation (Bull 1997). Even among contemporary dancers, a sense of motion can work 'in harmony' with touch and other 'complementary senses', as Potter compellingly argued (2008: 459). Consequently, an 'imaginary consciousness of movement' depends on the kinaesthetic system at hand.

In butoh training settings, practitioners are typically asked to thematise subtle bodily changes and micro-movements whereby the boundaries between kinaesthesia and other sense perception blur (Esposito 2017; Esposito & Kasai 2017; Esposito & Dziala 2021). This is seen in the kind of imagery informing mainstream butoh training: a 'small ball rolling up the spine' has visual, spatial, and tactile-kinaesthetic dimensions which relate directly to the body's dimensionalities (Esposito & Dziala 2021); or an invitation to 'walk over a carpet of autumn leaves' has sonic as well as tactile and kinaesthetic qualities that modulate a dancer's dynamic presence. Thus, while Sheets-Johnstone's 'imaginary consciousness of movement' is helpful in theorising a co-emergence of sensory perception and bodily imagination, a more complete treatment of this notion requires a situated approach whereby kinaesthesia can be seen as intersecting or even coinciding with other sensory modalities, including proprioception (Ingold 2000: 268; Potter 2008: 460).

An expanded notion of kinaesthesia can yield 'textured imaginations of the body' (Harris 2021: 17) not limited to dance. In Harris's (2016) discussion of learning the medical skill of auscultation, techniques of percussion entail tactile-kinaesthetic as well as sonic sensitivities. Skilled self-perception is inherent not only in the emergence of medics' 'knowing bodies' but also in the localisation of anatomical places by interrogating the body through percussion. As 'self-percussion blurs [the] boundaries between the bodies of novices learning their craft and the bodies they learn from', the medical student 'is both perceiver and perceived' (Harris 2021: 34). The lived/living body and the biomedically framed body are not only brought into a close

relationship but overlap, showing how imagination and self-perception can be co-constitutive. As one of the medical students succinctly puts it, 'You know, you're always with you! So why not make use of your own anatomy!' while another talks about their body as 'a walking fleshy textbook of comparisons' (Harris 2021 46). In both cases, an anatomical imagination is shaped by and anchored onto a sensuously perceived body.

The multimodality of the lived/living body affords new 'imaginative leaps and possibilities' of what a body can be (Harris 2021: 17). Harris explores how everyday materials such as simple fabrics and textiles can be used to learn anatomical knowledge, including shape, tactile qualities and affordances of visceral organs and tissues inside the body. Drawing on sensory and multi-modal anthropologies, her work explores 'ways in which textured imaginations of bodies can be crafted through sensory analogies', a term that allows 'to interrogate the features of similarity and difference across modalities' of sensing the body (2021: 17). Inspired by Harris's explorations, in the remainder of this chapter, I consider ways in which multimodal analogies can inform the self-perception of a body-with-chronic pain. Given that chronic pain lends itself to being described through figurative language and fantastic imagery (Good 1992; Honkasalo 2001), I explore this propensity next through a butoh style of attention.

Haptic/optical configurations of a body-in-pain

For Ingold (2013: 20–2), 'following' and 'corresponding with' a material involves reading the material longitudinally rather than laterally, haptically rather than optically. While, for Ingold, the two perspectives are mutually exclusive, my somatic inquiries[6] into my body-in-pain entailed 'oscillating' (Willerlev 2007: 99) between haptic and optical kinaesthesia. These oscillations are key to grasping the imaginative dimension of butoh practice and, in my auto-praxiographic account below, allowed interior morphologies of pain to shift and reconfigure in ways that I perceived as resolutive or 'healing'. My discussion builds on Honkasalo's (1998) idea that chronic pain may be spatially experienced but replaces 'space' with 'morphogenesis'. First, through haptically-inflected kinaesthesia, the body is reconfigured as a somatic 'material'. Second, through optically-inflected kinaesthesia, metamorphic images of the body emerge.

Lying flat on a yoga mat, with legs either stretched out or bent at the knees. Feet in contact with the floor.

In working with the body-in-pain, I begin by lying on the floor in stillness. This alerts the body to the support of the floor and turns its relationship with gravity from implicit to explicit. The horizontal plane reconfigures this relationship from homogeneous and unified to heterogeneous and diffuse (Esposito & Dziala 2021). A perceived change in bodily form/s may already arise as limbs and body parts are now horizontally in touch with the ground. At this 'interstitial' level of differentiation (Ingold 2022: 55; 59–60), one

comes across 'boundaries' or 'folds' of the body in the form of condyles or protrusions of bones which act as 'hinges' between the body and the ground (see also Williams 2011: 75). These organic, proprioceptively sensed boundaries provide the 'scaffolding' (Downey 2008) for somatic morphogenesis. They delimit a field of self-receptivity in which involuntary bio-movements come to the fore.

What 'traffic' is already going on in the body?

Even in stillness, attending to the corresponding of the body with gravity allows micro-movements to emerge, whose 'form' depends on the body parts involved. They include tidal movements associated with the involuntary activity of breathing and vibrations associated with stress release (Esposito & Kasai 2017). Thus, through this initial layout one can already attend to the bio-animacy of the living/lived body as it gradually resurfaces from habitual movement trajectories into a rippling if quiet aliveness. The correspondence of the proprioceptively sensed body with gravity via the floor constitutes a field of relations – a 'force field' (Gatt 2013: 353–357) – which already has the potential to alter one's sense of corporeal form. This is because its forces and dynamics are not merely 'physical' but transgress into the virtual (Kapferer 2004; Esposito & Dziala 2021). For instance, in relating to my body-with-chronic pain, I begin from the above-described configuration and then focus on the bony edges of my hips as hinging on the floor. In doing so, the 'imaginary construction' (Sheets-Johnstone 1999) of these anatomically defined places gradually *shifts* into alternative elaborations in my mind's eye.

On one occasion, as I was lying with knees bent and feet on the ground, I noticed an uncomfortable sense of 'jamming' in my tailbone and attempted to release it by very gently rocking my hips back and forth, which led to tiny up-and-down movements of the tailbone. At some point during the rocking, as I was following the edges of my hip bones tracing a swinging movement through the air, a spontaneous image appeared in my mind's eye, of my rocking hipbones turning into flapping wings (Figure 13.1). This shift

Figure 13.1 Eagle-pelvis. Drawing by Paola Esposito.

in body image involved a feeling of deep relief as though the boundaries of my body had suddenly dissolved. I played along my pelvis-turned-eagle and kept flapping my hipbones-wings. It was not long until the discomfort I had felt in the jammed tailbone dissipated. Upon returning upright, I experienced a sense of release and freedom in the torso and neck, which lasted for two days.

Holding the pain-form

In working with the constraints of chronic pain that spread through the left side of my face, I encountered several layers of pain form. In the beginning, the pain 'grips' my left jaw, spreading onto the upper left cheek and part of the palate. This is a three-dimensional pain form. Breathing adds dimensionalities to this, sometimes making it spread further into the left side of the septum. I follow the pain form and hold it for a moment, that is, I attend to its overall shape in a tactile way, but through internal tissues rather than just skin. As I do this, I get glimpses of wider connections, or ramifications, as lines that then bind together into a pain-knot. Again, I hold this shape for a moment, which leads the pain-knot to gradually loosen, bringing a sense of release. Then I see another pain form, another pattern. Again, I follow it, hold it, and sense its shape (see also Steckler 2016: 172). At one point of this inquiry, I see a pain form which 'looks/feels like' half of my face is folded onto the other half. Another image appears in my mind's eye, looking like one of those Francis Bacon portraits[7]. That's what my face looks like, its true form, as seen somatically or 'from the inside' (Figure 13.2)[8]. Then, it releases. My breathing improves.

This was a rather big pain form, while the ones that follow from this point are smaller pain forms, just strands of pain crossing my face. I stop to write it down before it fades – aware of its fleetingness:

> *Hold the form*
> *Sense its shape*
> *Without trying to change it*
> *Pay attention to its different facets*
> *Sometimes this reveals internal dynamism*
> *Follow without trying to change*
> *Seeing the form and its shape allows me to take a step back*
> *from the pain and see it as a shape, a thing*
> *To abstract the pain*

This dissipating of pain through listening to deep tissue and attending to micro-movement suggests that chronic pain, which is pain that has no physical or clearly identifiable place in the body, could be in fact movement that has stalled or frozen in a particular way (Conrad 2007). Suitably scaled-down kinaesthetic attention can help release it. This does not exclude that the source of the pain might be located in other structural dimensions of the body, in a different – though not separate – set of forces.

*Figure 13.*2 Face folded. Image by Paola Esposito.

Somatic morphogenesis as creative self-care

> Illness is frequently experienced as disturbance and chaos,
> as a threat to the whole experience of "being me."
> However, at the same time, illness necessitates transformation,
> which begins by incorporating the disruption and threat into a new self.
>
> (Honkasalo 2001: 327)

In this chapter, I described how 'imaginary constructions' of the body emerged through a butoh style of somatic attention. Such imaginary constructions were not 'representations' of the body interior but rather temporary 'place holders' (Ingold 2011: 197) for wayfaring through the somatic terrain of the body. This process I named *somatic morphogenesis*, coincides with a re-imagining of the body 'from the inside', whereby spontaneous images were not anchored onto optical visuality, as with mirror images, but emerged through

reflexive engagement with its somatic unfolding, as mediated by propriocep-tively and interoceptively inflected kinaesthesia. In my auto-praxiographic account, these were experiential, multimodal images that brought the world back into the body's interior. For instance, when working somatically with the bundle of pain in my face, the image of a Bacon portrait spontaneously overlapped, showing how a kinaesthetic way of thinking with the body can partake of a sense of form borrowed from the pictorial field. Thus, the inter-twining of imagination and perception applies not just to our encounter with the 'external' world, but also to our encounter with the inner world through self-perception.

As Ingold puts it, 'we must recognise in the power of the imagination the creative impulse of life itself in continually bringing forth the forms we encounter, whether in art, through reading, writing or painting, or in nature, through walking in the landscape' (Ingold 2011: 208). Or, as we might add, through attending to the living/lived body. While, for Ingold, a longitu-dinal or haptic orientation seems to exclude a lateral, or optical one, my explorations suggest an oscillation between both. That is, on the one hand, a butoh-with-somatic attention allowed to follow the in-flux, variational prop-erties of the body-as-material. On the other hand, because butoh is also a performative practice, it involves self-distancing, which can be healing (cf. Laderman & Roseman 1996: 7; Kapferer 1983: 249–83). As argued else-where (Esposito & Dziala 2021), butoh techniques for modulating aesthetic perception can yield processes of self-transformation by revealing the provi-sional, unstable sense of the 'body'. In the case described here, a butoh-with-somatics approach can destabilise obsolete or dis-eased images of the body by replacing them with novel and generative ones, that emerge from within. By virtue of the reflexivity it entails, a butoh approach supports a morpho-genetic and metamorphic model of the body which can extend beyond the domain of artistic practice, for self-care.

