

Tree Knowing: Ethnographic Encounters, Sensuous Scholarship,  
Relational Ontologies, and Environmental Empathy

by

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A Dissertation by Portfolio Submitted  
to the College of Interdisciplinary Studies  
in Partial Fulfilment of the Requirements for the Degree of

DOCTOR OF SOCIAL SCIENCES

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Victoria, British Columbia, Canada

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June, 2021

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## COMMITTEE APPROVAL

The members of Sarah Abbott's Dissertation Committee certify that they have read and reviewed the dissertation titled *Tree Knowing: Ethnographic Encounters, Sensuous Scholarship, Relational Ontologies, and Environmental Empathy* and recommend that it be accepted as fulfilling the dissertation by portfolio requirements for the Degree of Doctor of Social Sciences:

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Final approval and acceptance of this dissertation is contingent upon the candidate's submission of the final copy of the dissertation to Royal Roads University. The dissertation supervisor confirms to have read this dissertation and recommends that it be accepted as fulfilling the dissertation requirements:

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*To the trees who suggested this research,  
and to my loving soulmate, Mané Raj.*

### **Dissertation Abstract**

Research for my interdisciplinary Doctorate of Social Sciences focused on the sentient intelligence of trees as agentic, conscious entities with unique ontologies, perspectives and life-ways, alive in ongoing relational inter-response and action with their communities. Qualitative inquiries and considerations were informed by ontological emergence theory, Indigenous epistemologies and research methodologies, and public ethnography entangled with plant science, philosophies from the recent ontological and nonhuman turns—with a particular focus on plants—interspecies communication, and ethnographic film production. The overarching research questions consider how tree ontologies can be (re)presented through ethnographic inquiry, and what ethnography with trees reveals about humanity. Components of the dissertation portfolio include one journal article, two book chapters, and a Synthesis Paper that imparts the research context, frameworks, approaches, findings and discussions, and outlines the rationale and conceptual links of the dissertation contents. The dominant trajectory within the dissertation is ethnographic, sensual, relational and filmic research processes and knowledge-making between trees and humans, including tree-human communication methods and findings. As a fluid, emergent, entangled, diffractive bundle, the guiding collection of methods, methodologies, and theory for this research supports and reveals findings that offer and advocate for (re)newed ways of being and collaboration with the intelligent aliveness of trees and other nonhumans that move away from limitations and fragmentations within modern anthropocentric perspectives and behaviour informed by Western paradigms and toward increased empathy and holistic, reciprocal relations with trees and nonhumans.

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### **Acknowledgements**

The energy and depth of my gratitude to all trees, nonhumans, and humans who interconnected with my doctoral research can hardly be captured with words. Beginning what would be over seven years of expansive, transformative study at Royal Roads University was a fantastic life decision. The support, encouragement, inspiration, excitement, patience, and contributions of so many people and trees I knew before I began this journey and who I met along the way helped keep me buoyed, able, steady, and dedicated. My thanks is lifelong.

To the trees who suggested my doctoral topic: I am humble in profound thanks for your connecting with and trusting me for this important work. The honour of accepting this research subject, working in service with and on your behalf, meant I had to complete this degree not only for myself, but for you and the health and joy of our planet. It has been a paradigm-shifting joy and privilege to collaborate with you, to feel your supportive presence throughout the journey.

To the land and water I visited, live, and work on: I am indebted to the infinite ways you support all life on Earth, and I strive to continually deepen my connection with you. During my two residency periods at Royal Roads University (RRU), it was a gift to stay, attend classes, and study on the lush, verdant shores of Esquimalt Lagoon on Vancouver Island, the traditional lands for thousands of years of the Xweseptsum (Esquimalt) and Lkwungen (Songhees) ancestors and families. As a visitor, I remained connected to these lands throughout my doctoral journey and look forward to returning as an alumna. Much of my home-based doctoral course and dissertation work took place on Treaty 4 territory in Saskatchewan. This prairie land is the long-time home of the Nêhiyawak (Cree), Anihšīnāpēk (Saulteaux), Lakota, Dakota, Nakoda, and, later, Métis/Mitchif nations. I am also lovingly grateful to have spent my formative years in

kindred romping with land, water, trees and nonhumans on unceded Native territory in southwestern Quebec, as well as the mountains and prairie in Treaty 5 territory, Alberta.

To my doctoral Supervisor, Dr. Phillip Vannini, Professor and Canada Research Chair in Innovative Learning and Public Ethnography in the Schools of Communication and Culture and Interdisciplinary Studies at Royal Roads University: my sincere gratitude for readily accepting me into your busy academic life as a student new to ethnographic practice. Your pragmatic guidance indicated next steps when I felt lost and overwhelmed, your supportive feedback on my work energized me to keep going, and your extensive writing and editing experience honed my academic writing. I thoroughly enjoyed co-authoring our three book chapters on public ethnography and ethnographic filmmaking. The opportunity to write my first solo chapter, “Filming with nonhumans,” for your Routledge handbook on ethnographic filmmaking enabled me to sit deeply with and begin to really see the fruits of my doctoral research. Thank you for these invitations and the research assistance work you offered me during the early years of my degree, for both the financial support and the content of the work, which I continue to draw from.

One of the wonderful features of the RRU Doctor of Social Sciences (DSocSci) program is the opportunity for students to invite academics from anywhere in the world to participate as members of their Dissertation Supervisory Committee. I took full advantage of this and invited four scholars with a broad range of expertise that complimented and enriched my interdisciplinary research. I have deeply appreciated this occasion to get to know you a little and to learn from you and your academic work. Thank you for all of your support, time, and rigorous engagement with my dissertation work.

To Dr. Michael Marder, Ikerbasque Research Professor of Philosophy at the University of the Basque Country, Spain, working in the fields of environmental philosophy and ecological thought, political theory, phenomenology, and critical plant studies: thrilled thanks for saying yes to this stranger who reached through the internet with an invitation inspired with excited admiration for your advocacy and beautiful writing on ontological and ethical considerations of the aliveness of plants. Thank you for your supportive presence and offering to review “Filming with nonhumans” before it was decided this chapter would be included in my dissertation package. Your insightful notes widened my view of my research.

To Dr. Gísli Pálsson, Professor Emeritus, Department of Anthropology, University of Iceland, working with human and nonhuman relations in the contexts of, among others, social, cultural, biological and cognitive anthropology, environmentalism, the Anthropocene, and ethnography: your warm, gracious support in emails, online chats and forwarded articles were always so appreciated. It has been an honour to connect with you during these later years of your impressive career. My heartfelt thanks to you for saying yes to an invitation from a stranger inspired by your conceptualizing of “biosocial becoming” with Tim Ingold.

To Dr. Siomonn Pulla, Associate Professor in the School of Interdisciplinary Studies at Royal Roads University, working from an anthropological base in participatory and collaborative research, corporate-Indigenous relations, histories of Indigenous-settler relations in the Commonwealth, Métis political resurgence and representation in Canada, and visioning interdisciplinary doctoral education: your open enthusiasm when I shared my research topic, “an ethnography of trees,” for the first time eased my pursuit of it amidst the “shock and awe” that emerged among faculty, students, and staff. I am deeply grateful for our periodic long talks.

Your always hearty questioning, trenchant and encouraging considerations of my work left me intellectually stretched and more aware of relationality in my research.

To Dr. Naomi Scheman, Professor Emerita of Philosophy and Gender, Women, and Sexuality Studies, College of Liberal Arts, University of Minnesota, working in the areas of politics of epistemology, feminist theory, trustworthiness and community engagement, responsibility in research, queer/sexuality and transgender studies, and non-anthropocentric relational ontologies: I am delightedly thankful for our chance meeting at the Canadian Society for Women in Philosophy conference, *Challenging Ontologies: Making Sense in Ethics, Science, Politics, and Art*, held at the University of Regina in 2015, which led to your accompanying me on this doctoral journey. Thank you for always energising and extending my mental capacities with the breadth and angles of your incisive thinking, while remaining open, fascinated and “somewhat skeptical” of my research. Our time in Sweden to each present at the *Keeping it Honest: Vulnerable Writing* conference at Uppsala University was a highlight of 2019. I will never forget our enchanted exploration of the university’s history at the Gustavianum, taking turns lying on the old dissection table in the astonishingly steep anatomical theatre built in 1662! Thank you, too, for your offer and helpful insights in support of “Filmmaking with Nonhumans.”

To the External Examiner of my dissertation, Dr. Naimh Moore, Senior Lecturer at the School of Social and Political Science, University of Edinburgh, Scotland, working in the areas of feminist theory and research, ecofeminism, sustainability, ethics and research practices, queer theory, and interdisciplinary research (to name a few) toward a central focus on “re-visioning” an eco/feminist politics of sustainability via a holistic approach linking environmental sustainability with human and non-human health, well-being, and research praxis: my heartfelt thanks for your

time, meticulous consideration, and astute comments, questions and suggestions on my dissertation components that will expand my continued research in this field.

Completion of my doctoral degree marks 14 years of academic study, beginning with my undergraduate degree in Film Studies and Drama from Queen's University. Thank you to the faculty, staff, and fellow students who were with me for that chapter of my life, in particular Dr. Blaine Allan, Dr. Peter Baxter, Dr. Frank Burke, Professor Clarke Mackey, and instructor Derek Redmond for all the knowledge of filmmaking, literacy and criticism you instilled in me. At Syracuse University, home of my Master of Fine Arts degree in Media Arts, Tom Sherman and John Orentlicher co-supervised my MFA thesis film. Thank you so very much for all your support of my work and recommendation for a Syracuse University All-University Fellowship, an amazing three-year financial and teaching experience opportunity. My MFA journey dramatically enriched my self-awareness, capacities as a filmmaker, knowledge of the world, and career trajectory. Great thanks to all the faculty, staff, and fellow students who contributed to my life and learning during this time, in particular (now Dr.) Thabo Mabogoane for your ongoing support and deep friendship. To Shirley Gunn, Brian Mphahlele, Colin de Souza, Maureen Mazibuko, and Tryone Savage, Khulumani Support Group, and the Human Rights Media Centre in Cape Town: infinite thanks for welcoming me into your lives and apartheid histories that led to my MFA thesis film, *Tide Marks*, and educated me on racialized oppression.

During my time at RRU, I was always struck by the kindness, generosity, and good spirits of the faculty, librarians, and staff I connected with. I am very grateful to the professors who guided our intense coursework foray into theory, qualitative and quantitative research with depth, breadth and helpful advice: Dr. Brian Belcher, Dr. Bill Durodie, Dr. Siomonn Pulla, Dr.

Jacqueline Quinless, and Dr. Marilyn Taylor. Thank you to the administration staff who oversaw details pertaining to the DSocSci program and my dissertation progress, in particular Dr. Mathew Heinz as both Dean and Vice-Provost of the College of Interdisciplinary Studies; College Manager Carole Sandhu; and Janine Hughes, Theses and Dissertations Manager. It was always a joy to connect with the DSocSci Program Heads over the seven years, Dr. Bernard Schissel, Dr. Siomonn Pulla, and Dr. Mary Bernard, chronologically. Mary, I have so appreciated our warm talks since the beginning and your enthusiastic support for my work. Sincere thanks for your amiable greetings, information sharing and assistance: Asma-na-hi Antoine, Gina Armellino, Tim Brigham, Dr. Allan Cahoon, Elder Ken Elliott, Jonathan Faerber, Colleen Hopkins, Dr. Richard Kool, Dr. Hilary Leighton, Will Meredith, and Dr. Wendy Rowe.

The coursework period of the DSocSci program, particularly the two three-week residency sessions, was mind-numbingly intense. Thank you to the 2014 cohort for your intellectual, mental, and emotional support, for enriching me and my work with your own research, ideas, and friendship: Bolu Adewale, Vince Eagan, Gehane Elsharkawy, Rob Friberg, Fiona Friesen, Eva Jewell, Ricardo Manmohan, Graeme Mitchell, John Pumphrey, Kathy Tarnai-Lokhorst, Janna Wentzell, Patricia Whelan, and Richard Wamimbi.

Just before my official start in the DSocSci program, I had the incredible good fortune to be selected for nomination by RRU for a Vanier Canada Graduate Scholarship (CGS). A profound thank you for this. For the massive application, I received writing assistance from the Office of Research Services. To Gwen Hill, Vanessa Rogers, and Deborah Zornes: tremendous gratitude and fond memories for your extensive, generous, and meticulous support over our two months of sharing notes and revisions. It was so special that March morning when

you all gathered around the telephone to call me with the remarkable news that our application had been successful. It is a true honour to be RRU's first Vanier Scholar. Big thanks Gwen Campden for overseeing application practicalities and three years of cheque administration.

To the Government of Canada for the Vanier CGS: infinite gratitude for this tremendous, prestigious award that significantly contributed to my doctoral studies and academic career, recognized my work, and offset my tuition, living, fieldwork, travel, and filmmaking expenses.

Lastly in connection with RRU, great thanks to Dwayne Beaver for introducing me to public ethnography, Dr. Phillip Vannini, and the DSocSci program during your surprise filmmaker visit to the University of Regina; and to the writers of the letters of recommendation in support of my applications to the DSocSci program and the Vanier CGS: Dr. Sheila Petty, Dr. Carol Schick, Tom Sherman, and Dr. Phillip Vannini.

Sincere thanks to my colleagues in the Faculty of Media, Art, and Production (MAP) at the University of Regina for your support, particularly while I was on education leave or working at reduced appointment. In the Department of Film: Ian Campbell, Dr. Philippe Mather, Dr. Sheila Petty, Dr. Christine Ramsay, Mike Rollo, Gerald Saul, Brian Stockton, Dr. Christina Stojanova, and Mark Wihak. Thank you very much to Film department staff Roland Bourgeois, Joe Caron, Mike Garcia, and Andrea Stachowich for your practical and technical supports. Cheers from my students for my doctoral work always warmed my heart. Thank you to Frank Montes and Colin Tether at the University of Regina Faculty Association for your assistance with understanding and negotiating terms related to my leaves. The initial and ongoing support of the two MAP Deans just prior to and during the time of my degree, Dr. Sheila Petty and Rae

Staseson, was crucial to maintaining my full-time teaching appointment while pursuing my doctoral studies. I am forever grateful to you.

I am lovingly indebted to the many humans who contributed to my research through formal interviews, informal conversations, teaching and participating in workshops, and attending the public and academic talks I gave on my research. Your sharing of personal experiences is the heart of the big picture that emerged of trees' sentient intelligence, relations, and communication with humans in my research. To the formal participants who shared generously about your expertise and knowledge of trees and plants, our unique time together was precious and lives constantly in my spirit: Basia Alexander, Dr. Dante Bolcato, Dr. Paco Calvo, Dr. Kléber Rivas Carrion, Al Cool, Dr. Jim Conroy, Mare Cromwell, Michael Dunning, Mary Getten, Paul Greenwood, Eric Horstman, Elders Galo Juank and Emma Kuji Tsukanka, Devmurti Khalsa, Henning Larsen, Judy McAllister, Susan McCrone, Daniel Murphy, Dr. David Sauchyn, Ryan Semelofske, Elder Doreen Spence, and Dr. Anthony Trewavas. There were many informal conversations and experiences that bolstered my research; particular heartfelt thanks to Mike Gardner, Kari Lesick, Victor Antonio Macas, Aura Lee MacPherson, Dr. Stefano Mancuso, Dr. Rollin McCraty, (almost Dr.) Alice McSherry, Dr. Natasha Myers, Elisa Novick, Elyse Pomeranz, Gizelle Rhyon-Berry, Kurt Ryder, Sylvie Oliva, and the Visual Arts students (2018) in the *Plants in Contemporary Art: Uses, Reflection and Interpretation* class taught by Zachari Logan at the University of Regina.

I am deeply indebted to the countless scholars and authors whose work informed my literature review and understanding for my research processes and outcomes. I am eternally grateful to the many Indigenous people, Elders, allies, and accomplices who have broadened my

awareness of Indigenous ways of knowing and being in the world, historic and present-day impacts of colonialism and racism, and the urgent need for continual, systemic, (re)conciliatory efforts toward decolonization.

As with any large project, there were numerous practical aspects of my research for which I received assistance from many people. Deep gratitude to everyone who supported me and my research during and for accommodation and travel, my “tree talks,” film production and technical considerations, interview transcriptions, location permissions, Spanish-English translation, publishing, networking, knowledge-building, and additional financing. Particular thanks: Isabella Aguilera, Leoncio Armijos Gonzales, Luis Almeida, Iuliia Andreichuk, Dr. MJ Barrett, Dr. Jarol Boan, Richard Boyce, María Alejandra Castilla Bolaños, Yvonne Chartrand, Cathy Lee Crane, Daniel Cross, David Crow, Dan Davies, Evgenia Emets, Teresa Fernandez, the Findhorn Foundation, Susan Gash, Patrick and Patricia Hancock, Maryann Hegel-Dornemann, Wayne Jacquith, Scott Kadash, Hari Amrit Khalsa, Simon Lloyd, Dr. Richard Lunniss, Noah MacHenry Gehman, Paul Moss, Robin Poitras, Dr. Richard Povall, Erin Quinn and Randy Smyth, Dave Rawson, Ryan Semelofske, Daniel Spoerri, George Stewart, Charles and Anita Stapleton, Karen Teran, Inês Valle, Dr. Maria Velez Caicedo, Demian Varela, Matt Yim, Maggy Zerr, David Zoob; Melinda Oberkisch and Don's Photo; Lazáro Chilañ Castañeda Nicolas, Rocio Loor Bolcato, and everyone at El Artesan; Pete Peterson and Genesis Farm; Trevor Bennett, Kristine Dowler, Randy Shumay, and Jack Tunnicliffe at Java Post-Production; the artists and support team at the Workshop on Art, Nature, and Technology (WANT 2016).

A huge sigh of relief and appreciation to Kyath Battie, Gordon Pepper, Beatriz Rojo, my mother Sally Ramsey, and Pamela Warden for taking good care of Mané during my residency

and fieldwork travels. Many thanks for support from the Prairie Adaptation Research Collaborative at the University of Regina, and the anonymous donations to my research project and film, including a donation in memory of my grandparents, Jean and Jack Ramsey.

There were two unforgettable stranger angels whose rescues were nothing short of miraculous. In Scotland, David O'Brien, Policy and Advice Manager at Scottish Natural Heritage, you appeared out of nowhere and offered to help with my disoriented, exhausted self and very heavy large bag at the train station in Inverness and up those many flights of spiralling stairs after our arrival in Edinburgh. In London, Tony the engineer travelling home to Mallorca from Ireland, you kept me steady after the shock of realising I had left my 30-pound backpack filled with camera gear, hard drives, and my laptop on the Jubilee subway line, which has a reputation for terrorist baggage. With great calm and assurance, you guided me to find it at the next station, sitting at the feet of a subway attendant, who I immediately embraced with joy and relief. You then paid for a taxi and accompanied me to the London City Airport before doubling back to visit a friend. I still have the two-dollar Singaporean note you gave me for good luck.

Mental, emotional and intellectual support from friends and family is the glue and balm that keeps a project thriving. Deepest thanks: Joyce Bethune; Nicole Bouvier, my fairy godmother and founder of "le Club Cinglé;" Dr. Claire Carter; Jean Crume, my long-distance roommate in Arkansas; Chris Gehman; Reiki master Jule Gilchrist; Shelly Hannah; Sue Haycroft; Rachel MacHenry; Bruce MacKay; Midi Onedera; Karin Stellwagen; Gail Tiefenbach; Darca Tkach; and Kivil Woodward. Dr. Simon Leadbeater, huge gratitude to the universe for connecting us as fast friends, co-authors, and stalwart messengers of tree sentience.

To my sister, Peig Abbott: your constant, heartfelt enthusiasm and knowing appreciation for my work with trees has been deeply and gratefully received. Enormously warm, loving thanks for being there during the highs and lows, and for your family support. To my Uncle Roger Abbott, an adored part of my life, always loving and excitedly inquiring as to the status of my research. To my mother Sally Ramsey, step-mother Alison Abbott, and cousins Peter Abbott and Mong Hoa Tran: hearty thanks for checking in on my work. Cousins Roland and Elizabeth (Mimi) Beaulieu, thank you for our warm times and meals together when I was in Victoria.

I am eternally grateful for the feline companionship of Mané Raj (2006-2017), my study buddy who left for the spirit world far too soon—I send you all my love for the support you continue to give—and of Anuwan (Anu) and Wren, ninja siblings who now keep me in laughter, love, and sweetness.

Three especially loud and enthusiastically cheering people were always at the ready to keep me grounded, confident, and committed. To my Aunt Jane Cunningham: deep thanks for your unwavering faith that I could make it through the coursework and for opening your home to me for ten days of fieldwork, giving me physical, mental and emotional space to spread out and focus on my work. Our talks through the years have been a deeply valued part of my life.

To Cheryl Jack: it is tough to find words to say how much I have loved and appreciated the “island time” of our weekly phone calls and laughter these many years. Your steady support and smart insights have nourished and encouraged me. I have never heard anyone holler with such happiness and zeal as when I shared the major milestones of my dissertation work with you.

To my Father, Ted Abbott: our friendship means the world to me. Thank you for always being there to hear of my successes and challenges, to listen and thoughtfully respond, and to get

me out of bed with early morning wake-up calls during the pressures of doctoral timelines. Your openness to change and new ideas, pride in my achievements, inquisitive interest in my work and life, great sense of humour and of your own humanity, and beautiful, loving notes constantly warm my heart.

For over five years, I had the extreme good fortune to connect with an RRU counsellor, another of my doctorate angels. Over these years, she supported me with acute perception, wise compassion, enthusiasm for self-care and life balance, steady guidance, deep listening and care, openness to spirit and tree knowing, and consistent presence that gave me solace, insight, acceptance, joy, and hope, and steered me through some very dark days when the energies of life-changing doctoral work pitched the comforts of my existence into a year-long turmoil.

Gemma Fraser: you have been a life-line. It has been a gift to share my life with you.