Notes

1 Butoh dancer, choreographer and teacher Ana Barbour invited participants (including me) in her classes to 'listen to what [their] bodies had to say'.
2 Ingold was External Examiner to my doctoral thesis.
3 They are this volume's editors, Caroline Gatt and Peter Loovers, and Rachel Harkness.
4 See also my use of 'auto-praxiography' in Esposito and Dziala (2021; 02:16–03:41).
5 Butoh is informed by Noguchi Taiso, which posits the body as a 'water bag in which our bones and viscera are floating' (Kasai 1999).
6 That the explorations took place at night-time is significant, for the absence or fading of light enhances the 'vision of the skin' through a phenomenon called the 'gloaming' (Irving 2013).
7 For instance, Self-Portrait (1973), and Portrait of Michel Leiris (1976). In this typology of portrait, at least half of the Figure's face is contorted, squashed, and deformed through smudges of paint. Deleuze (2021 [1981]) links Bacon's

pictorial approach to Artaud's concept of the Body-without-Organs, which is, 'an intense and intensive body' where instead of the determinate, organised, organs of organisms, you have organs as 'thresholds or levels' of sensation which determine not representational elements but 'allotropic variations' (33). Accordingly, Bacon does not 'represent' but instead 'makes visible' invisible forces acting on the body (Deleuze 2021[1981], 41–46; also, Ingold 2022: 36). These include time, which is made visible through 'chronochromatism' (Deleuze 2021[1981]: 35). Forces acting on the body precipitate sensation and 'the *temporary and provisional presence* of determinate organs' (Deleuze 2021[1981]; original emphasis). I draw a parallel between Bacon's art of 'making the invisible visible' and my imagining the somatically unfolding-body-in-pain. Like Bacon's organs, the images in my mind's eye are not 'representations' but *unstable* elaborations, momentary nodes (Ingold's 'placeholders') in the ongoing unfolding of the lived/living body.

8 Unable to replicate Bacon's use of colour, my rendition of this impression is a three-dimensional folded paper image. This 'reenactment' (MacDougall 2006: 272) was inspired by my participation in the 'Craft and Mathematics' workshop, led by Stephanie Bunn and Ricardo Nemirovsky, as part of the 'Anthropology as Education' Studio (convened by Caroline Gatt and Tim Ingold at the ASA 'Anthropology Educates' online conference, 14 March – 7 November 2022).

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14 The perception of movement in (and through) seafaring

Montse Pijoan

Introduction

An education in attention to the perception of movement in seafaring can offer a shift in people's way of perceiving the ground and, by extension, the world. This chapter analyses trainees' and permanent crew's animated environment on board sailing ships at the mercy of the ongoing movement of the sea. At sea, sailors develop skills that enable them to engage with rhythms, or relationships between movements, in a continuously emergent world of duties. Seafaring is about experiencing unexpected encounters between two mediums: the sky above, with wind currents filling the sails, and the ocean below, with its tides and waves lapping against the hull. This zone for admixture constitutes a more-than-oceanic surface, in which an entanglement of tensions comprises interpenetration of materials and affords a matrix for life and growth (Ingold 2022: 149). Due to this zone of intermingling mediums and the unstable support offered by the ocean, the sailing boat teaches trainees and sailors how every skilled response mutually constitutes the ongoing existence of the ship. The skills make evident the ways in which seas, sailors and ships are mutually constituted through action, through relationships that literally bring them into being. Consequently, I will show how skilled practices

based on the attention to the perception of movement at sea teach sailors a form of attention particularly attuned to movement and becoming.

Seafaring first affects the perception of the world with effects such as seasickness and disorientation, and once back on shore, the perception is shifted again. Showing how intrinsic and constitutional the perception of movement is to make the boat exist, entangling skilled practices aboard through the experience of unique mutually constitutive actions, the sailing boat offers a completely new perspective on how the world can be perceived arising from a dialogue with the ocean environment. On board, movement and presence are involuntarily yet continually shared. For both the sailors I worked with and in my own experience, becoming skilled on board sailing ships meant returning to a primary means of communication, 'our mother tongue, the movement' (Sheets-Johnstone 1999: 195). I will describe how the sailors I worked with became differently sentient, and how we created a shared rhythm with the ocean environment. What sharing the experience of acquiring an oceanic rhythm of improvised fleeting moments on board offers to its participants is a shift towards the education of the attention to movement previously disguised by life on land, where movement is nonetheless ubiquitous (e.g. the constantly shifting weather, tectonic plates, replacement of cells).

From meshworks to shifting perceptions of movement

My doctoral dissertation was about young people experiencing first-time seafaring on traditionally rigged ships and it is rooted in Ingold's work.[1] I develop this propensity by showing how certain skills, such as sailing on board tall ships, offer heightened attention to movement, emergence, and constitutive relationships. Ingold's lines of life forged along the creativity of the undergoing were an inspiring source of theory. These lines, or the way a person inhabits the world by being engaged with the environment, generate meshworks (Ingold 2011) of relationships together with the rest of the surrounding beings. This work considers seafaring as based on this process of texturing lines of life in a meshwork of relationships whose presentation, the sailing boat, becomes an entity made up of all the intertwining of those relationships. Therefore, the life of the sailing boat is constituted by all the lines along which one acts and perceives, participating in the duties carried within a system of watches, that is to say, work and rest shifts, in an emergent process to sail night and day on the constantly moving support of the boat. Those lines or paths of life knotted together by the necessary duties on board develop a process of learning by observing the environment, understanding the adjustments needed for the many different types of lines on deck, and affording maritime skills. Those lines, both physically and metaphorically, constitute the existence of the boat; they become a bundle of relationships shaped by the particular types of movement of the sea. The principle of movement entails the perception and feeling of movement as a unique and unrepeatable process that is constitutive of each path or line of life, therefore

it "should not be confused with the physics of locomotion" (Mazzullo and Ingold 2008: 36). Ingold describes the meshwork by referring to a spider web (2011: 89–94), and in my fieldwork, it offers an analogy with the ship's rigging. As with the web, the lines of the rigging constitute a mesh in which altering the tension in one line affects all the others. On a tall ship, there is a "meshwork of relationships" (Ingold 2015: 3, 154), which entails a "process in continuous movement" (Heraclitus in Radcliffe-Brown 1957: 10) in which life experience and the voyage are one.

Inhabiting the boat through their experiences, trainees and the permanent crew are continuously tracing emerging lines of life by actively participating in the existence of the boat within the challenges offered by the medium. Whether on land or at sea, the interpenetration of materials happens regardless; however, as I will describe below, our awareness of such an admixture is heightened at sea. The continuous process of ensuring the boat remains afloat, which I argue can be considered an ongoing making, or building of the boat itself, evinces open-ended twigs of lines not only amongst participants but also with non-human aspects of the marine environment. On deck, each of the lines is matched to an equivalent line on another part of the boat that will cause the reverse action of the first line, which means that when tying one, another must be released. Conversely, one line must be released for another to be pulled. Lines are not joined up but joined *with* the boat and all its material components. What is more, what comes from inhabiting an ocean environment on its more-than-surface are mutual encounters of shared correspondences. When the wind fills the sails properly, the hull glides through the water smoothly. When all the necessary ongoing adjustments on the lines of the different sails are in place, working with the constantly changing direction and strength of the wind and the correct steering from the helm, sailors on board perceive the movement of the sailing boat as harmonious breathing. The opening and closing, or tying and untying, actions on board a sailing vessel are like breathing because for life to continue, it needs to be ongoing and never stopping, but when a good rhythm is found, this constant motion, again like breathing, is life-giving rather than draining.

Fieldwork setting and theoretical approaches to the sea

I conducted my fieldwork on seafaring experiences in traditionally rigged ships as part of the Sail Training movement (Hamilton 1988: 40), which engages young people around the world to inspire them to live a fulfilling life and challenge them to develop life skills through living, working and interacting together on board. The Sail Training movement also offers these experiences to people who otherwise may not have the means to learn how to sail, for instance, through the Erasmus + Programme of the European Union, which provides financing for non-formal education and environmental approaches. It has been ten years now since my initial fieldwork experience. My roles on board varied on the different voyages: first, as a new trainee engaging in

participant observation, second, as a Spanish mentor accompanying Spanish trainees who mostly were minors, and third, filling the role of the Spanish youth coordinator helping all the Spanish trainees begin their first experience of inhabiting the sea. Fieldwork settings also included Atlantic crossings, an important experience for sailors because of the three- to five-week duration. Sail Training practices are international cultural experiences for young people aged 15 to 25 with different backgrounds.[2] These experiences often include tall ship races, and friendship events in which a fleet of traditionally rigged boats take on a majority of young people as crew, where no prior sailing experience is required. In some cases, mentors also have supportive roles for the trainees and they combine these roles with those of a watch leader, who guides the group of trainees in navigation techniques. In those seafaring experiences on tall ships, for the wellbeing of 'all on board', everyone and each part of the boat is important at any moment. That is to say, inattention to any piece, part of the boat, or individual can generate a serious issue. Therefore, a particular level of attention is necessary for life at sea.

In this chapter, I draw on examples from my work and research with the Sail Training movement to illustrate the shift in attention to the perception of movement that strikes everyone joining these sailing experiences. The young people I worked with came to perceive the ocean not as an entity but as an extension of its movement (Steinberg & Peters 2019: 3). As the Finnish trainee Rikka told me, 'the boat is a medium to be at sea': 'Once sailing, I am not feeling as if I am in a boat, I just feel I am at sea'. Edu, a wheelchair user trainee, told me that since he first set wheels on board *Lord Nelson*[3] in Cadiz, he felt the boat as an extension of his own body, similar to when he first adapted to the movement of his wheelchair. He became immediately touched by his sensitivity to movement once on board because, even with the boat anchored in the harbour, the feeling of so much movement was impressive to him. The permanent crew on *Lord Nelson*, drawing on their experience of more than 25 years, told me that not only are wheelchair users more sensitive to movement, but also they can easily recognise differences in the type of hull between the two main adapted tall ships of the fleet, *Lord Nelson* and the *Tenacious*.[4] *Lord Nelson* has a wider and more stable hull compared to *Tenacious*'s more angular hull. The instant effect of the different hulls on a newly boarded wheelchair user is that, on *Tenacious*, life becomes much more unstable due to its tendency to roll[5] more, whereas they felt more comfortable on *Lord Nelson*. The form of the hull has an impact on the kind of movement perceived on board. The movement of the sea becomes extended to the boat within its rhythms. Wheelchair users are more sensitive to the perception of movement when they shift from land to sea most probably because they set wheels on deck instead of feet.

Penny McCall Howard notes that 'sounds or vibrations are also transmitted through other solids immersed in the sea –like the hull of the ship– to be heard and felt by those living and travelling on boats' (2017: 93). Ruth, who is now one of the captains on the *Wylde Swan*,[6] told me that she learned to sail with a captain who did not explain a lot to her, but, nevertheless,

taught her to sail. During the night, they could be awakened by the same movement or sound. Ruth remarked how she learnt mostly by observing the captain's responses to these sounds and vibrations; by watching him she learnt which noises or movements of the hull she should be alarmed about. Ruth said:

> At sea, you will always trust your wisdom from experience first rather than your technical knowledge! You can know such a lot in theory but if you do not recognise it when you are there, it doesn't have any meaning, so you need to be able to read the situation, making a continuous effort to be more sentient.

As anthropologist Joseph Genz asserts, 'although the navigator might seem motionless, the canoe works like an extension of (his) body to evaluate the movement of the ocean' (2014: 342). Additionally, through the perception of movement, 'supplemented by descriptions and gestures' that are 'difficult to communicate effectively through oral language' (Genz 2014: 342), vestibular and kinaesthetic information is assimilated. It is not a question of language but of movement, 'of lines that are the dynamic lines of movement itself' (Sheets-Johnstone 2017: 9). The intermingling of mediums, of the sky above and sea below, goes beyond scapes or a surface at sea. This resonates with Alphonso Lingis' conception of the wind as a sensuous element in which we are all immersed, a 'depth… without surfaces or boundaries' (1998: 13). The perception of movement, like the perception of wind, is felt as an immersive extension of the sea without boundaries, making the ship become a meshwork. In other words, the ship is part of every crew member and vice versa; it exists only by the presence of its crew seafaring on it in 'mutually conditioning correspondence' (Ingold 2022: 175). Anthropologist Gisli Pálsson discusses the notion of 'enskilment' at sea: emphasising being caught up in the incessant flow of everyday life by immersion in the practical world (1994: 901). For him, as for the sailors in my fieldwork, getting one's sea legs – becoming skilful – means attending to the task at hand and actively engaging with a social and natural environment (Pálsson 1994: 901). Howard adds that enskilment for novices living and working on the West coast of Scotland means to 'anticipate, understand, deflect and control the motions, tensions and forces involved in working at sea instead of simply being subjected to them' (Howard 2017: 100). She notes that effective work at sea requires an extraordinary extension of the body's perceptual abilities (Howard 2017: 90). However, as remarked by Howard and Captain Borillo in my fieldwork, 'Every boat is different'. Whereas Borillo remarks on two identical sailing boats that become adapted for sailors by their use and the sea environment they invest in, Howard focuses on a man who spent 40 years on cargo ships but feels completely awkward in her small sailing boat (2017: 101). Sailing ships afford attention to movement in a much more heightened way than mechanised forms of boats, especially in the case of enormous cargo ships.

Howard also focused her analysis on Marcel Mauss's discussion of techniques going beyond the human-environment relationship and taking into account boats and tools without which it would be impossible to work at sea (2017: 115). For the fishermen she worked with, several devices such as maps, GPS chart plotters, or techniques such as control of the tension of the net lines, or the feeling of the hoppers of the net bump along the seafloor by the vibration on the wheelhouse wall, have the potential to be adapted and transformed around the needs of one's own body and according to one's desires and aspirations (Howard 2017: 116). Trainees and permanent crews on tall ships are constantly working and adapting techniques and sails to person-centred necessities to reach the best 'set of sails'. Although techniques and enskilment by practice in relationship with the environment follow similar processes of acquisition, whether under the command of fishermen or on cargo ships, priorities of the market to get a price are the main objective leaving maintenance or the crew's well-being and environmental relationships out of the scope (Howard 2017: 116; Leivestad & Markkula 2021: 3). Contrary to it, bonding cultures, backgrounds, safety, trust and abilities aboard are priorities on tall ships that mark out the sailing experiences I have been a part of as unique, driven entirely by the aim to teach the experience of sailing. This means there is much more time and energy dedicated to such experiences on board.

Beyond the shift in the perception of movement from land to sea, the continuous presence of movement in life at sea is treated as a fluid ontology that is an understanding of the world as forever emerging and emergent (Anderson & Peters 2014: 13). This is also referred to as 'ontological *in*stability' (Anderson 2014: 73) in debates about the materiality of the sea and its movements such as the *Wet Ontologies* by Philip Steinberg and Kimberley Peters (2015) and *Water Worlds* by Jon Anderson and Peters (2014). These approaches, like my analysis of the habitation of the sea, debunk Mimi Sheller and John Urry's (2006) new mobility paradigm defining ships as places 'moving around and not necessarily staying in one location' (2006: 214). The problem in Sheller and Urry's statement is that the movement of the ship is understood merely as a physical displacement but not as a constitutive element of the existence of the ship and its crew members. Sheller & Urry's 'mobility turn' (2006: 207) speaks of 'combinations of presence and absence' (2006: 222), whereas in the constitution of the boat as a meshwork of relationships, all that matters is presence and attention. At sea, presence substitutes emplacement and absence is assumed as part of the presence. In other words, the rocking movement of being at sea with others makes the absence for instance of a family member, a part of the body, a piece of chocolate or even the wind, bearable and not a key aspect of the experience. Conversely, attention is primary because movement is existentially present; it is always there, night and day, and you feel and perceive it while sleeping too, as mentioned by Ruth above. The descriptions of trainees' actual experiences I provide in the next section show how movement on board such sailing ships is not perceived as

mere displacement but offers an education of attention to emergent and constitutive relationships.

Qualities of movement as an extension of the sea

During the 2016 tall ships races, a shared experience happened with a group of Spanish trainees on board the *Morgenster*.[7] As is common in any friendly tall ship race, there was a 'parade of sails' off of the harbour of Cadiz. A 'parade of sails' is the event in which an audience stands by the coast to observe how the fleet of tall ships sets sails altogether to start the next voyage. Some smaller boats, on which I, together with some family members were sailing, accompanied them. We were astonished by the young trainees, who, having climbed on the mast and distributed themselves along the *Morgenster* braces, were up there, standing and waiting to drop the sails for its setting. The shift of perception of movement as an extension of oceanic constitutive relationships was at its most by those trainees up to such a height, from which perspective the sense of oceanic rhythms is multiplied. The first peak of shifted kinaesthesia that is normally not assimilated by participants in this experience is when they feel seasick. Sheets-Johnstone (2017) remarks on the difference between *kinaesthesia* and *kinesia* of dancers moving in concert. The particular type of awareness of movement needed to sail that leads to a sense of making together 'the ship' with the ongoing actions of every crew member can be compared with the movement in concert that Maxine Sheets-Johnstone (2017) describes for dancers. Therefore, describing kinaesthesia as a 'felt' and kinesia as a 'perceived' ongoing qualitative dynamic of movement, moving in concert while sailing in an ocean environment, leads to attention to the richness, subtleties, and complexities inherent in the attention to movement aboard. Whereas 'perceived' kinesia becomes part of the exterior body language, 'felt' kinaesthesia means that even if one is not seeing one's body, one internally feels the movement and position of one's limbs (2017: 12). Genz also distinguishes kinesia noting that the perception of ocean waves, swells and currents involves watching and listening to the flow of waves, from kinaesthesia that 'rests primarily on the navigator's sense of balance while perched on the lee platform of the canoe', and as a result of both of them, the principle of 'the navigator's movement through the ocean' (2014: 342) compounds all of them.

   Being all together and catching the same rhythms within an entanglement of relationships means that trainees switch their way of acknowledging the environment from land to sea once joining the Sail Training experience. For this reason, it can be said that the kinetic perceived movement of oceanic rhythms first generates arrhythmicity, which needs a period of adaptation in dialogue with the environment in order to, afterwards, kinaesthetically feel the movement. The parents were right to be doubtful about their children's readiness to climb the masts when the boats paraded from the harbour. Their image of soaring as flying birds climbed up on the braces

during the parade of sails turned into high levels of seasickness, nausea and vomiting that lasted in some cases around five days, as we learned once they reached the next harbour in A Coruña. Convinced of their ability to climb the rigging without having yet acquired a certain level of processed kinaesthesia, the shift was sickening to them. Therefore, those Spanish trainees had experienced by themselves both how the ship's movement increases up on the rigging, and how at sea, movement is felt differently. Furthermore, like the feeling of the wheelchair being part of oneself, kinaesthesia takes its time to get integrated. The average period of a process of adaptation until not getting seasick once on board is two or three days, while once on shore it can take 'from six to ten days' to recover a sense of stability from the so-called *mal de terre*.

It is also worth bearing in mind that as a floating void *kinetically* dancing with the ocean, the watercraft can give us a *kinaesthetic* experience of inhabiting a weightless medium when spending some days at sea. This interplay is carried out through movement, and each participant needs to deal with it by opening up to other possibilities. Both body limits and boundaries acquired by our terrestrial habitation become permeable when they are required to inhabit an ocean environment. Non-human aspects comprise currents, winds, and waves as well as the form of the hull and the size and form of the sails. As examined by Paula Schiefer, with the non-human relations of 'negotiating salmon', 'relations create realities, and we should be open to question what exists and how it is enacted in stories and practices' (2021: 74). In such an unstable environment, participants are immersed in a process of adaptation of their limits to other experiences, dialogues and relationships.