Lastly, I would like to thank myself. I have realised that we humans, perhaps especially in the West, do not take enough time to fully acknowledge our own presence and meaningful contributions to the world, to recognise our own responsibility and impact in life's unfolding. If we do not consistently show up to do the work we are most passionate about, we are bypassing what delights our heart, makes our lives worthwhile, and fulfills our purpose and contributions during our short time with planet Earth. To Sarah Abbott: thank you for loving me, for pushing through the challenges to follow my intuition, drive, and vision. I could not have done this work without you.

*I honour the 100-plus billion trees and countless beings in their communities who died during these seven years of my degree work due to logging, deforestation, fires, floods, mudslides,*

*storms, insects, disease, landscaping, and changes in environmental and climate conditions as a result of unbalanced, nonreciprocal human-centered consumption and intervention into tree and nonhuman communities. Many humans and nonhumans who touched my life also left for the spirit world. I keep you in loving memory: Mané Raj Abbott, Dr. Jack Boan, Paul Crepeau, Gary Cunningham, Elder Ken Elliott, Dr. Jo-Ann Episkinew, Harun Farocki, Dr. Dominic Gregorio, Sheila Hamilton, Maureen Mazibuko, Dr. Pauline Minevich, Thelma Pepper, Asha Ramsey, Bob and Pat Ramsey, Michelle Sereda, Elder Bob Smoker, Life Speaker Noel Starblanket, Robert Todd, Trudy Stewart, Michael Stone, Gerry Ursu, Agnes Varda, and Catherine Verrall.*

### **Dissertation by Portfolio Components**

The components of this dissertation by portfolio consist of one academic journal manuscript (required), two book chapters (elective components), and this Synthesis Paper (required).

#### **Journal Article** (Peer Reviewed)

Abbott, S. (2021). Approaching nonhuman ontologies: Trees, communication, and qualitative inquiry. *Qualitative Inquiry*, 1-13.

Available as open access through Sage Choice thanks to the Canadian Knowledge Research Network at [doi.org/10.1177/1077800421994954](https://doi.org/10.1177/1077800421994954) or

<https://journals.sagepub.com/doi/full/10.1177/1077800421994954#articleCitationDownloadContainer>

**Abstract:** Consideration of trees has historically been confined to disciplinary, quantitative perspectives embedded in botany, earth sciences, resource management, environmental sustainability, and sustainable development wherein trees are largely viewed as senseless, bio-mechanical matter to be controlled and used for human consumption and economic gain. In this article, I reflect selectively on methodologies and methods I used in a broader, interdisciplinary project to study the sentient, intelligent relationality of trees as agentic, conscious, innovative entities embedded in unique, community-based lifeways. My research framework integrated Indigenous research methodologies, public ethnography, ontological emergence theory, plant science, philosophies of plant and nonhuman knowing, interspecies communication, and filmmaking. Herein, I focus on how perspectives and approaches based on qualitative, ethnographic inquiry and Indigenous epistemologies support and broaden research, (re)presentation, and engagement with trees and other nonhumans. Methods I discuss include the

practices of cultivating tree/human communication and fostering human sensitivity and embodied knowing.

### **Book Chapter 1**

Abbott, S. (2020). Filming with nonhumans. In P. Vannini (Ed.), *The Routledge international handbook of ethnographic film and video* (pp. 224-233). London, UK: Routledge.

*The Routledge international handbook of ethnographic film and video* is available at <https://www.routledge.com/The-Routledge-International-Handbook-of-Ethnographic-Film-and-Video/Vannini/p/book/9780367185824>

Abstract: The history and traditions of ethnographic and filmic approaches to research, methods, and representation have largely been human-centered. This chapter offers ways to reconsider anthropocentric approaches for holistic research with nonhuman participants in order not to separate nonhumans from their known spaces and ways of being, or disregard their needs and realities as individuals and as community. Western and Indigenous worldviews, the treatment of nonhumans in the history of film, and potentials and limitations of different filmmaking styles are touched upon. Analysis of the films *Mountain*, directed by Jennifer Peedom, and *Sea of life*, directed by Julia Barnes, provide examples of representations of nonhumans in ethnographic film. Developments in technology that enable researchers and filmmakers greater opportunities to probe and mediate understandings of nonhuman worlds require critical, ethical, and reflexive attention to the impacts these technologies have on nonhuman worlds, and ways they are represented. It is vital that researchers first take time to make connections with nonhuman participants. Heartful intention, embodied engagement, intuitive knowing, and direct

communication with nonhumans offer mutuality in relations and constitute a practice that requires gentle patience as we repattern toward re-knowing.

**Book Chapter 2** (Lead Author)

Abbott, S. & Leadbeater, S. (2020). If a Tree Falls... Perspectives on Sentience. In R. Povall, S. Lloyd, & J. Ralph (Eds.), *Evolving the forest* (pp. 175-182). Kingsbridge, UK: art.earth Books.

*Evolving the Forest* is available at [https://artdotearth.org/product/evolving-the-forest/?fbclid=IwAR0TyTbvSwDFWpSGHT7dcmTb1-c3IfTe6zu\\_Hw7JBTikhi5UrEuxSONk](https://artdotearth.org/product/evolving-the-forest/?fbclid=IwAR0TyTbvSwDFWpSGHT7dcmTb1-c3IfTe6zu_Hw7JBTikhi5UrEuxSONk)

Abstract: Through a lens of perspectives for and against accepting the sentience of trees, this chapter reflects on different understandings of trees and woodlands as alive or inert; deforestation and climate change; the role of forestry in its relationship with woodlands; thought patterns; and concepts of interconnection.

## **Synthesis Paper**

### **Introduction**

Research for my Doctor of Social Sciences degree focused on the sentient, intelligent awareness and relations of trees through an interdisciplinary mix of approaches to qualitative inquiry and knowledge making. Alongside humans, trees were participants and subjects in my research as agentic, conscious entities with unique ontologies, perspectives and life-ways, alive in ongoing inter-response and action with their surrounding communities. Ontological emergence theory, Indigenous research methodologies, and public ethnography informed my inquiry and its integrated consideration of plant science, philosophies from the recent ontological and nonhuman turns—with a particular focus on plants—and interspecies communication. My overarching research questions considered how tree ontologies can be represented through ethnographic inquiry, and what ethnography with trees reveals about humanity. In keeping with a primary goal of public ethnography, to share academic knowledge with public audiences, and drawing on my experience as a filmmaker, one of my intended research outputs was an ethnographic film. The aim of my research was to learn how the sentient, relational agency of trees can be perceived, practiced, and (re)presented in qualitative inquiry, with the hope of enhancing and (re)activating environmental empathy in people to inspire more ethical and eco-centric perspectives, action, responsibility, and relationship with trees, the environment, and nonhuman worlds.<sup>1</sup>

The purpose of this Synthesis Paper is two-fold. First, it provides an overview of my research approaches, conceptual frameworks, and findings. Discussion of these elements are summarized or expanded upon in correspondence with the extent to which they are discussed in the three pieces of writing that comprise my dissertation portfolio. The film I was making as one

of the dissertation outputs could not be completed in time to be included in the package. The three pieces are 1) the journal article, “Approaching nonhuman ontologies: Trees, communication, and qualitative inquiry” (ANO) (Abbott, 2021a); 2) the chapter “Filming with nonhumans” (FWN) (Abbott, 2020); and 3) the chapter “If a tree falls... Perspectives on sentience” (ITF) (Abbott and Leadbeater, 2020). For efficiency in this paper, I use acronyms when referring to these titles. Conceptual linkages between these writings and aspects of their content emerge throughout the paper in lead-up to a last section on their rationale as dissertation components and explanation of their conceptual links. This is the second intent of the Synthesis Paper. Appendix A lists activities I engaged during my period of study that contributed to and resulted from my dissertation research.

Discussion of the research elements herein is ordered inversely to the academic standard of theory, methodologies, and methods. Following contextualization of the research, methods of inquiry and engagement are addressed first so they are known as the discussion moves to the frameworks and lensing provided by the methodologies and theory. This inside-out approach builds and reflects the entanglements and diffractions at play in the interdisciplinarity, knowledge collection, and findings of my research. Entanglements, writes Gullion (2018, p. 117), are more than things mixed together or their causal relationships, “they are *intertwined at the quantum level*. They are a becoming. They are something new” (emphasis in original). Diffractions reveal “differences from within and as part of an entangled state” (Barad, 2007, p. 89). Borrowing from diffractive methodology, my beginning with the tangible, interactive activities of inquiry aligns with the ways “we make knowledge not from outside but as part of the world” (p. 91), and with Indigenous practices of personal, intimate experience and

observation toward knowledge creation over time (Aikenhead and Mitchell, 2011). Knowledge making from the perspective of diffractive methodology “is a critical practice of engagement, but not a distance learning practice of reflecting from afar” (Barad, 2007, p. 90). “The point,” Barad (p. 91) emphasizes, “is not merely that knowledge practices have material consequences, but that *practices of knowing are specific material engagements that participate in (re)configuring the world.*”

### **Research Context**

Incorporating Indigenous epistemologies and methodologies into my research framework was natural for me, but the topic of trees was unexpected. As an Indigenist, “politically aligned non-Indigenous” (MacDonald, 2017, p. 371; Churchill, 1996) scholar, Indigenous epistemologies, ontologies, values, issues of colonialism, and efforts toward decolonization have been part of my life, work, and research for almost 20 years. It was immediately apparent to me that Indigenous ways of knowing are essential to respectful research with the life-ways and perspectives of trees, and it would have been rudely disrespectful of me to not include Indigenous approaches in this study (Gullion, 2018; Smith, 1999). As Wilson and Restoule (2010) indicate, “it is unfortunate that Euro-Western thinking does not acknowledge that *it* is new, and that Indigenous worldview and practices continue to exist that pre-date the ‘enlightened’ thinking of Western thought” (p. 32, emphasis in original). In many Indigenous worldviews, trees are considered persons and teachers (Harvey, 2006; McGregor and Plain; 2014; Pierotti, 2011); there is an alive presence and inherent relationship in and between all beings and elements in the universe, across time and space; and inquiry approaches go “beyond conventional intellectual ways of seeking knowledge” (Johnston, McGregor and Restoule, 2018, p. 8). These aspects guide and support my research. As

an Indigenist researcher, I situate Indigenous rights, values, and traditions with high priority, recognizing and respecting that these knowledge systems have “evolved over many thousands of years by Native peoples the world over” (Churchill, 1996, p. 509). “Indigenist thinkers encourage the recovery and promotion” (MacDonald, 2017, p. 371) of traditional knowledge systems. As Simpson (2004, p. 382) explains, *Indigenist* differs from *Indigenous* because “Indigenous scholars may not work from an Indigenist or decolonizing theoretical framework, and similarly it is possible for a non-Indigenous scholar to work from within an Indigenous framework.” Indigenist research, Rigney (2006) indicates, must be of benefit to Indigenous communities but is not only intended for Indigenous peoples: it offers “opportunity for Indigenous voices and perspectives, and thus is a critical starting point for addressing vitally important issues affecting Indigenous and non-Indigenous peoples alike” (Johnston et al., 2018, p. 2). Additionally, deepening understandings of Indigenous knowledge systems as a Western scholar supports actions toward (re)conciliation (Skinner, 2018) as called for by the Truth and Reconciliation Commission of Canada (2015).

In keeping with the fundamental starting point in Indigenous research that is a greeting of introduction and acknowledgement, a “self-location statement” (Windchief Polacek, Munson, Ulrich and Cummins, 2018) that situates “self-in-relation” (Absolon, 2010; Graveline, 2000; Kovach, 2009) to personal history, land, readers, and others connected to and connecting with my research: Greetings. I have settler ancestry from England, Scotland, Ireland, and an Indigenous great great-grandmother from what is now Newfoundland, Canada. I grew up in a fractured White middle-class atmosphere, moving regularly between a small town on unceded Native territory in Quebec and Calgary, Alberta, in Treaty 5 territory, before living in several

other places in Canada and internationally. I have now been living in Treaty 4 territory, Saskatchewan for 17 years, working as an associate professor in the University of Regina's Department of Film. At age 30, I learned of my Indigenous heritage through my paternal grandfather's extended family. His wife, my paternal grandmother, had kept this family history a secret and thereby participated in the systemic attempts to erase Indigeneity from the country by the Canadian government and White settler society in general. My life, work, and worldviews are continually expanded through the teachings, culture, and activism of descendants of the original peoples who inhabited, moved across, and currently reside in Treaty 4 territory—the Nêhiyawak (Cree), Anihšīnāpēk (Saulteaux), Lakota, Dakota, and Nakoda, and, later, Métis/Mitchif nations—as well as Indigenous people and cultural knowledge from other parts of Turtle Island<sup>2</sup> and around the world.

My awareness and appreciation of metaphysical phenomena has grown since childhood, alongside deepening self-awareness, mindfulness, meditation, and understandings of interdependence through yoga and Tibetan Buddhism for the past 23 and 15 years. I believe it was trees who, literally and simply, suggested my doctoral research topic when, as I looked up at a forest of Douglas-fir trees on one of my morning walks to campus, the words and sound “an ethnography of trees” suddenly and simultaneously appeared in my internal field of awareness. This was not my thought: I would never, ever, have considered this idea. Prior to this experience, I had never consciously given thought to trees explicitly communicating with humans, but my friendship with someone who communicates and teaches communication with animals, along with my memory of spending intentional time during my childhood with a tree I felt calmed by and who I called Herman, enabled me to be open to the possible reality of my experience. Over

the next three days, I sought affirmation from many different trees I encountered on my walks to and on campus. “Really?” I asked. None of them responded, or said, “Ha ha, just joking.” In hindsight gained through my research, approaching trees in a passing, hurried manner is not the way to respectfully and meaningfully connect with them, just as it is not the way to create this type of connection with another human. Also, in their silence, the trees were likely leaving the choice to me. I decided to pursue the trees’ offering because the experience of receiving their message was so strong and outside my regular experience of myself that I had to accept that it came from trees. It also aroused my curiosity to know more about trees as sensate, intelligent beings and tree/human communication. And it seemed to me that if trees speak, humans must honour, respect, and listen to them (and all other-than-human beings) because of their direct longstanding ties to Earth history and well-being, and the perspectives they offer beyond the human. I now suspect the trees sensed my angst at the time over finding a new dissertation topic: I realised I could not pursue an inquiry into the co-relation of media literacy with protective and risk factors in higher rates of suicide in Indigenous communities because this subject’s emotional and mental challenges would have been compounded by those inherent to the prolonged isolation typically associated with doctoral research. So, with faith in my tree experience and a sense of service, I committed myself to the trees’ suggestion of an ethnography of trees for my dissertation research.

When I let one of my professors know I had a new topic, he sensed my hesitation and asked if I thought he would think I was crazy. I nodded. After I voiced the idea, he eagerly told me about recent research and thinking on the intelligence of plants and the ontological turn in which academics were making space for the aliveness and agency of nonhumans. This was the

first I had heard of such things.<sup>3</sup> Little did I also know I would be entering into relationships with trees and research that would significantly alter my being in and understandings of the world.

Etymologically “writing culture,” ethnography as a methodology involves particular methods of inquiry as process and practice in lead-up to the writing, or mediated, component(s) of a study, traditionally based in human culture. On the whole, defining ethnography is difficult, O’Reilly (2005) notes, “because it is used in a wide range of disciplines drawing on different traditions” (p. 1). Studies “are biographically and contextually varied ... in terms of working style, place, pace, time, and evidentiary approaches” (Van Maanen, 2011, p. 151). Holbraad (2011) notes “that the [nonhuman] things we call ‘things’ [such as trees] might not ethnographically speaking be things as all” (p. 65). “*An ethnography*,” indicates Van Maanen (2011, p. 1, emphasis added), “is written [or filmic] representation of a culture (or selected aspects of a culture).” He writes of the “unbearable slowness ...—from ‘getting in’ to ‘getting out’ to ‘writing it up’—[and the] challenges—empirical, conceptual, textual—” that make it tough “to successfully complete an ethnographic project from inchoate beginnings to readerly ends” (p. 145). Throughout my study, as per the trees’ message, the title of my research was “An ethnography of trees: Sensuous scholarship in plant ontologies and environmental empathy.” Because the film was not completed within the seven-year doctorate timeline, my portfolio components reflect the processes, or ethnographic encounters, that occurred. Thus, the focus of my dissertation is ethnography as inquiry practice and relational ways of knowing, with interspecies communication between trees and humans standing as both research method and outcome. “Tree knowing” in the new title of this Synthesis Paper refers as verb and noun to ways trees are alert to, active in, and knowing of their own existence and communit(ies); Indigenous

and Western ways of relating with trees; tree-human communication; and working with ethnography and sensuous scholarship for qualitative understandings of trees. By general extension, these “tree knowing” approaches can be engaged for research with other nonhumans.

There is intrinsic culture in the knowing of trees that trees and humans share within and between their species, “knowledge of the sort that is said to inform, embed, shape, and account for the routine and not-so-routine activities of the members of the culture” (Van Maanen, 2011, p. 3), through “meanings and practices produced, sustained, and altered through interaction ... in particular places, at particular times ... residing largely within a sphere of social relationships and only indirectly tied to place” (pp. 153 & 154). Like all culture, these “tree knowing” cultures are not themselves visible but are made visible through interpretation and representation (Van Maanen, 2011). The knowledge that emerged through my observation and engagement with the cultural and intercultural ways of being, relating and knowing in my study deeply affected my awareness of the alive, agentic, and sensitive presences and needs of trees and other nonhumans, and of the blinding solipsism most modern humans have been infused with through Western, systems of education, capitalism, and ideology. As Van Maanen (2011, p. 152) acknowledges, for and via immersion in their research, fieldworkers intentionally activate and are compelled “to question if not tear down at least part of their own systems of belief and their preconceptions about themselves and the various communities from which they come.” My “plant blindness,” as Russell (2019, p. 9) calls the tendency of humans to background trees and plants through a disregarding blindness to their alive presence, has been dramatically reduced.

### **Fieldwork**

The ethnographic, field-based methods of my study consisted of workshop and conference

attendance; interviews with people; visitations and communication with trees; embodied observation, inquiry, and reflection; working with film in these contexts; giving public and academic “tree talks;” informal conversations; and copious note-taking and memo-making. These experiences took place in eight countries on three continents<sup>4</sup> in English and Spanish to inform an international mobile, multi-sited ethnography (Marcus, 1998) with a “light” nomadic form of participant observation and rich experiential knowledge—my own and others’. Offering Tobacco to trees and human participants as a protocol associated with Indigenous methodologies, attuning myself to interconnections with trees and their communities, and becoming increasingly sensitized to tree and other nonhuman perspectives and rights were ever-present. I ascribed the term “tree knower” to human participants who know trees and/or plants through their life and work. My conversational interview style was guided for consistency by predetermined questions on participants’ interconnections with trees and their understandings of “the ways [trees and] plants sense and make sense of their worlds” (Myers, 2015, p. 35). The knowledge I developed of tree/human communication processes through the workshops was activated as ethnographic data, research methods, and outcomes. Similarly, information exchanges with audiences for my tree talks provided data for my research. Iterative interpretation unfolded throughout my project. Gestures of reciprocity were built into time and activities spent with participants that in turn strengthened relations and rapport between us. Participants were invited to provide feedback on material in my tree talks, publications, and dissertation package. They were also invited to attend my doctoral defence. When I am finished with the research/film footage, I plan to offer participants a copy of their interview. In many cases, the material will become a valued archival document. To offset environmental impacts of my travel, I donated

funds to organisations dedicated to trees, endangered ecosystems, climate action, environmental sustainability, and Indigenous stewardship. In line with O'Reilly's (2012, p. 127) description, my ethnographic process was deeply "engaged, committed, involved and time-consuming."

### **Workshops**

Over the course of my research, I participated in 22 workshops and conferences, in person and via online webinars and livestreams, related to tree, plant and nonhuman knowing and communication, including a workshop and two conferences held at the Findhorn Foundation in Scotland, a long-standing, internationally-known centre focused on environmentally sustainable living and communication with nature. A weeklong workshop in Italy centered on knowledge-sharing by plant scientist Stefano Mancuso and Paco Calvo, the philosopher of plant science and cognition who participated in my study, while artist attendees responded with works created on site. My response is a short film titled *Gestures toward plant vision* (Abbott, 2021b), composed of cinematic explorations of possible representations of plant vision. Additionally, I participated in an intimate gathering in Ecuador for which a Quechua shaman led four of us to experience connection with the vegetal perspective of San Pedro (*Trichocereus pachanoi*), considered the male counterpart to Ayahuasca and "one of the most ancient magic plants of South America" (Schultes, Hofmann and Ratsch, 1998, p. 166). Via ingestion of the cactus, the aim is to make the participant "'bloom' during the night ceremony, to make [their] subconscious 'open like a flower,' even like the night-blooming *Trichocereus* itself" (p. 169). Immersing myself in these experiences provided resonant sources of experiential knowledge, information, resources, networking, and tree and human participants for my research. Although time spent with teachers and workshop participants was, for the most part, relatively short and did not involve "deeply

hanging out” (Wogan, 2004), I was able to learn about people’s experiences communicating with trees “from their own perspective [based in] their own lived experience” (O’Reilly, 2012, p. 86).

### **Participants and Interviews**

Tree and human research participants were located via my literature review, workshops, and chance encounters. The trees I connected with were a variety of ages and located in urban, rural, and remote areas as well as national, provincial, and city parks. Trees participated in my study through their presence and direct communication with tree knowers during interviews and workshops, and with myself during workshops and when I was alone with trees; their presence with human participants during interviews and forest walks; stories of experiences with trees relayed through tree knowers; my literature review; and near-constant paradigm-shifting presence in my thoughts, awareness, and occasional dreams. Of the many species in my research as individuals and forest communities, the most prominent trees were Ash, Beech, Elm, Eucalyptus, Cacao, Cedar, Douglas-fir, Kapok, Oak, Pine, Palm, Palo Santo, Poplar, Willow, and Yew (species names are capitalised in recognition of their agentic individuality).