All in all, boats can move in three rotations (Barker 2016: 51), out of the six transient, oscillatory meshed movements. The feel of 'an entire ocean in a drop'[8] can be described by a range of meshed movements of the boat.[9] Swaying and surging are similar to our postural sway as 'our continual shift of weight from one foot to the other and from the front to the back during normal standing posture' (Giraldo Herrera 2013: 138). All the evidence points to experiencing a bundle of weightless movements on board that provide strategies to trainees to keep carrying on with their duties while compensating for increased movement with postural adjustments. They also find alternative abilities or skills, such as a trainee without fingers who challenged Edu, the trainee on *Lord Nelson* mentioned above, by showing him how to make knots. Being a wheelchair user with cerebral palsy that also affects his arms, Edu could not eat by himself on board, nor roll his cigarettes. Whereas he could eat by himself on land because his movement was more limited in his legs, he realised that he needed some help once on board. He was hoping to find a compensated ability as his mate did with making knots, because as mentioned above, in Sail Training contexts there is explicit attention given to care on board. In extension, blind trainees were able to know in which direction the boat was sailing. For instance, a fresh breeze is felt on deck with the

relative wind, which is the speed and direction of the wind measured from the vessel. To feel this wind gently in your face, the true wind must come from aft, while the vessel seems to escape from it. On the other hand, when the boat makes a turn and starts sailing against the true wind, one will soon notice that more clothes are needed on deck. Many trainees change their impressions about the essence of a life in movement after their experience at sea. What is more, one must emphasise the irreversibility of lines 'along *paths*' of life (Mazzullo & Ingold 2008: 32) textured by their relationship with the environment (Olwig 2002: 226). In addition to the fact that those lines are in movement while being lived, they simultaneously turn a being into a differentiated being after a new experience, designing the creative nexus of a life fully entangled with the environment.

From seasickness to flow or vice versa

The movement of the boat increases dramatically once you set sail out in the open sea, leaving the line of the harbour lights or even just in the harbour, as was the case for Edu. The effects of the shift on the perception of movement from land to sea are surprisingly impressive for almost everyone I worked with. Despite the fact that Michael Stadler notes that 'seasickness is mostly evoked by movements of large amplitude and low frequency' (1987: 65) from the shift in movement, experienced once facing this environment, trainees experience a psychological change like becoming homesick. How every new trainee faces the experience of movement provided by an ever-unstable sea shows how their perception of the world beyond the sailing ship shifted. Joana, Alba and Rafa were three trainees on board the *Pelican of London*[10] on the leg from Coruña to Dublin. Joana and Alba, both 15 years old, were only able to go up on deck after three days of storm, seasickness, vomiting and praying for their mothers to be there. Joana felt seasick and wanted to vomit outside the main hold. She went out on deck without her harness. An abrupt movement of a coming wave made her fall and slide to the front corner of the leeward side of the main deck. Alba and Rafa were following a similar journey, experiencing seasickness for three days. When Rafa, first, was able to sense the movement of the sea through the boat without being sick, his eyes began to shine as he observed the impressive coming and going of big waves, which were heaving, yawing, and surging, making the *Pelican* roll again and again. Ian Urbina notes that the primary goal of perceiving the oceanic movement is to reflect on the way the sea changes you psychologically and physiologically (2020: 153), which was clear in Rafa's case as much as with Alba and Joana days after. Rafa started fully participating in his watch duties, he was pretty happy to collaborate with the others even though before coming on board he had a lack of enthusiasm to do anything. Alba slowly began trusting the others and managing to get rid of her earlier fear of socialising. Joana was adventurous in climbing up the mast with her watch mates the day after seasickness was over. Coming to experience the

togetherness of sailing, she became proud of the group as much as of her achievement.

Far and away the most important point is that, at sea, it is not only movement that is central to an understanding of 'the relationship between body and context' (Ryan 2012: 64) but also the relationship with the boat and wider environment. Duties on board such as fixing different parts of the ship, hoisting the sails, acquiring tactics for steering, and navigating, are explained by the permanent crew to the trainees, accompanying them while doing them together. As trainee Pieter on the *Wylde Swan* shared: 'We are now fixing the throats for the ladders for climbing up the mast; before, we took apart some of the winches, greased some tools, just a whole bunch of different jobs'. Those duties need to find the rhythmic temporality between tensions by adjusted postures. Being fully awake and aware of the 'tensional shadings, amplitudes, directional changes' and the like in the ongoing flow of movement (Sheets-Johnstone 2017: 12) perceived on board a sailing ship, crew members not only get skilled at sea trying to adapt the kinesis of the ship to its best adjustment of the sails, but they also become more aware of a new range of felt movement that exceeds terrestrial limits. What is more, still being on shore, trainees learn how to coil the ropes, how to climb the mast with the lifelines tethered on the shrouds, and how to steer the helm. But carrying on all these maritime skills such as cooking or cleaning the boat while at sea has nothing in common with doing them onshore. For instance, William, also a trainee on the *Wylde Swan,* explains how he improved his maritime skills by practising to overcome the amount of movement:

> My coiling began to improve, I am rather faster now, and the same with tightening the ropes... I think life on board is a lot of work; working with the lines, you get to know the ropes to adjust the sails; a lot is about adjusting, not only the ropes but your body to the movement too.

The principle of movement constitutes the trainees' own experience and the existence of the boat rather than it being a disconnected entity from the environment. In the same way, trainees need to get accustomed to how they sleep in their bunks. They also have to find their best position to sleep depending on the heeling[11] of the boat when their watch duty is to rest. Reduced spaces such as bunks, pathways with lower ceilings, and steep stairs make every new trainee get some bruises from their clumsy mobility once set sail. Gaston Bachelard defines this accommodation of the body into a different space as 'muscular consciousness' (1994: 11). On board, the more the physical volatility of moving against the boat's rhythm (and its reduced spaces induce some bruises), the more consciousness emerges to collect ropes and sails on deck, as much as personal belongings become stored in place under deck. It is vital to remember the non-acquired kin-aesthesia effects aboard because any insignificant personal belonging not correctly stored can fly or make someone trip on it when the movements

of the boat suddenly become acute. The sea forges maritime skills amongst crew members and this debunks any existing emplacement on a boat (Sheller and Urry 2006: 214) if it is not textured with the environment by 'practice-centred becomings' (Anderson 2014: 75).

On board, engaging with movement through a process of differentiated adjustments within mutuality, trainees' principle of movement acquires reality when attentiveness to the movement and actions of their lived experience on board is central to their existential path of life (Sheets-Johnstone 2011: 116–7). For instance, Jonathan, who became captain on the *Wylde Swan* without previous studies, became so skilled at sea that he was able to make it his profession by being attentional towards the ocean environment. The process he experienced in the acquisition of maritime skills involved great accuracy in the perception of movement in an ocean medium. Life at sea entered directly into the constitution of his personality 'as a source of knowledge' (Ingold 2000: 57) while, reciprocally, he entered actively into the constitution of the ocean environment: 'For me, sailing is just perfect as a way of living, of having a job that allows me to travel around all the time, and also have the challenge to be good at something'! Ever since sailing began, masters and pilots have always prided themselves on knowing the 'feel' of their ship and how much way she is making (Taylor 1971: 52). Mihály Csíkszentmihályi describes sailing as one activity conducive to flow, which means that despite having rules that require learning skills and setting up goals, it provides feedback and control, and facilitates concentration and involvement, which makes the activity as distinct as possible from the reality of everyday existence and designed to make the optimal experience easier to achieve (1990: 72). In other words, they provide harmony related to the level of education to the attention of movement in an ocean environment. For instance, at sea, attention to every practice is a priority because the sea is a potentially dangerous environment in which injuries are always possible. Tightening the ropes on shore without the tension on the lines is not dangerous, but once sailing, the last eight of the ropes need to be kept on the cleat if one wants to ease progressively, or if with the help of other fellows or a winch, the rope needs to be tightened.

Following the gigantic salty water dance, beings are animated by the sailing flow. Experiencing this movement on board, 'entering into a continued skill-based creative and evaluative dialogue with one's environment in the widest sense', one takes pleasure in and excels at different aspects of the experience (Portisch 2010: S 77). Therefore, as evidenced by the experiences of trainees amongst several crews who inhabited the sea for the first time, their apparently dormant bodies on the land increased awareness after being possessed by the awakening incessant movement of the sea. Being entangled in the oceanic environment by seafaring, attention to others and the surrounding environment increases because the sea is an environment fully involving the presence of others in continuous movement. In her thesis *Anthropology of the Wind* (2015), based on fieldwork in Caithness, Scotland, Rebeca Louise

Senior observes, likewise, that the wind 'qualifies our movements, thus drawing our attention to a notion of life as continually regulated by the surrounding world' (2015: 108). On top of that, the major impact of the seafaring experience results in transforming trainees' felt experiences about their body limits and boundaries, opening ways of educating attention to the perception of movement in such an environment that is missed once back on shore. Interestingly enough, as noted by César E. Giraldo Herrera: 'After landing, I often experienced *mal de terre*. I tumbled while walking, while standing, sitting and even sleeping, in particular whenever I was relaxed' (2013: 357). In other words, whereas at sea, you are 'something' together with 'something else' bigger than yourself – something like any wave, dancing with something else entangled in a meshwork of relationships, not individually but in correspondence; on shore, due to changed amplitude of movement, attention needs readjusting and may cause discomfort once again. The form of attention to movement changes the very constitution of the sailor, making them able to inhabit a sailing boat progressively without seasickness. On board sailing ships, sailors develop a form of kinaesthesia that enables them to learn and refine their skills which helps keep that movement going.

Conclusions

Inhabiting a marine environment through seafaring implies a shift in the perception of movement from land to sea for young trainees. What life at sea provides is the nexus of a constant intermingling of mediums that empower sailing participants to become entangled in a world in which movement is primary to language as a means of communication. Therefore, what is discussed in this chapter is not only that the ocean puts human beings on board back to their inner constitution of being in mutuality but also that this shift in the education of their attention through movement broadens this attention to terrestrial relationships. The ship as the vessel that allows an oceanic environment to be vividly inhabited sheds light on Ingold's concept of a web of relationships (2011) whenever an oceanic world of ceaseless movement textures the environment with the flow. In other words, beyond the perception of movement, it is both the non-human oceanic relations and the weightlessness of the watercraft that look for mutual correspondence by a process of enskilment that turns a being into a differentiated being.

The education of attention to the movement that arises from the experience of sailing affords trainees a setback in the establishment of a relationship with the environment, one that would never be the same either physically or psychologically once back on shore. On top of that, the principle of movement as existentially constitutive of multiple experiences transforming young trainees' skilful abilities interplays with the oceanic environment, incorporating bodies of experience beyond their land-based experiences. What the

sea, demanding attention, awareness and skill, encompasses is a sense of being 'all at sea', meaning that 'all on board' would face the instability of this environment by aligning differentiated mutuality beyond individuality. Inhabiting the ocean environment offers – by a differentiated understanding of the world and its tensions – paths of life through the education of attention to the perception of movement; attention that in extension, cares for the existing others always present at sea.

Notes

1 I must be grateful from the beginning of this dissertation for the way Tim Ingold *understands and predicates* Anthropology. I was privileged to work under his supervision, which means exactly that what he states, it has been practised along the way, exposed to *the risk of this new beginning*. With the same care and attention, in a broader way, I had the support of the Department of Anthropology at the University of Aberdeen, where Penny M. Howard, César E. Giraldo Herrera and Rebecca L. Senior also engaged their work in studies of seafaring or weathering relationships with the environment.

2 Quoted from www.sailtraininginternational.org

3 Lord Nelson: Barque three-masted/ 49.15m length/ Class A/ Built in 1985/ UK.

4 Tenacious: Barque three-masted/ 54 m hull length/ 35.24 m height/Class A/ Built in 2000/ UK.

5 See footnote 9.

6 Wylde Swan: Topsail Schooner two-masted/ 43.71m hull length/ 36.27m height/ Class A/ Built in 1920/ Netherlands.

7 Morgenster: Brig/ 38m hull length/ 25m height/ Class A/ Built in 1919/ Netherlands.

8 Yalāl ad-Dīn Muhammad Rūmī, 1207–1273 CE, was a 13th-century Persian Muslim poet, jurist, Islamic scholar, theologian, and Sufi mystic. once stated about human beings comparing them with the ocean: they are not a drop in the ocean but the entire ocean in a drop.

9 *Pitching* is the back and forth oscillation that opposes one another the rising and falling of bow and stern, meeting the crests and troughs of the waves; *rolling* is the tilting motion of the ship, from starboard to port, coming from wind and waves pushing against the side of the ship, causing it to rock sidewise; *yawing* is the third rotational movement which spins the ship around an invisible vertical middle line, changing the heading of the ship; *heaving* is the up and down movement of the ship, like ascending or descending in a vertical line, lifting the ship up onto the top of waves with large swells and dropping down into the troughs; *swaying* is the sideways sliding motion for the ship being pushed by the wind or a current against the hull; *surging* is the front to back motion of the ship, emerging from large swells that can make the ship increasing her speed forward. Visit https://nautiluslive.org/video/2020/12/09/beyond-wow-six-types-ship-motion for audio-visual support.

10 Pelican of London: Barquentine three-masted/ 35m hull length/ 21.20m height/ Class A/ Built in 1946/ UK.

11 Heeling: The 'heel' is the boat's average sidewise leaning, in contrast to 'roll', which is transient, oscillatory.

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15 Upstream and downstream

A conversation on limit as education through marathon running in prison and kayaking along rivers

Paolo Maccagno and Deborah Pinniger

Upstream and downstream rivers

Leading out is facing the unknown. This being the subject of our text, we can't predict and anticipate with an introduction where we will go. This can be disorienting but it can also heighten one's attention and awareness. We can start where we are – in the middle of our ongoing conversation and invite you in.

We recently ran an extended workshop as part of a module on Inclusive Adventure that Deb was delivering to students who were studying for a degree in Adventure Education, at the School of Adventure Studies, University of Highlands and Islands, West Highland – Scotland. We titled the workshop *Upstream and Downstream. Being at Home in the Open*, where we explored moving upstream and downstream in order to give voice to other ways of adventure, education, and research.

As part of the workshop, we organised 'Around the Fire' conversations, held with students. This practice is an educational and philosophical practice which stems from a recent exploration elaborated by the school Philo[1] in Milan (Madera & Tarca 2007) towards different ways of communication. This practice suggests that people gather around a fire (which could be imaginary or real depending on if the workshop is in presence or not). In

this context, everyone is invited to talk in the first person and from their own biography, imagining their words to be pieces of wood to add to the fire in the middle. In this specific setting, we found that directing the participants' attention to the middle, keeping the fire growing and providing heat, rather than primarily looking at each other's faces, led to a less confrontational[2] experience and offered the opportunity to talk differently.

The 'Around the Fire' conversation at UHI, West Highland was the final activity of the workshop, which was attended by 20 students. The workshop consisted of several conventional classes at the UHI, West Highland campus, followed by a two-day overnight canoe trip down the River Spey. This workshop is one of the many ways that we (the authors) have been in conversation over the last few years. Our respective practices of marathon running and kayaking brought us together to share and further explore our experiences about limits and education. In recent years, we have been organising (independently and together) workshops for students and people who were interested in taking part in paths of education where they had to face and deal with limits. Indeed, running, kayaking and having specific ways of holding conversations (such as Around the Fire), highlight limits and afford other ways of perceiving the world thus enabling us to change what we know. These forms of educational practice help to see the world differently. From this point of view, these paths are educational in the sense of *educere,* as a way of leading out, suggested by Jan Masschelein (2010) and elaborated by Ingold (2018)[3] because they lead out from orthodox ways of knowing and transmitting knowledge. Importantly, they lead out existentially. Each of us (participating in these paths and workshops), whether one is the teacher/ guide or the student/explorer, is offered the experience of the open which is not just being in the outdoors but being exposed, vulnerable and very much alive. This experience is triggered by specific contexts of learning where the individual faces a limit of some sort and can open up to differences and other ways of being in the world. In our perspective, this is important because it allows offering other ways of thinking about knowledge transmission, beyond conveying already known information from one person (the teacher) to another one (the student), as it is generally for orthodox didactic practices. In fact, thanks to facing a limit, both the teacher and the student are brought together and can open up to the unknown, while respecting their differences and profiting from their diverse standpoints. The notion of limits as education is actually where we started our conversation a few years ago comparing moving upstream (marathon running) and downstream (kayaking).

After the trip on the River Spey, we held an 'Around the Fire' conversation. For this event, we invited renowned kayaker Scott Lindgren, who told us about his life paddling wild rivers, and, more recently, being diagnosed with cancer. After receiving medical treatment, he felt that 'the only way out was downstream' and, therefore, he considered going back to rivers as a way of healing. Releasing control and surrendering to the flow of life gave him freedom so much so that he felt at home again in a body that had begun to feel alien to him. His story is also about education. Experienced younger

kayakers invited him to paddle the Indus River. They acted as mentors and guided him to the edge of the river to help him regain trust in the water. Scott said, 'They didn't correct me in any way, they just sat in front and let me follow them down the river'.

Paolo – Deb, you have a long experience in kayaking, having been a top world athlete. Now you offer expeditions for accompanying people to remote places, to go down beautiful and wild rivers with the kayak. People then feel transformed. In which sense is moving downstream related to the notion of limit and education? What is downstream?

Deborah – The experience of moving downstream by kayak fits well with ideas around limit and education since moving downstream by kayak is to set out on an unknown path, into the open, exposing oneself. Downstream is a movement where change is constant, and which demands a willingness to be vulnerable and accepting of not always being in control. Before I move on any further, it might be helpful to briefly describe what is actually involved in kayaking a white-water river and reading its rapids, in order to effectively move downstream. To move downstream safely, the paddler is required to read its rapids and seek out a navigable passage through them: this is called a 'line'. On a visual level the paddler is concerned with reading the waters' features and the variations of these features – their shapes and flows, the speed, colour and texture of the water, and the gradient of the river, then finding a safe route through them.

A significant characteristic of moving downstream is that as a river becomes more difficult to navigate by kayak in particular places, the possibilities of a runnable line decrease, however, the consequences if one strays off-line greatly increase because of the many unnavigable obstacles on either side of the line. So, kayaking at the limit in Grade V or VI rapids[4] is not about having unlimited options and infinite freedom; in fact, it is the very opposite, it is about narrowing possibilities down to the minimum of one or two possible lines of navigation. By choosing one of the few options on offer, other options disappear, and it is through the elimination of options that an opening of *clarity, care*, and *attention* presents itself towards what needs to be realised in order to move forward. Therefore, success at the limit depends on the skill of attention and care that cuts out non-viable possibilities to create the space to focus principally on the affordances required to move forward at that moment. In a sense, moving forward here is about taking on the responsibility to consciously close down options and focus with great clarity and attention towards a particular opening at that moment.

Key also to moving downstream by kayak, is the speed at which events occur. That is, the time between decision and consequence is very short, and it is in this sense that *you live in the immediate consequences* of your decisions and actions – in the act. Because the windows of possibility close fast at the limit of moving downstream, you are forced to make decisions which have imminent consequences. Thus, at this particular limit, there is

a complete acceptance, and hence, also, responsibility for the outcome of decisions. This results in an experience of being at peace with one's decisions, or, potentially, death.

Paolo you have been running marathons for a long time and have been very inspired by the 'wall of the marathon' as a place of limit and high educational potential, how do you see the wall as educational and how might it relate to upstream?

Paolo – Moving and running upstream have, from my point of view, something in common with the experience of running marathons, and in particular with encountering the wall of the marathon.

I started running marathons not just because of some passion for running but because someone mentioned to me the wall of the marathoner. This limit can occur around the 35th kilometre where a runner can hit the wall and collapse from physical and mental exhaustion. It doesn't always happen. When asking advice from other runners about how to run a marathon and how to train for it, they always reminded me that however carefully you prepare for a marathon, you never know what will happen. My attraction lay exactly in the unknown and in the idea that there is a point at which you do not know what happens, which goes beyond your control. It seems to me a great message of hope, of finally getting rid of the feeling that one must be able to control everything. One can, sometimes, collapse at the wall and, at other times, pass through it. The wall is ambiguous and enigmatic. It is unpredictable and eludes any attempt at grasping it. Innumerable anecdotes tell of runners falling into a state of confusion and feeling lost when approaching the end of the race. Although challenging, this moment has also a lot of potential in terms of offering new openings in life. One can actually stop at this point because the really important question is knowing when it is enough, where to put boundaries, what is a healthy way of life, and where saying no or persisting with something becomes a matter of care of the self.