Interviews with human participants enabled direct communication and in-depth exploration about their relationships with and knowledge of trees. Forest walks often preceded or followed the interviews so participants could actively share their particular knowledge about trees within the forest communities they know. 20 sit-down interviews were held with 22 people, with durations ranging from 45 minutes to four hours, predominantly outdoors next to trees. I consider these interviewed tree knowers as the formal participants in my study. They were three Indigenous Cree and Shuar Elders living in Canada and Ecuador respectively; a professor emeritus of plant behaviour and intelligence; an academic philosopher of plant science and

cognition; a retired academic agronomist; an academic researcher specializing in tree ring analysis; an arborist; a retired forester; a forest manager; a former logger; a tree essence maker; several tree, forest, deva,<sup>5</sup> and nature communicators; a Gaia communicator; a grassroots farmer; a specialist in Palo Santo trees; a long-time researcher and historian of Yew trees; a Yew shaman; and a young filmmaker whose camerawork for his undergraduate thesis film considers the perspective of trees in the context of arborist work (Toomey, Kuper and Semelofske, 2016). A quantitative overview of these participants reflects their overlapping demographic characteristics as 32% women; 68% men; 5% youth (under age thirty); 14% Indigenous; 23% Hispanic/Sikh/Indigenous; 18% non-Western; 77% White Western encultured; 23% living in a non-Western country; 68% holding non-Western, earth-based worldviews; 27% academics (current/former); 45% tree/forest/agricultural based professions (current/former); and 41% tree/nature communicators. (An acquaintance appreciated that humans were being classified in this list, rather than trees as is usually the case (H. Roberts, personal communication, April 30, 2020).) Missing from my pool of research participants are activists, artists, authors, labourers such as tree planters, landscapers, herbalists, ethnobotanists, ecopsychologists, and other types of scientists, as well as people with other cultural knowledge, traditions and ancestry. When I came in from the field, there were still 20 to 30 people I wanted to connect with for my study, and the list continues to grow. My selection of participants was biased to people with experiential and scientific perspectives of tree knowing over people who mediate tree knowing through arts-based processes that anthropomorphize or fictionalize tree knowing, and it was limited by time and travel allowances within the scope of my project.

I also had informal, one-on-one conversations with approximately ten other tree knowers.

I consider them as informal research participants, along with countless fellow workshop and conference attendees, people I connected with during my tree talks, and people I spoke with about trees in social circumstances. Conversations during relaxed times with all participants was fieldwork in action, outside formal research and interview settings (Adams and Boylorn, 2019). As a gesture of thanks and connection, as time and context allowed, I treated most of the formal participants to a meal before, during, or after our interview. All discussions were candid, relaxed, polite, respectful, reflexive, inductive, exploratory, at times emotional, and always enjoyable (O'Reilly, 2012). The knowledge that emerged was collaborative and rich, relational and co-created (MacLure, 2009). As nature communicator Basia Alexander aptly said to me after our interview in New Jersey,

[it's] not that you're looking for someone to say a particular thing, but you're looking for them to speak the best that they can. ... You've spent a year plus reading, immersing yourself in all of these ideas, so you've prepared yourself as a very rich earth for this space to occur for people to speak into. (June 8, 2016)

### **Offering Tobacco**

In addition to offering Tobacco to the Indigenous Elders who participated in my study, as per the reciprocal protocol of request, acknowledgement, and acceptance for assistance (as ability permits) (Aikenhead and Michell, 2011; Wilson and Restoule, 2010), I offered Tobacco to trees I connected with, individually and as forest, to greet, recognise, respect, and give thanks for their continual presence and work on the planet, as well as for their participation in my research via conversations with and about them, and during filming. As Wilson and Restoule (2010, p. 32) write, “many non-traditional Aboriginal people and Euro-Westerners do not readily understand

the (spiritual) power or the sacred relationship of tobacco.” Offerings of Tobacco are “gifts not a payment. Instead, acceptance of a gift is a way of acknowledging that a relationship has been formed” (Aikenhead and Michell, 2011, p. 80). For most Indigenous cultures and people in North and South America (Russell, 2019), Tobacco is sacred and “plays an important role” (Struthers and Hodge, 2004, p. 210) because it is a powerful connection to the spirit world and enables communication with the Creator (Cajete, 2000; Geniusz, 2015; Wilson and Restoule, 2010). “Tribes throughout North America [incorporate] symbolic representatives of plants and plant kingdoms ... such as cornmeal, tobacco, ... sweet grass” (Cajete, 2000, p. 112) and Sage in rituals, ceremonies, and cultural functions. Although teachings “are different for many Nations,” write Wilson and Restoule (2010, p. 35) citing Montãno (2008), they “are consistent such that tobacco is a sacred medicine.” “Tobacco is the bridge from the physical to the spirit,” says a Cree Elder participant in Wilson and Restoule’s (2010, p. 40) research. The “practice of offering tobacco with humble thankfulness is to petition guidance from the spiritual realm to the physical realm” (p. 32). Wilson and Restoule (2010, p. 35) find expansive understanding of “spiritual relationships of tobacco [through] Atleo’s (2004) description of *oosumich* in Nuu-chh-nulth territory, [wherein] the material world makes an offering to the spiritual world that manifests and affects processes in the material world.” The authors understand that their “offerings of tobacco enact a formal spirit bonding that has implications for what happens in the material/physical world” (p. 35, emphasis in original). As Harvey (2006, p. 44) writes, tobacco-sharing in greetings between people, an example that extends to other circumstances in which Tobacco is offered, entails

the engagement of humans not only in a web of meaning, but also in a wider other-than-human community. The tobacco participate[s] in the greeting. As a person, tobacco immediately extends the greeting between two or more humans into an encounter between human- and tobacco-persons. More than that, as a person of considerable power, tobacco smoke takes the connection and communication far further. Any meeting predicated on the participation of tobacco diffuses the relational encounter outwards and suffuses the world with respectful relationality. Human bodies inhale the sacred smoke and exhale it into the wider world. All of life is touched.

Tobacco is offered “not only to other humans but also to a much wider community of person’s: trees, rocks, fires, animals, Thunderers and others” (Harvey, 2006, p. 43). Connection through offering of Tobacco in the form of the dried plant itself, burning or smoking it, “is ordinary, everyday, uncomplicated, taken for granted. ... Animism is one of those elements of culture that becomes, by long usage and experience, taken for granted ... rarely need[ing] articulating or theorizing ... taught experientially and by initiatory rights” (pp. 44-45). In many Indigenous worldviews, as Geniusz (2015, p. 20) indicates for Anishinaabe (Ojibwe) culture, “all things created are alive:” as different life-forms, we all reproduce, grow, talk, and pass over<sup>6</sup> differently. “All of the different orders of life,” she continues,

all of the different species, and individuals have both a physical and a spiritual purpose. And all of the jobs are necessary if the whole of creation is to be kept in balance. The plants always know their place in the cycle of life. They are always willing to serve their fellow beings, for we are all brothers and sisters in the cycle together. The plants are closer than we to Creator because they were created before mankind. They are willing to

give themselves to maintain the harmony, but they are owed the honour of being *asked* for their sacrifice. (p. 21, emphasis in original)

“You must ask permission of the plant or the medicine will not work,” Hughes (1983, p. 64) states. It is important to speak to Tobacco about one’s intentions and to make an offering of Tobacco to Creator before it is offered to humans and nonhumans (Geniusz, 2015; Herrick, 1997). As Wilson and Restoule (2010, p. 35) share, “traditional people say that tobacco is always first. It is used as an offering for everything and in every ceremony. ‘Always through tobacco,’ the saying goes.”

Regarding the type of Tobacco used, Struthers and Hodge (2004, p. 215) indicate that “when commercial tobacco became available, because it was grown readily, it was easier for many Anishinabe people to just smoke it rather than gather kinnikinnick”—“a mixture of native plants that are used in prayer as an offering to spirit” (Geniusz, 2015 p. 23). Geniusz (2015, p. 152) thinks

the People have asemaa [sacred tobacco] mixed up in their thoughts with Whiteman’s tobacco. The real Anishinaabe asemaa was *Nicotiana rustica*. Today people smoke *Nicotiana tabacum*. This is a much milder plant that produces a smoother, less biting smoke. Real asemaa, *Nicotiana rustica*, was a harsher smoke and was said to even produce hallucinations. ... Some Indian people still grow their own *Nicotiana rustica*, and one can occasionally buy it at pow wows.

Russell (2019, p. 25) apprises that *Nicotiana tabacum* and *Nicotiana rustica*, “the tobacco species with the highest concentration of nicotine, ... at 1.23 per cent and 2.47 per cent respectively” (of the 76 varieties), originated some 200,000 years ago in “the arid landscapes of

Peru, Ecuador, and the Bolivian lowlands [and] evolved prior to the arrival of people” who moved south from a land bridge area now covered by the Bering Strait between Russia and Alaska 20,000 to 11,500 years ago. The transference of Tobacco into Central and “North America as a human domesticant around 2000 years ago [occurred] with the help of hunter-gatherer groups before the advent of agriculture” (pp. 3 & 26). The earliest Tobacco seeds identified in North America, around 2000 years old, are *Nicotiana rustica*, “high in alkaloids with a bitter taste unpopular with [later] European consumers” (p. 84). This transfer and trade of Tobacco resulted in “commodity indigenization ... the process whereby different cultures respond to and absorb new commodities,” and “transculturation ... the process by which habits and things move from one culture to another so thoroughly that they become part of it and in turn change the culture into which they have moved” (p. 50; see Brook, 2008; Miller, 2009; Ortiz, 1947/1995).

In South America, Tobacco “is widely and variously regarded as ... a ‘master plant’, a spirit in its own right, a food for the spirits, ... a plant with the energy to cleanse and cure ... a divine gift that commands utmost respect, a blessing from the gods that can facilitate entry into the spirit world or can be consulted for purposes of divination” (Russell, 2019, p. 25 & 11; Berlowitz et al., 2020). “Its intoxicating and hallucinatory properties [make Tobacco] a central feature of shamanic healing and sorcery,” used more often than “the at least 130 plants with hallucinogenic properties in South America” (Russell, 2019, p. 28). After the “fateful day in 1492 when Columbus had first contact with tobacco ... tobacco’s transit around the world between the middle of the 16th and 17th centuries was extraordinarily rapid” (pp. 110 & 50). One of the many trade routes “was to arctic North America. The Siberian Inuit brought it across

the Bering Sea to the extreme western peninsula of Alaska, and from there it was traded with the Norton Sound Inuit” (p. 49) and moved inland. Due to the relatively late arrival of Tobacco in the artic, “there is no mention of the plant in Inuit mythology, and none of the rich symbolism, tobacco shamanism, and tobacco deities that are found to the south” (Wilbert, 1987, p. 202). “Likewise,” continues Russell (2019, p. 50), “unlike their Siberian counterparts, Inuit shamans appear not to have picked up the habit of using tobacco to help themselves enter trances, communicate with spirits, or heal the sick.”