As you write about moving downstream, a feeling of complete *clarity* seems to be a common experience in the effort *upstream* of running marathons as well. But this clarity comes from not being in control; in fact, from a feeling of being lost. Similar ideas emerged in my running practice and, more specifically, through my research on marathons (2015a) where I investigated the wall of the marathoner in the experience of fellow runners and myself over a period of five years.[5] That study highlighted the potentialities of the wall for human experience and anthropology. In fact, something that I found and shared with fellow runners, is the sense that the wall takes the individual into a 'no man's land' to cross a desert and face emptiness. Doing so offers a paradoxical educational experience. It tells the runner: 'If you want to arrive at the finishing line, you don't have to think about the finishing line. You have to run as if you would run forever' (Maccagno 2015a: 49). The experience of the wall reorients the attention of marathon runners from the finishing line to the movement of

running and the present moment so that they stop facing it; rather, they can run forever along it as if it were an asymptote. The wall asks them to stop taking the race as a straight line connecting Point A at the start with Point B at the finish, to achieve a personal best. For the runner, there is no finish and no ultimate destination. As in life, you have no option but to carry on.

It is at this moment that you might feel like you are going upstream against the mainstream of assumptions and values. Being a participant in a marathon, as it emerged in my study, meant initially accepting a subjectification defined by the race itself, as a competitive event. It all begins as an exercise in identity construction. One may want to run for different reasons like ranking, personal branding, wellness and sociality. But these motivations work only up to a certain limit; they cease to work when the runner encounters the wall and experiences strong sensations of fatigue. The thought of receiving a medal or a hug at the end of the race is not enough to make them continue till the end. The strain destabilises their sense of identity, and with it, its cultural background. The marathon runner experiences the loss of meaning of an established value paradigm (the values placed on being the first, gaining social recognition, and feeling fit) and must direct attention to the gesture of running. The wall dissolves the rigidity of social and value structures and leaves the individual exposed.

In fact, the marathon brings runners to a threshold limit providing contradictory messages.[6] On the one hand, they are, indeed, pressed by the ambition to achieve a *personal best* imposed by the logic of classification of the race (achieving a result and coming first). On the other hand, they are encouraged to live in the competition as *finishers*. This word is indeed printed on the back of the t-shirt that they will receive after crossing the finish line. The marathon conveys these two messages at the same time. Trying to do a *personal best*, in many cases, triggers anxiety which is detrimental in a marathon and often makes the runner collapse at the wall. Being a *finisher* is an acceptance of a different way of living the race which does not evaluate it only based

Figure 15.1 The wall as a limit in the case of the marathon (Maccagno 2019).

on time. To be a *finisher* means that what counts is not the stopwatch but arriving at the end. This is part of a transformative experience that escapes the logic of performance and its obligatory recognition of rank or classification. Being a *finisher* could mean taking an upstream path of solitude out of social approval and recognition.

Deborah, you also mentioned a similar sense of exposure occurring in moving downstream. In what sense does one feel exposed in kayaking?

Deborah – A person feels exposed moving downstream by kayak because of the many variables that you cannot account for: the way the water reacts to the river's bed; its banks; and its rocks, they are all unpredictable. In this sense, there is a whole unknown aspect of moving downstream as water can affect your kayak in unpredictable ways and since you cannot fight it, you must surrender to the river and follow where it leads you, as this is the only way to regain control. So, you need to be comfortable with exposure and that comfort comes from the experience of being ready to follow where the river leads you, which may well mean moving momentarily into chaos and away from one's planned line, thus one must correspond with the water, whilst simultaneously paying attention and letting go. These ideas seem to align with your description of the wall experienced by the marathon runner, in that there is a point which goes beyond your control, but in which you are hyper-aware of yourself and everything around you.

In kayaking, this is concerned with reading the water and being on the horizon. In large-volume[7] rivers, such as those found in the foothills of the Himalayas, like the Karnarli and Sunkosi, since the rapids are generally long but not so steep, skilled kayakers are able to use the features in the white water, such as wave and holes to momentarily pause and pick up information; in this sense, you are continuously on the horizon. Since you are on the horizon, at times, you cannot see all of the details in the rapids; thus, a large part of reading big water is concerned with using your knowledge to fill the gaps of missing information and to draw on past experience and knowledge to imagine what is missing besides making sense of why it is missing. These experiences challenge ideas around how we often see horizons as having boundaries and limited possibilities of imagining new openings. Instead, they illustrate the way in which exposure forces us to attend, with great care, to the details available and to think without being limited by the boundaries and horizons that can constrain our imaginations from what is possible in order to move forward. In *Imagining for Real*, Tim Ingold describes such a way of imagining as 'entering from the inside into the generative current of the world itself, by balancing one's very being on the cusp of its emergence' (Ingold 2022: 4). Ingold's ideas speak of how *imagining for real,* affords us the possibility to consider that what is real is, in fact, malleable and open to development and change. Thus, if we are serious about the challenges of a changing world, and living together in sustainable futures, we need to

'imagine for real' (ibid) and begin to find new ways to envisage beyond the horizon and the boundaries that limit our imaginations.

Paolo – The notion of the horizon is very interesting, and I found it differently nuanced in my experience, especially working with prisoners through marathon running. In the last decade, I have been doing projects in prisons in Italy (Bollate – Milan, 2013–14) and Scotland (Peterhead – January–June 2016 and recently since beginning 2023 - through Runforever[8]) where I proposed the paradox of contrasting imprisonment with marathon running and explored the potential of juxtaposing two very different experiences that both test the human being's capacity. Together with a group of around 15 prisoners (in both Italy and Scotland), we tried to learn how to run within walls by drawing a parallel between the experience of the wall of the marathon runner and that of the wall of the prison. I realised that, in the prisons[9] (where I worked) as in a marathon, the wall offers openings in a space without a horizon (Maccagno 2015b).

Let me deepen what I just said with a few memories from the prison project. Inside the prison, the encounter with the wall of the marathon is emotionally doubled for experiencing it inside the walls of the prison. In that context, thanks to some fellow prisoner runners, I started to understand how encountering the wall (of the prison and the marathon) makes you feel without a horizon, similar to being blind. This is highlighted when running against one of the walls of the prison. It makes you feel overwhelmed by its presence as if it were alive and moving towards you. The distance to cover is often so short that it is as if one were moving inside the wall itself. The wall is 'out there', but you are, nevertheless, inside that outside. This resounds with what you, Deborah, said earlier about kayakers being always on the horizon. Indeed, marathon running in the prison is not so much running in between walls as running inside walls, inside their thickness. The experience is one of immersion within a movement which runs opposite to yourself as if you are going upstream.

My approach has been close to one of an artist who engages in experiments to open a creative path. In the project *Running Walls* (Scotland), I worked with prisoners as well as prison staff and members of different associations working in the prison. In this work, I followed and developed Ingold's notion of education as leading out (Ingold 2018). In fact, I was both leading the participants out and, at the same time, I was being led out in exploring the question: What if I run the wall of the marathoner inside the walls of a prison? I invited all the participants to ask this question in the first person 'I'. No one, in fact, knew the answer; I certainly did not. This brought us together. Rather than confronting each other, we were running in the same direction. The orientation of the question was important and made a difference by creating a context of learning where we could all experience being led out – when you are locked in. As we mentioned above, this is relevant in relation to acknowledging ways of knowing that are different to what

is valued in conventional educational settings. In these conventional peda-gogies, the teacher often faces the pupils creating sometimes confrontational and aggressive environments. In these different ways of knowing, as Ingold and Vergunst point out, 'movement is not adjunct to knowledge, as it is in the educational theory that underwrites classroom practice' (2008: 5), but rather, the movement of running is itself a way of knowing. The prison project was an experiment in the sense not of testing a hypothesis or exactly reproducing 'the wall' but of a practice of care where the limit is a condition to make possible existentially relevant experiences, opening exploratory paths of inquiry in human life.

Deborah – All this makes me think that the ideas around exposure, letting go and correspondence, align with what Tim Ingold calls the 'minor' form of education, as set out in his work *Anthropology and/as education* (Ingold 2018). Taking inspiration from Manning (2016), Deleuze & Guattari (2004), he uses the representations of 'minor' and 'major' to distinguish between two different forms of education. Education in the major, he argues, is to be understood as a form of education that moves from point to point, joining up quantitative elements into grand and powerful statements that provide a kind of civilisation 'as-we-know-it' (Ingold 2018: 40). In contrast, his idea of a 'minor' form of education, resonates with the ideas that we have been discussing around exposure as being concerned with letting go of control, in order to feel your way forward to new beginnings (Ingold 2018: 37). For Ingold, the minor form of education is concerned with allowing things to come into presence, in their own time; through leading out, exposure and the joining *with* phenomena, rather than joining things *up* through indoctrination (Ingold 2018). In this sense, as Ingold writes, educational practices which work through exposure, afford the creation of new beginnings, and the continuation of life (Ingold 2018). Whereas, the major form of education, with its inability to let go of measurements and the controlling of outcomes, in fact, shuts down life and is actually the death of education.

As we have seen, moving downstream, like Ingold's notion of education of attention (Ingold 2018), equally leads through exposure and demands a willingness to be vulnerable and accepting of not always being in control. However, moving downstream and limiting as an educational endeavour, takes Ingold's idea of education as attention a little further along. These ideas speak of moving in an alternative direction to mainstream education, with its presumption that for thought and knowledge to be recognised, they need to conform to normative ideas regarding the recognisable and organised textual and verbal representations of thought processes, which are upheld by pedagogies created throughout education and its organisation to preserve these mainstream ways (Manning 2018). In this respect, moving downstream presents the possibility to move in a different direction than mainstream education. I think that the sort of educational approach we are developing in,

for instance, the outdoor learning courses shift away from these mainstream modes of understanding of what thought, and therefore, education is and can be. What might mainstream education afford if it could be more like moving downstream in a kayak, navigating a path of exposure?

Paolo – This is interesting also in relation to what I have seen in prison where the projects I have done challenged the mainstream rehabilitation programmes offering a different experience of the self and its values. In both experiences in the prisons of Milan and Peterhead, we have organised races within the walls of the prisons every few months so that the weekly running sessions could maintain an interest and focus. During one of the sessions, a prisoner runner told me how much he hated the walls of the prison especially while running. He suffered for not having a long view in front of him and this impacted also his way of thinking about his future. The question, 'What do I have to look forward to?' sounded meaningless inside the walls and this was exacerbated in running. Interestingly, he later confessed to me that when he was warming up for the race, he caressed the wall with his hand and was moved by it. 'Like, wow… . I don't know if it was a spiritual experience, but this wall, that had been here for so long, and I hated it, I used to hate it, when I was in there, I was crying about it. I was happy. I was happy that I'd come back. I don't understand it[10]'. The wall is a very strong limit to the habit of planning the future highlighted by the question above – what do I have to look forward to? It left the prisoner runner I quoted, and many others without any horizon and, therefore, disoriented and vulnerable, but also inexplicably wanting to come back to it.