I learned the gesture of Tobacco offering through time spent with Indigenous people prior to my doctorate work and engaged it more and more as method as my research progressed. I wanted to incorporate this Indigenous protocol into my research as an offering of acknowledgement, respect, and reciprocity. It continues to be a practice for me to always remember to make an offering when I am with trees or out on the land, laying down a little Tobacco when I am with them. As I approached new aspects of my research, I offered Tobacco for assistance. I used Tobacco I had grown and dried myself, traditionally prepared Tobacco I been gifted with, and American Indian organic commercial Tobacco. Because understandings and ways of use of sacred Tobacco are generally not overtly spoken about (Harvey, 2009; Wilson and Restoule, 2010), it was not until after I came in from the field that, through my continual literature review, I learned more of the nuances of Tobacco: its personhood and deep sacredness, the way it works to inter-affect the spirit and material worlds, and the importance of connecting with Tobacco itself and Creator before offering it to others.

An Oneida Elder participating in Wilson and Restoule’s (2010, p. 39) study commented that “research is learning more of all the pieces of the story. ... Research is time; it’s not always

the right time to read a particular book.” In line with this reflection and Wilson and Restoule’s (2010, p. 33) note that ”knowing and coming to know are personal experiences,” I have further appreciation for an experience I had in the field as a Tobacco teaching. Invited to give a tree talk, I was a visitor on land significant to the 1885 Battle of Batoche in Saskatchewan, the last major battle of the North-West Rebellion in which Métis and First Nations allies were defeated by government soldiers with 51 casualties and 173 people injured on the Métis side (Boileau, 2021). All day, after arriving, I felt a jangly, unsettled energy. Speaking about this to a collegiate friend the next day, I learned the confusing, uncomfortable energy could have been because I did not offer Tobacco in advance of my visit or when I arrived, something the spirits and ancestors of that land would have been accustomed to if not expectant of, especially considering I am a settler person and a stranger to the area. I offered Tobacco when I was home a day later, in greeting, gratitude and apology, and felt a sense of peace. For my talk, I was extremely humbled and moved to receive for the first time a pouch containing Tobacco and Sweetgrass for the sharing of my research and understanding of tree-human communication.

Similarly, when I offered Tobacco to the Cedars living along the Giant Cedars Boardwalk Trail outside of Revelstoke, British Columbia halfway through my visit there, I felt the trees open to me and I received some communication from them indicating they felt like they were in a zoo. As “some of the trees in this old growth forest are over 500 years old” (Banff and Beyond, 2021, para. 1), they would have been accustomed to cultural gestures of reciprocity from the Sinixt, Secwepemc, Ktunaxa, and Syilx First Nations people who, for thousands of years, have lived and had traditional land use in the area (Revelstoke Museum & Archives, n.d.). Later, when I offered Tobacco to the five trees for their participation in the public tree talk I gave for the

garden tour fundraiser in Regina, Saskatchewan, discussed in ANO, I felt a sense of appreciation for the gesture but that Tobacco offering was not something they were habituated to. In hindsight, this aligns with their life in a White suburb with individual ages of 60 or so years or younger.

Although offering Tobacco is not a protocol indigenous to European countries, I engaged the practice as acknowledgement, energetic intention, and an extension of my living heritage based in Turtle Island with trust that trees in Europe would be receptive to the intention motivating these gestures, perhaps with memory of the pagan, Earth-based, animist and “ancestral (pre-Christian) religious traditions of Europe” (Harvey, 2006, p. 85). “When you give tobacco it is from the spirit of what you are asking for” indicates the Cree Elder in Wilson and Restoule’s (2010, p. 39) research. The Shuar Elders and Quechua shaman who participated in my research were very appreciative of the American Indian organic Tobacco I brought to Ecuador to give to them. As Wilson and Restoule (2010) note, “many relationships are activated when tobacco is part of a research methodology.” Incorporating offerings of Tobacco into methods honour and respect that “knowledge is received or gifted from all living things and from the spirit world” (pp. 29 & 33). Connecting with Creator “is more than merely a tool or method; it is a practice of faith continued from the beginning of Creation” (p. 31). Experiences of offering Tobacco as an Indigenous protocol and field method are also discussed in ANO and FWN.

### **Tree Communication and Embodied Knowing**

For my research, I learned and engaged methods for ethical inquiry, mutual, relational respect with trees, de-centering my human self, and *tuning into*—giving attention to, deciphering and discerning—the sensibilities and messages of trees. These methods are discussed with

significance in ANO and FWN. In summary, they include the observational, interactive, durational, patient and mindful practices of embodied and meditative engagement; sensual, intuitive knowing; discernment; attention to right versus left-brained awareness and activity; telepathy; deep listening; inner, open silence; receptivity; knowing through nonlinearity and metaphor (Cajete, 2000); energetic intention; seeking permission to connect; reciprocity; greetings, introductions, and farewells. As I write in ANO, these practices require “moving perception from the mind and head to the heart and belly—from linear thinking associated with judgment and preconceived ideas to open, sensuous, nonlinear sensitivity that welcomes the unexpected” (Abbott, 2021a, p. 8). Understanding of the ways our individual intuitive fields sense and receive awareness and communication develops over time, experience, and observation.

These practices can open us to communication and insights via the bioenergetic (Alexander, 2017) space between and overlapping with what most humans perceive as bodies with boundaries. As Harvey (2006, p. 44) writes, “we (humans) are more than we seem at first sight, our body surfaces define us significantly but never totally. We are constructed or composed externally, internally, physically, mentally, spiritually and in every other way for relationships.” Recognising the limitations of language, English in particular, I refer to the practices using human language in order to discuss them with readers who are also human; because I am a human raised in the Western paradigm and it takes time and process to (re)learn different ways of knowing and being outside that paradigm; and because, still practicing and learning, I do not yet know how trees and other nonhumans would express their experiences of different communication and observational methods in their languages. In the end, these points

may be somewhat moot because, as Alexander (2017, 6:00) explains, “even if you think you are experiencing your own thoughts, realise that the tree’s intelligence is overlapping its messages with your [individual] sensory system.” In other words, the tree communicates through the communication, intuition and knowledge systems of the human it is communicating with. For English speakers whose intuitive perceptions are based in language, for example, they will receive messages in English, while other people might receive messages through arising sensations in their body. I elaborate on tree-human communication and modes of intuitive perception in ANO.

Although my research is informed by experiences of communication between trees and humans—my own and others—my inability to always hear trees as some of my participants do enabled distance and insight for my research through the practice necessary for learning a new skill and method, and in not becoming completely immersed in the worlds I studied. Circularly, the communication approaches I learned and engaged are research findings that became methods that enabled a number of experiences with trees on the metaphysical plane that contribute to my research findings. While my multi-sited ethnographic process precluded deep, durational engagement with a single community of trees or tree knowers, it highlighted and confirmed that people the world over have relations with trees that involve mutual communication.

### **Tree Talks**

By the time of my defence, I had given 12 public and academic presentations on my research, with three of them including participatory exercises on communicating with trees (see Appendix A). Giving these tree talks was simultaneously research dissemination; field method; a goal of public ethnography that situated my research in interactive, emergent engagement with public

audiences; a gesture of reciprocity to the trees and humans who contributed to my knowledge-making (Corby, 2021); and activism on behalf of trees. A thrilling and inspiring, energetic feedback loop was created, entangled in real and present time: as I shared my unfolding research, the responses, information, and gratitude acquired via each talk enriched my literature review material, ethnographic data, network of tree knowers and trees, and confidence in my research topic. Questions from audience members directed my attention to points that needed clarifying and/or consideration, while the stories shared by some of these strangers about their communications with trees supported the metaphysical elements of my research. Preparing proposals to align my research with academic conference themes I had not previously addressed broadened my thinking about my research. All aspects of the tree talk experiences revealed new facets of my topic, its importance to people and planetary well-being, and the importance of my relationship with my topic (Whitnui, 2014). As an inquiry method and process in action via dissemination, these talks provided more interactive opportunities for public and ethnographic knowledge-making during the course of my research project than finishing the film would have.

### **Film Production**

The filmmaking methods of style and technique as well as emergent (re)presentational tensions I engaged while collecting research data and footage are discussed in FWN and ANO. Although the finished film is no longer a component of my dissertation portfolio, engaging the sensuous scholarship of film and the practicalities of filming were constant, demanding aspects of my research that deserve some attention in this discussion.

Filming was done on my own, with the exception of working with two different camera people for two interviews and a three-day workshop, and production assistance for three of the

four interviews in Ecuador from a travel companion and two translators. While I set up for the interviews, human participants helped with easy carrying and arrangements, read and signed their consent and release forms, and we chatted. The process of finding best locations for the interviews let them know I cared about representing them well. Working on my own required an immense amount of energy and focus, mentally, emotionally, and physically: to carry and keep film equipment organized; set up the equipment and film frame for the interviews; pay attention to filming particulars such as focus, exposure, light levels, weather, and battery power; gently change batteries and memory cards during the interviews to maintain the camera frame; monitor sound levels; maintain a relaxed, authentic, focused, and open atmosphere; and ensure I asked all my questions. I sat or lay on the ground directly behind the camera for the interviews, often in precarious positions, so participants' eyelines were with the camera lens and thus with viewers of the final film. Location considerations included aesthetics, light, a tree or trees in the frame, frame composition, seating participants next to or near a tree on a stool or the ground, and the comfort of all involved. Outdoors, cool damp weather and holding positions over time were sometimes a challenge for participants and myself. The camera was mounted on a small tripod for interviews and handheld for walks among trees. Three interviews took place indoors due to poor weather or sound conditions.

Location particulars of time and accessibility enabled varying amounts of additional footage to be gathered before and after interviews when I was filming on my own. Working with a cameraperson enabled more variety of location imagery, additional angles on interviews and workshop lectures, footage that includes me in the frame, and some relief from attendance to the many filmmaking particulars. During filming, the sound of air traffic was almost constant. In

conventional film productions, filming is stopped when a plane is heard in order to capture perfect “silent” audio to avoid troubles in the sound edit. I chose to keep the camera rolling to reflect the reality of the ever-present air traffic and the impact of *anthrophony*, human-generated sound, on trees, nonhumans and their living spaces (Krause, 2013).

After the day with participants, alone at my computer, I took another one to three hours to transfer the footage to two portable hard drives, mindfully delete material from the memory cards, charge batteries if I would be filming in the next days, and add finishing touches to the day’s field and filming notes. Much more could be said about the myriad decisions, activities and interactions I engaged for the filming process, but I will leave that for another discussion.

## **Methodologies**

### **Public Ethnography**

Ethnography, outlined by Gullion (2018, p. 95) from a perspective of diffraction, is an experiential, nonlinear, emergent research process that is constantly “folding and unfolding ... dynamic, variable, and changing [as] ethnographers attempt to understand that movement through engaged” situational, relational, durational, iterative practices of interaction, interpretation, translation and representation with, within, and for social groups. Primary fieldwork methods include interviews, observation, participation (known as participant observation), and field notation in order to understand cultural life-worlds “more or less as they are experienced and understood” by the research participants—human and nonhuman—”who ‘live them out’” (Crang and Cook, 2007, p. 1). The methods involve “intense reliance on personal seeing, hearing, experiencing in specific social settings [and] immersion in situated

detail,” Van Maanen (2011, p. 156) writes, and carry “quite serious intellectual and moral responsibilities” (p. 1). Fieldwork

is a technique of gathering research material by subjecting the self—body, belief, personality, emotions, cognitions—to a set of contingencies that play on others such that over time ... one can more or less see, hear, feel, and come to understand the kinds of responses others display (and withhold) in particular social situations. (p. 150)

Reflexivity and reading also make up “a large part of [ethnographic] research endeavours” (p. 150). They, along with fieldwork encounters, constitute what Van Maanen (2011) terms “headwork.” This “huge part of any project [is] the conceptual work that informs ethnographic fieldwork and its various representational practices” (p. 155).

Based in traditions of ethnography, public ethnography is a relatively new research strategy with evolutionary roots in the collision of anthropology and ethnography with postmodernism and developments in media technologies over the 20<sup>th</sup> century. The aims of public ethnography situate research in public settings (Adams and Boylorn, 2019); pursue research of interest to the public; may be collaborative with public stakeholders (Vannini and Mosher, 2013); mediate research outcomes by adapting for format conventions and audience expectations (Vannini and Mosher, 2013); and share research with nonacademic audiences. Public ethnography is “characterized by creativity, critique, innovation, participation, and activism on the part of researchers in order to reduce social injustice, promote social awareness and cultural understanding, and ensure that social scientific knowledge reaches public audiences beyond academic circles” (Vannini and Abbott, 2018, p. 691).<sup>7</sup> Modes of dissemination to this end are often arts-inspired and built into research project designs; they can include films,

photography, performance, blogs, artistic exhibitions, and writing for public venues. Whatever the means of dissemination, notes Mosher (2013, p. 428), the goal of public ethnography is to “engage public audiences in conversation about society.” Researcher subjectivity and deep reflexivity are significant aspects of public ethnography. Public ethnography broadens ethnography through its social criticism, public engagement, scholar activism, open access view of education and academia, political transformation, and cultural reflexivity on “the critical social issues of our time” (Tedlock, 2005, p. 159; Bailey, 2008; Vannini and Mosher, 2013). Many of the attributes of public ethnography overlap with Indigenous research methodologies and decolonizing research praxis, including equality between researchers and participants, action toward empowerment of all involved, reflexivity, observation, iteration, and dissemination of research findings back to communities.

### **Indigenous Research Methodologies**

Indigenous epistemologies and methodologies that have developed over millennia guide research in culturally respectful and appropriate ways, with characteristics, values, and protocols that precede and counter the Western worldview’s tendency to approach life through dualistic separation of nature and culture. Indigenous worldviews are based in interconnection and “a direct relationship with the Earth as a source of knowledge and meaning for human life and community” (Cajete, 2000, p. 109), “rather than the hierarchical relationships of exploitation characteristic of Western cultures” (Oetelaar, 2013, p. 95) and “the search for predictive and explanatory general rules [and] mathematical order that [Western scientists] believe characterizes the universe” (Vogel, 2012, p. 5). While important to understanding, “the overriding need to contrast Indigenous with Western ways of research [tends] to mask [the] incredible diversity of

Indigenous research across nations” write Johnston et al. (2018, p. 2). Indigenous research methodologies (IRM), they elucidate, “can be understood as processes for establishing, strengthening, and coming into closer relationship with knowledge” (p. 11). Further, citing other Indigenous/Indigenist scholars from various nations, IRM

arise from Indigenous worldviews (Geniusz, 2009; Kovach, 2009; Lambert, 2014), but they are also shaped by centuries of struggle to survive and overcome colonialism.

Indigenous research seeks to expose epistemic violence and domination (Walker, 2013) and poses a counter-narrative to Western research approaches. [Research provides] a tool to achieve sovereignty or self-determination. However, Indigenous research methodologies are not simply a response to colonialism; they have existed for thousands of years (Wilson, 2008). Indigenous research methodologies reflect how knowledge is understood and sought in the context of the worldviews, ontologies, and epistemologies of diverse Indigenous nations. (p. 4)

IRM advocate for a holistic research approach aimed at respect and restoration of the collective rather than the individual (Lawson-Te Aho and Liu, 2010). This approach takes into account that Indigenous knowledge is connected to land (Lambert, 2014; Johnson & Larsen, 2013; Tuck & McKenzie, 2015), is “specific to place and rooted in history ... involve[es] body, mind, feelings and spirit [and] emerges in dialogue” (Brant-Castellano, 2008, p. 425). Indigenous knowledge “originates in oral sources (conversations, stories, traditional teachings) in the day-to-day practices of Indigenous peoples (researchers and non-researchers alike) according to Indigenous worldviews and including insights from the spirit world” (Johnston et al., 2018, p. 4; Walker, 2013; Wilson, 2008). It is passed down through generations to converge as “perspectives

from different vantage points over time” (Brant-Castellano, 2000 p. 24) based “in real-life situations and settings” (Lavallée, 2009, p. 22). Indigenous knowers and knowing are “intimately and personally interconnected with what it is they know” (Aikenhead and Michell, 2005, p. 68). The teacher and student—and by extension, the researcher—“have a responsibility for the knowledge that is passed between them” (Baskin, 2005, p. 32). Traditional knowledge is deeply valued by Indigenous people, who look “to elders as the keepers of oral tradition and the sources of wise counsel” (Brant-Castellano, 2008, p. 425).

As Lavallée, (2009) summarizes—in keeping with the awareness that “knowledge systems of Indigenous peoples vary throughout the world and even within countries” (p. 22) because they are “rooted in, congruent with, and respectful of the” (Johnston et al, 2018, p. 6) “beliefs, values, principles, processes and contexts” (Absolon, 2011, p. 22) particular to each Indigenous nation—

the relational nature of Indigenous epistemology acknowledges the interconnectedness of the physical, mental, emotional, and spiritual aspects of individuals with all living things and with the earth, the star world, and the universe. Indigenous epistemology is fluid, nonlinear, and relational. Many Indigenous ways of knowing accept both the physical and the nonphysical realms as reality. In accepting the nonphysical, one must accept that reality cannot always be quantified. (Lavallée, 2009, p. 21)

Dividing “any of these realities into separate categories, Baskin (2005, p. 32) indicates, “is a dishonour to Aboriginal ways of thinking.” Responsibility, or relational accountability, “in the context of Indigenous research methodologies,” Johnston et al. (2018, p. 14) note, “is about more than taking responsibility as a researcher; it is about taking responsibility as a human being

embedded in a network of relationships.” Following this awareness of interconnection, Lavallée (2009) signals the impossibility of research being “completely objective. Individuals conducting the research are necessarily connected to the individuals being researched, and all concerned are connected to all other living things. ... The story of one cannot be understood outside of the story of the whole” (pp. 23-24).

Indigenous epistemologies and ontologies are in interactive awareness and responsibility with and for natural law, the blueprints provided by nature “of how to live well and all that is necessary to sustain all life” (Michell, 2005, p. 39). “Knowledge is alive and dynamic” (Johnston et al., 2018, p. 6, citing Absolon (2011, p. 49)) because it is “earth-centered and harmoniously exists in relationships with Creation.”

Knowledge is bigger than we are, something we can uncover only a part of; ... here before we were; ... an open-ended process [(Absolon, 2011)]; ... difficult to predict where we might end up, what we might come to know; ... organic, because it “is cyclical and circular and follows the natural laws of Creation” (Absolon, 2011, p. 31). (Johnston et al., 2018, p. 7)

“Indigenous place-based research methods,” Johnston et al. (2018, p. 7) continue, “enable interactions, engagement, and reciprocity in knowledge exchange with the natural world.”

Knowledge and research are embodied, entailing “attunement to the embodied landscape as a primary way of coming to know ourselves in relation to others” (Johnson and Larsen, 2013, p. 15). This requires and generates knowing of our inner world in relation to outer phenomena and the spirit world (Johnston et al., 2018). “Place-Thought,” Watts (2013, p. 21) indicates, “is based upon the premise that land is alive and thinking and that humans and non-humans derive agency

through the extensions of these thoughts.” Thus, “research is not solely the domain of humans; the land, place, and non-humans also generate knowledge. ... Relational accountability includes literally all relations.” (Johnston et al., 2018, pp. 7 & 13). As McGregor and Plain (2014, p. 111) share, “our teachers ... include non-human forms such as animals, trees, waters, rocks, etc. They are our relatives and we continue to learn and seek guidance from them as we always have.” Reciprocity has “cosmological connotations, concerned with maintaining balance not just between humans, but with energies that connect and thread through all entities in the Universe” (Tuck and McKenzie, 2015, p. 95).

“Of all the forms of Indigenous knowledge discussed,” Johnston et al. (2018, p. 9) write, spiritual knowledge is the least accepted in the context of Western research, except perhaps as anthropological data (Kovach, 2009). For this reason, and to protect sacred knowledge from being misused, researchers sometimes resist writing about the spiritual channels they use for accessing knowledge (Kovach, 2009). Others, such as Wilson and Restoule (2010), however, believe that acknowledging these sources of knowledge is a matter of respect and humility.

“The essence of Native spirituality is not religion in the Western sense of the word,” Cajete (2000, p. 14) indicates, “but rather a set of core beliefs in the sanctity of personal and community relationships to the natural world, which are creatively acted upon and expressed at both the personal and communal levels.”

Aspects of IRM that I incorporated into my research involve the guiding values and principles of six “Rs of Indigenous research” (Johnston et al., 2018, p. 13) to carry out the research in a good way: relationship, respect, responsibility, relevance, reciprocity, and refusal—

respecting if human and tree participants refused to disclose or connect (Simpson, 2007). I also incorporated reverence, as Archibald, Lee-Morgan and De Santolo (2019) include in their list of ethical principles. I integrated self-in-relation statements; “owning [my] subjectivity” (Johnston et al., 2018, p. 11); taking personal care and responsibility for shared and arising knowledge (Johnston et al., 2018); land acknowledgements and honouring of nonhuman relations; involving Elders as participants in my research (“a critical component of an Indigenous research methodology no matter what the topic” (p. 12; Simpson, 2000); Tobacco offering; asking “permission before doing things and ensur[ing] everyone participating in the research is doing so voluntarily” (Johnston et al., 2018, p. 14); ongoing and expanding awareness of Indigenous worldviews, knowledge, and knowing—physically and metaphysically; interpreting research findings through Indigenous epistemologies; and effort toward decolonization within and through my research—“designing and carrying out research in ways that honour Indigenous knowledges and communities rather than privilege colonizing institutions” (pp. 5-6) and knowledge systems, invariably requiring “unlearning” (p. 16; Strigley and Varley, 2018). In keeping with the various particulars specific and relevant to research projects, “Indigenous research practice,” Johnston et al. (2018, p. 2) indicate,

looks different depending on the variety of factors that define [who you are], including where you are from, your motivations for carrying out the research, your level of accountability to your research participants, your relationships with both participants and partners, and your research location. The approach used depends upon the question(s) being asked and the process used to generate these questions.

Indigenous epistemologies and methodologies are also discussed in ANO, in most depth, and as

thematic threads in FWN and ITF.