Masschelein offers us a possible view of why one would want to come back by telling us that living without a horizon can be a way to become present despite the challenges it presents. He explains this by pointing out that it is exactly because we are captivated by the horizon of expectations, projections, and perspectives – in short, because we are constituted by our intentionality as a subject in relation to an object – that we are absent. Becoming present, on the contrary, is becoming attentive. For Masschelein this means not looking for a vision or perspective against a horizon, but 'making an opening' (Masschelein 2010b: 48).

The distinction between horizon and opening is helpful in marathon running because it clarifies the experience of the wall. The wall certainly offers an educational opening in the sense of leading the individual out of their usual way of being. By moving within the wall, runners are immersed in its viscosity questioning taken-for-granted assumptions about their own physical boundaries. They might feel them blurring and perceive themselves as becoming present thanks to the force of the current moving against them, while they head upstream. This experience is crucial because it makes runners perceive themselves differently in the sense that their boundaries are less defined, and therefore, their subjectivity seems to be affected. What happens, in fact, when those boundaries are not clear? As it has been shared among my

fellow runners in prison, the sensation of running within walls is actually one of aliveness and presence which is lived with paradoxical and simultaneously contradictory sensations of disorientation and great vitality. From my perspective, this is the educational potential of limits that I tried to clarify in my PhD (Maccagno 2019). It brings us onto the edge of experience, imagining and trusting the force or the movement of life, regardless of the form it will take. This in very practical terms, means that the individual is challenged in perceiving and valuing themselves in their sense of being alive beyond the frame of the subject. A resulting sense of disorientation and wonder emerging from acknowledging the force of the as-yet-unformed, has been evidenced in both my prison projects.

Deborah – Paolo, following what you are saying, and as I mentioned earlier, one of the central postures of kayaking downstream, is concerned with *living in the immediate consequence* of your decisions and actions. Therefore, there is complete acceptance and responsibility for the outcome of decisions made, together with what may come to pass. This posture of responsibility is a posture that is close to what educational theorist Gert Biesta terms as 'grown-up-ness' (Biesta 2022). For Biesta, grown-up-ness is not something only available to adults and unavailable to children; rather, it is a stance concerned with being in the world but without putting oneself at the centre of it (Biesta 2019a). This is realised for him, by exposing oneself to what is real and in doing so, reconciling oneself with reality through having the opportunity to stay in dialogue with what you encounter beyond yourself in the world (Biesta 2019: 91). Since moving downstream by kayak is set in and with the world and with others, as we have seen, sooner or later the world imposes limits on us; so, one is accustomed to paying attention to what the world is asking of you, and in response, corresponding with its call. Yet, as Biesta implies, many of the challenges that we are encountering, the ecological crisis and democratic crisis, are manifestations of an attitude towards the world, where we have forgotten about these limits, subsequently, we are facing catastrophic challenges in the social and natural world (Biesta 2019a). Yet, the qualities elicited from moving downstream speak of a different stance and a different way of being in the world; it is a posture positioned around clarity, care, attention, and responsibility that is shaped by moving in an alternative direction to the mainstream. This posture is not concerned with running away from the world, nor just taking what one desires from it (Biesta 2019b); rather, it is one concerned with trying to feel at home in its reality (Arendt 1994), by staying in dialogue with it and its limits.

In lieu of conclusion: What is going home?

During the 'Around the Fire' conversation, kayaker Scott Lindgren said to have felt at home in surrendering to the unknown about his health condition. He highlighted that his attitude towards his recent tumour changed when

he decided to return to the river. He let go of the hubris of controlling the disease through medicines and cures. As he was used to letting go of control in his long career as a kayaker, he now had to surrender to the flow of life. It is remarkable that this fundamental shift happened through an educational experience in the sense of leading out. Younger kayakers invited him to paddle the Indus River with them and by doing so to expose himself to something he did not know anymore. If being on dangerous rivers was a constant practice for him some time ago, it was not like this more recently. He had to rediscover his home on rivers after he had stopped paddling because of his health condition. These younger fellows did not tell him what he was doing wrong but helped him to 'breath through the barriers' (as Scott told us) by leading him out to the edge of the river and letting him follow them while he was regaining his trust in the water and, more generally, with life. They actually trusted him so that he could regain his trust. This generated an opening and Scott felt at home.

Good research might open good questions which do not contain their own answers from the start. In all our conversations and experiences together, we (the authors) have been asking ourselves, 'What does it mean to go home'? This question emerged along the way. We found it and since then, we have been exploring it through running and kayaking. We allow the question to remain unanswered, emancipating ourselves from the need for the answer. From the perspective of the limit, the notion of home is contradicted by the expectations one might have about it. From this point of view, in fact, home is not the familiar or secure as we generally understand it. It is not about rest in the sense of becoming passive and absent. Instead, it is about being alert and ready in the realisation of being exactly in the middle of the flow of life, right where each individual feels their place to be. This offers a new potential insight into the dwelling perspective which has been discussed by Ingold in different ways (see Ingold 2005, 2011).

Our work has focused on leading groups of people (often vulnerable) in marginal (prison) and remote (wild rivers) places through practices at the limit, where body and movement are the core of the experience and a source of knowledge. Indeed, the experience of the limit takes the individual into unfamiliar territory where movement and imagination have to be recognised as different forms of knowledge in their own right. The practices of the limit that we propose, inspire a sense of self beyond the boundary of subjectivity and identity revealing instead one's own presence and aliveness at the cusp of life. In our understanding, these liminal contexts have a high educational potential, affording the individual to become exposed and vulnerable, yet at the same time offering the possibility to move forward through a new sense of life. Rather than a method, this is a way of working grounded in practices which afford other ways of perceiving the world and therefore change what we can know. The kind of knowledge it provides does not foster reason but responsibility. It is a way to bring people and generations together to imagine the future.

We would like to suggest that moving upstream (like marathon running) and downstream (like kayaking) can be a way of countering mainstream ways of education and research by setting up a context of learning where the individual faces the limit, becomes vulnerable and can open up to difference and other ways of being in the world.

Notes

1 Philo, Superior School of Philosophical Practices, www.scuolaphilo.it/
2 See Ingold and Vergunst's Introduction to Ways of walking (2008), for expanding on how practices involving postures avoiding direct face to face confrontation (eg. walking) can open up educational experiences enabling knowledge by moving in the same direction. On similar topics Sophie Elixhauser explains in her book *Negotiating Personal Autonomy* (2018), how, for the people of East Greenland, looking someone in the eye is a very socially loaded experience which sometimes can be challenging and therefore detrimental to knowledge sharing.
3 Prof. Tim Ingold has been the PhD supervisor of both authors.
4 White-water rivers are classed from I to VI in terms of their difficulty to navigate, with I being the easiest and VI regarded as largely un-runnable. White-water kayaking up to Class III can be seen as a recreational activity, much like piste-skiing, with the passage in a rapid open and clearly visible. Paddling Class IV and beyond is a skilled-practice and requires a combination of sophisticated paddling skills and diverse knowledge of the river and mountain environments, in order to navigate numerous obstacles in the rapid.
5 To this study, I dedicated a monograph *Lungo lento. Maratona e pratica del limite* (2015a).
6 In my PhD, *Through these walls. Steps to an anthropology of the limit* (2019), I have suggested that these contradictory messages set up a kind of double bind (Bateson 1987: 205). As Bateson pointed out, double binds are ambivalent and ambiguous: they can cause schizophrenia, but they also have great potential for pushing towards creativity and learning (282).
7 The river's bed will determine the river's characteristic; besides the volume of water it can carry, these two dimensions ultimately determine a river's white-water characteristics. Large volume rivers are generally large in volume and moderate in gradient loss.
8 Runforever is a Scottish Charity promoting educational projects (based on marathon running and the Feldenkrais method®) fostering paths for humanising health care within prison environment and the community founded by Paolo Maccagno – www.runforever.org.uk/
9 As an anthropologist I am aware that both the experience of prison and indeed of the self can be very different. For example, Adam Reed (2004) gives a different account and signification of walls and of the relationships between people in a maximum-security jail in Papua New Guinea by showing the creative as well as negative outcomes of detention, separation and loss.
10 Words noted in my fieldnotes after a conversation with a prisoner at Peterhead prison – Scotland (2016).

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Afterword

Erin Manning

Footprints are individual; paths are social

(Ingold 2015: 63)

In the world of aquatic creatures, a distinction is made between a shoal and a school. When they swim in a loose cluster, they are shoaling. This is considered a social momentum – 'any group of fish that stay together for social reasons are shoaling' (Wikipedia). In this kind of movement, they are not species-specific. But when the species converges on itself and moves in synchrony, they become a school. Now they move as one, their twists, turns and sweeping movements a choreography of univocity. You might think difference is reduced in this collective movement. This is not the case. In the movement of the whole what is danced in synchrony is the movement itself. That is to say, in the movement of the whole, the school has new potentials. They can confuse predators. They can multiply their energies by using the slipstreams of other fish. The coordination amplifies difference, multiplying pathways. But that's not *because* they are a school. It's because the sociality of the shoal is with and through them, in their incipient movement. They've shoaled their way into schooling, the pathways of schoaling traversing the

school-potential. To school is to shoal as one, sociality become immanent collectivity.

This is a book of paths, a book that reverberates with the movements a shoal of thought can provoke when it schools. In the schooling, its univocity is not of the 'one' of the 'individual." Its univocity is of the more-than of the one, shoaling always: 'the many become one and is increased by one' (Whitehead 1978: 21).

To school – always at the pace of more than any one orientation, on pathways in palimpsest – is the gift of Tim Ingold's thought. This is felt in this volume as care for the movements themselves, the life-ways a thinking in the act potentialises. To produce such a pedagogical opening is rare, and to facilitate, in that opening, a commitment to all the ways in which thought differs from itself – the slipstream, not the military formation – is even rarer. Techniques for generating the force of thought – not its form – must be well-honed. This is a book of techniques.

Tim Ingold's (2018) *Anthropology And/As Education* is perhaps the most direct engagement with pedagogy in his oeuvre. Following on the many pathways of his earlier work, *And/As* is the book that most stridently asks the question of how teaching and learning happen. I call it *And/As* because I see it as the book of the milieu, the book that in-betweens thought, exploring, with the stakes high, whether there still can be a university as a site of learning, and if so, what that site would have to forego and champion.

The path is a central motif throughout Ingold's work. Tethered to a Gibsonian account of perception, the pathway early on becomes a texture of perception, a mode of knowing in the moving.

> And yet they also arise out of that movement, for every path or track shows up as the accumulated imprint of countless journeys that people have made – with or without their vehicles or domestic animals – as they have gone about their everyday business. Thus the same movement is embodied, on the side of the people, in their 'muscular consciousness', and on the side of the landscape, in its network of paths and tracks. In this network is sedimented the activity of an entire community, over many generations. It is the taskscape made visible.
>
> (Ingold 2000: 204)

The path is a knowing in the act, the knowing embodied in the movements it solicits. Or, simply, the path is the movement of thought.

The movement of thought is immanent to the paths it produces, and which produce it. Thinking cannot be severed from this movement, cannot be reduced to an individual. 'I' don't think – the movement thinks me. '[W]alking is itself a habit of thinking. This thinking is not however an inside-the-head, cognitive operation but the work of a mind that, in its deliberations, freely mingles with the body and the world. Or to put it another way, I do not so much think while walking as think in walking' (Ingold 2018: 23). *And/As*

is on the path, in the walking. In this middling, it resituates anthropology, moving it from the site of fieldwork to the classroom. Or better said, it opens the classroom to the world, reminding us that a classroom can only be a confluence of pathways.

In the sociality of the schoal, *And/As* proposes inflections, not end-points. It takes a stand, as it should, on the dead-end of thought-as-content and the ways our contemporary sites of teaching and learning are deoxygenated by the requirements to deliver products over processes. It makes a case for anthropology not as a discipline but as a mode of existence – 'educational in its very constitution' – as an environment of creative transformation (Ingold 2018: viii). Education here becomes a 'leading out', a movement beyond the walls of the institution into a worlding that paths. A movement-toward, a withness of thought in the wayfinding. The finding here is not an endgame, but a certain locating, a locality that contours. To move with thought, in the movement of thought, is to have a regard for how paths diverge, how they texture and layer, each time in a singular way. It is to write-with the detail of a rigorous engagement with how the world emerges for thought, and how thought becomes world.

Alongside John Dewey, Ingold commits to a certain indirectness of education. In the mode of the free indirect, a sideways reverberation that pulses existence, education is not what is learned by heart. Education does not happen in the frontal onslaught of mimicking knowledge. Pedagogy is in the accompaniment, in the encounter with ecologies of practice. We learn to learn. How the learning moves us is the real spirit of education. A teacher who isn't alongside, in the encounter, who isn't detoured by the free indirect of thought in the act, is not learning, and without learning there is no pedagogy.

To learn to learn is to practice techniques for practice. On the path, problems catch up with us. '[T]he pathfinder not only collects but *accepts* what the world has to offer' (Ingold 2018: 71). Acceptance shifts the rhythm. What, by way of practice, can be made, thought, felt, given the conditions at hand? What are the velocities of encounter? Can they be modulated? 'Real problems…always exceed their solutions and are never dissolved by them' (Ingold 2018: 74). I have written about false problems (Manning 2016). False problems, a term from Henri Bergson, refer to those problems that already carry their own solutions. The institutions in which we do our work are rife with them. A real problem is a problem that 'must be given time' (Deleuze 1989: 24). From *The Minor Gesture*: 'False problems are of two sorts, 'nonexistent problems,' defined as problems whose very terms contain a confusion of the 'more' and the 'less'; and 'badly stated' questions, so defined because their terms represent badly analyzed composites' (Deleuze 2007: 17). 'False problems … bring us up against "an illusion that carries us along, or in which we are immersed, inseparable from our condition" (Deleuze 2007: 20). False problems and badly stated questions maintain the status quo'. (10).

The logic of and/as is one of mutual inclusion (Massumi 2014). Its modality is one of 'approximation of proximity' (Manning 2020). And/as refuses cause

and effect, and is not interested in easy solutions. The sociality of the shoal is what carries it, an alongsideness that, in an etymological detour, sounds like sym*path*y. Because to path is to be in an attunement to how paths converge, how they produce ways that lead to dead-ends, how those dead-ends open up onto new ways of living the transversality of the ecologies of practice.

Sympathy appears almost as often in Ingold's work as do paths, itself a path of the and/as. In a refusal of the concept of assemblage as that which 'gets' assembled, sympathy aims in Ingold's work to do the work of tending to the event of a wayfaring without internal-external binary. Worlds are sym*path*etically in the making. On The path is not reducible to 'following' a path. On a path is as much making it as being made by it, as much being moved as moving it into the potential for re-followability. Because to refollow is to find knowing making itself 'in the musculature'. The path is not a line on a landscape. It is a landscape that sympathises in the moving with a world making itself.

This might sound vague, or even worse, metaphorical. It is neither. Yesterday, on the 3Ecologies land (3ecologies.org), I took my snowshoes and walked out to meet my neighbour. Recently retired from the Ministry of Forestry and Fauna, he is deeply familiar with the forest that surrounds us – some of it private, most of it public – attuned to the age of the different cuts and their effects on fauna. Quebec remains an extractive environment when it comes to forests, the cut happening every 30 years or so. We have little to no control over what happens on public land, which is to say, settler-colonial land.

I find the trail easily. His instruction: 'Take the path after the bridge'. With a meter of snow, it's not difficult to find the compacted snow after the bridge and to follow it. The pink ribbons interspersed on trees along the way are an added reminder to stay on the path, to mitigate the destruction of the complex ecosystems. What he teaches me, as we walk the path together and as we make new ones, is to notice where the sun comes in through the trees, to see where clearings emerge, to notice what made these openings possible, to see where the branches are too high for the wildlife to forage during the winter, and where monocultures are seeding themselves. He tells me that, during his studies, he had a teacher who taught them to create circling and deviating paths in the forest. These paths might involve some minimal cuts that would allow the sun to enter into the dense forest. This would foster growth without creating monocultures (the dreaded poplar, the softest of the hardwoods in our forests, neither majestic nor good for burning or building). In addition, it would prevent producing hard lines on the land, borders of the cut/uncut. The drifting paths would entangle sun and shade, cut and old-growth, refusing overview. The forest without overview is a forest of textures that path.

As we make new paths, we encounter new clearings, and we amplify them. At the foot of a very large white pine, left in the several culls perhaps because they are now almost extinct in our forests, we make a fire. He shows me how

to build a fire pit in the snow, and how to keep a fire under control in this dense forested environment. We bring dead wood to the firepit in our path-making. The other small wood we gather we use to build small shelters for the animals, covering them with cedar branches.

In the clearings, we don't cut trees, but we do bend them, curving the supple thin birches toward the earth to make large arches. My neighbour's proposition: bring the food closer to the foragers, yes, but also, build a dome, an archway that will continue to grow as the trees mature. The rabbits can climb them, the grouse can mate on them, but maybe, in the best possible world, you've also created an artful structure that lives on, the forest making itself otherwise. A co-composed ecosystem as aesthetic as it is pragmatic.

These airy arches, these sunny deviations act as a certain lure for the crossing of paths in the overlap of differing modes of existence. The lure is also play. Because snowshoeing on the paths, marking the trees with pink ribbons, hanging off young trees to bend them, laughing as we fall into the thick snow, what we are doing, in a very real way, is thoroughly useless. My neighbour doesn't know I wrote a book with useless in the title (Manning 2020). He doesn't theorise play. He just knows, in the mode of and/as – that this is living.

When practice and problem meet, as Ingold emphasises, the questions that emerge are as pragmatic as they are speculative. A site of inquiry is crafted in the interstice, mobilisations of its field effects its uncertain outcome. This is a roundabout way of saying that there is no assumed dramaturgy of entry. Ingold insists:

> Research is as much about the discovery of questions *in* practice as about the answering of them *by way of* practice, and the former continually overflows the latter. In short, *real* research is neither practice-led nor problem-oriented, in the sense that the practice or problem is the initiator from which everything follows; rather practices and problems engender one another, as chicken and egg, in the educational process of leading life.
>
> (2018: 74)

The next day, the contours of the path will have changed. The new snow will make our tracks harder to see. Not even those pink ribbons will be enough to keep us on the right path – we can't quite be sure if we walked to the right or the left of the tree. Disoriented we will end up at a different rock, a different junction, a new clearing. After all, forests are extremely difficult to navigate. As my neighbour tells me, we tend to walk in circles because we have an innate preference for moving to the right or the left of any given tree. Strange how our musculature deceives us.

Paths are not *the* way. They are nothing more than ways. Artful in their aesthetic yield, they foster a certain opening to the problem, but from there,

all the details of the approximation of proximity have to be attuned to every time anew. And/as is a pragmatics of the useless, a commitment to not knowing in advance the value of the world that makes and unmakes us.

Rare is a teacher who can orient *and* remain in the middling, who can trace a path, share it, get disoriented and participate in the school that its drift produces.

Ingold's project of anthropology and/as education is at once a refusal of a certain mode of learning and a celebration of another. The university still stands in Ingold's account but without its commitment to false problems and without the hard walls that keep it from being inflected by the problems it germinates. In the practising at the crossing where practice orients, education can be redeemed, Ingold suggests. But it needs to be a process of leading out, of life-leading: 'The university must be restored to education' (2018: 78).

In the and/as of Ingold's proposition to education, the university stands as a site that he believes can still carry this work: 'No purpose is more important, and no institution, apart from the university, currently exists with the capacity to undertake it' (2018: 78). It's hard to say what the university is when it is the sympathy of paths interweaving that is foregrounded. In the spirit of the and/as, I suspect it is something like this book, an interweaving of ambient thoughts moving toward socialities in the making. A site of non-resolve that is rich with study. A commitment to carrying thought in the drift, of collectively moving with it.

I think, here, of the beautiful annotations I've read as I have received the chapters in the early stages, the care with which the writing was studied and marked up. The questions in the margins are what have most stayed with me – the proposals to clarify or diverge a thought, the enthusiasm and the uneasiness. This thinking-in-the-shoal is rarely foregrounded and, because often territorial, is mostly dreaded. But here, it takes on a different form, I think: one of care for the slipstream of the emergent collectivity of thought.

This gift of thinking within the alongsideness of a practice always yet underway is what this book leaves us with. We are given not only various modalities for coming into contact with research practices that open the way for new ways of thinking; we are introduced to the force of the pedagogical itself, which is to say, to the ways in which pedagogy does its work through but also in excess of any one teacher or thinker. What these essays make felt is that thought is still germinating, that what has been seeded in the and/as is very much still at work, including in Ingold's work itself.

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