### **Ontological Emergence Theory**

The core tenet of ontological emergence theory is that its “relational view of reality does not merely mean that all things exist in a world of relations and are somehow interrelated to each other, but that their very existence, identity and behavior are constructed and transformed by specific systems of interactions” (Santos, 2015a, p. 439). The phenomena comprising all entities are attributed with “ontological status, identity and causal efficacy” (p. 430). Simply put, ontological emergence theory regards phenomena as emerging through relations via the nature of being of the parts that come together to form unique phenomena. This “naturalistic notion of emergence” differs from “atomist, vitalist, preformationist and potentialist” views of emergentism via its centralizing of relations within phenomena. O’Connor and Wong (2015, para. 1) “roughly characterize the shared meaning” of emergence among theorists as: “emergent entities (properties or substances) ‘arise’ out of more fundamental entities and yet are ‘novel’ or ‘irreducible’ with respect to them.” Explaining the basics, “the world appears to contain diverse kinds of objects and systems,” writes O’Connor (2020, para. 1), such as “planets, tornadoes, trees, ant colonies, and human persons, to name but a few—characterized by distinctive features and behaviors.” The properties and behaviors of a tornado, whose components include dust, debris, micro-entities, and, I will add, climate and weather conditions,

likewise depend, one way or another, on the properties and interacting behaviors of its fundamental components. Yet the tornado’s identity does not depend on any specific composing micro-entity or configuration, and its features and behaviors appear to differ in kind from those of its most basic constituents. (para. 2)

Thus, a whole entity, such as a tornado, reflects the interdependent relations of unique and arising properties of which it is comprised while the particular composition of the properties—a tornado at a certain time and place—is unique and arising unto itself.

Contemporary debates in philosophy and science “concerning the reality or precise nature of emergence” (O’Connor, 2020, Introduction, para. 1) stem from Aristotle’s processual conceptions of form and matter. Aristotle’s speculations of nature evolved in the medieval era through Persian, Arabic, then Western considerations while maintaining his “rejection of atomism” (para. 2), until, via Descartes, “an austere mechanistic and reductionist conception of material bodies [became] widespread” (para. 3). The British Emergentists “were the first to work out a comprehensive emergentist picture” (O’Connor and Wong, 2015, Section 1), coining the term *emergence* (see Lewes, 1875) and theorizing that “the behavior of living beings involves a failure of aggregativity or linearity of influence among their elements” (O’Connor, 2020, Introduction, para. 4; see Mill, 1843/1872). At the time,

reduction-minded ‘mechanists,’ who supposed that the processes of life were governed wholly by physical-chemical principles, contended with the extreme anti-reductionist ‘vitalists,’ who posited an entelechy, a primitive substance or directing principle embodied in the organism which guided such characteristic vital processes as embryonic development and the regeneration of lost parts. Emergentists sought to develop a middle way, eschewing vital substances but retaining—in *some* sense—irreducibly vital qualities or processes. (O’Connor and Wong, 2015, Section 5, emphasis in original)

At its peak, British Emergentism, through Broad (1925), used “an epistemological criterion for what he intends to be a metaphysical condition of emergent autonomy” (O’Connor, 2020,

Introduction, para. 5) while considering emergent properties to be fully determined by lower-level properties. Metaphysical, ontological assumptions were implicit in their theorizing (O'Connor and Wong, 2015; Santos 2015a). As Broad (1925, p. 61) writes,

the characteristic properties of the whole  $R(A, B, C)$  [where  $R$  marks their structural arrangement] cannot, even in theory, be deduced from the most complete knowledge of the properties of  $A$ ,  $B$ , and  $C$  in isolation or in other wholes which are not of the form  $R(A, B, C)$ . (square bracket note in O'Connor, 2020)

In the 1970s, emergentism “was substantially reinvigorated ... with the discovery and creation of non-linear complex systems of both natural and artifactual varieties” (O'Connor, 2020, Introduction, para. 6). Piaget considered classical (epistemological) emergence as an inconsequential theory (Santos, 2015a) because “to note the existence of wholes at different levels and to remark that at a given moment the higher ‘emerges’ from the lower is to locate a problem, not to solve it” (Piaget, 1970, p. 46). For Silberstein and McGeever (1999, p. 182), classical emergence is “merely an artefact of a particular model or formalism generated by macroscopic analysis, functional description or some other kind of ‘higher-level’ description or explanation.” Ontological emergence, they write, “entails the failure of part–whole reductionism” (p. 182). “If emergent phenomena somehow involve, or are generated from, non-additive relations,” Santos (2015a) agrees, “they are not explainable or reducible through the traditional atomistic (additive) kind of approach. [An] atomistic view of reality ... is devoid of any ontological significance” (pp. 434 & 438).

Santos (2015a) advocates for “an entirely naturalistic notion of emergence” (p. 445), a *neo-emergence* theory (Kim, 2006), that extends beyond “simplistic atomistic conceptions of

relation, causality, reduction and explanation” (Santos, 2015a, p. 445). He argues “that a naturalistic notion of ontological emergence can only succeed if we explicitly refuse the atomistic fundamental ontological postulate that asserts that every entity is endowed with a set of absolutely intrinsic properties, being qualitatively immutable through its extrinsic relations” (p. 429). For him,

the notion of organization by itself is not enough ... ontological emergence can only be justified by assuming a *relational* ontological perspective that, in opposition both to atomism and holism, defends that the existence-conditions, the identity and the causal behavior of any emergent systemic property can only be conceived, and explained, as constructed by and through specific networks of *qualitatively transformative* relational processes that occur between the system’s components and between the system and its environment. Additionally, [this entails] the idea that an emergent phenomenon is both dependent on, and autonomous from, its emergence base. (p. 429, emphases in original)<sup>8</sup>

Further, in evolution from the abovementioned shared base understanding of emergence (O’Connor and Wong, 2015), ontological emergence is

a generation process whereby a produced phenomenon (the ‘emergent’) is not completely reducible to the set of previous phenomena from which it was generated (the ‘emergence base’), in the sense that it represents a *qualitative novelty* and manifests some degree of *reality* or *autonomy* over and above the set of its base elements. (Santos, 2015a, pp. 430, emphases in original)

A qualitative, relational consideration of actualization within the realm of ontology is “an unfolding process of becoming” (Remme, 2014, p. 417).

In a relational process approach to understanding phenomena, “reality is conceived as a continuously changing web of co-dependent relational construction processes between an ever indeterminable number of relations and relata, always transforming each other and co-evolving through different relational systems” (Santos, 2015a, p. 439). Ontological emergence corresponds with a relational, web of relations (Kimmerer, 2003; Wilson, 2008), view of life that is fundamental to many Indigenous epistemologies; material semiotics and rhizome theory through “emergence and becoming” (Remme, 2014, p. 416; Bolt, 2004); and with Ingold and Pálsson’s (2013) concept of *biosocial becoming*, which also informs the theoretical lens of my research. Biosocial becoming takes the view that nonhuman and human life evolves equally and intrinsically through both biological and social influences that are mutually conditioning via emergent “fluxes and exchanges” (Ingold, 2013, p. 9) in processes and relations. As such, Ingold (2013) indicates, all creatures should be considered not as “what they *are*, but of what they *do*”—“not as *beings* but as *becomings*— ... not as discrete and pre-formed entities but as trajectories of movement and growth” (p. 8, emphases in original).

### **Entangled Knowledge Frameworks**

The interdisciplinary epistemological, theoretical, and methodological frameworks at work in my research via public ethnography, Indigenous research methodologies, and ontological emergence theory (OET) generate an array of diffractions and entanglements that enhance, bridge, and challenge interpretations and understandings within and for my research process and findings. This exciting “intellectual cross-fertilization” (Powers, 2010, p. 16) reflects the benefits of “understanding[s] of the real world ... to be informed by more than one theoretical point of view” (p. 16). It creates interactive fluidity that precludes “the trap of solidifying theory” (Gullion,

2018, p. 104) and generates “a threshold space of possibility in thinking” (p. 103, citing Jackson and Mazzei, 2012). For ethnographic inquiry, integrating theory as “a guidepost for thought” (p. 101) with ethnography’s otherwise atheoretical practices at the start of research generates a constant dialogical integration of theory and data “to glean new insights into both” (p. 101). Without theory, ethnographic data remain “the products of story-telling [that] we humans construct for ourselves” (p. 102). Thus, using theory to inform how ethnographers “think about a thing in a structured manner, ... for viewing a particular phenomena in a particular way” (p. 101), differentiates social science from journalism. Conscious, reflexive work with theory also helps identify components that shape researcher viewpoints and their research. “Thinking with theory,” writes Guillon (p. 104), “is an organic process:” lively, entangled, diffractive—and emergent.

In social science, as in all “science, theory has its greatest value when it offers insight that can help us better understand how the world around us operates” (Powers, 2010, p. 12). In a perhaps unusual combination, Indigenous epistemologies that inform Indigenous research methodologies entangle with OET in similarities, differences, historic and current research and colonial tensions that expand understandings of the world and approaches to knowledge-making. A dedicated, deep focus on these complexities would be an intriguing study in itself. For the purposes and scope of my doctoral research, my discussion is concerned with the basic premise of OET rather than intricate aspects of the theory such as weak and strong emergence, autonomy and dependence, and quantum entanglement (O’Connor, 2020). Asking forgiveness from experts in the fields if I inadvertently omit important nuances, I humbly address broad elements of the pairing, beginning with the similarities between Indigenous epistemologies and OET.

In positing relations “as the primary objects of research” (Santos, 2015a, p. 442), as well as recognizing ontological status and nonlinearity in those relations (Cajete, 2000; Silberstein and McGeever, 1999), ontological emergence aligns with the reality of interrelations that is the most fundamental facet of Indigenous law (McClaslin and Breton, 2008). As Tuck and McKenzie (2015) indicate, “Indigenous knowledges emerge and exist within a universe that is relational and responsive” (p. 95): Indigenous knowing of the becoming or emergence of phenomena understands becoming/emergence of phenomena as relational, ontologically responsive, physical and metaphysical, and inextricably, infinitely interconnected with all phenomena in the universe. Knowledge itself is “alive and dynamic” (Johnston et al., 2018, p. 49; Absolon, 2011). This knowing synchs with “the failure of part–whole reductionism” (Silberstein and McGeever, 1999, p. 182) that OET advocates. Debates on emergence in OET, writes O’Connor (2020),

are of considerable importance for our understanding of the natural world and of our own place within it. ... These questions are neither simply empirical nor wholly *a priori* in character, but are rather such that plausible (if not uncontroversial) answers require consideration of and support for metaphysical interpretations of the structure of natural reality in light of our best empirical theories. (Introduction, para. 6)

In a relational process approach to understanding phenomena, re quoting Santos (2015a, p. 439), “reality is conceived as a continuously changing web of co-dependent relational construction processes between an ever indeterminable number of relations and relata, always transforming each other and co-evolving through different relational systems.” OET considers metaphysical

elements in continual and interconnected relational emergence, what Indigenous epistemologies are innately aware of.

Another similarity lies in the proposal from recent OET scholars (Humphreys, 2016; Santos, 2015a,b) to sever

the idea of a privileged class of hierarchically-organized wholes from the concept [of emergence] altogether. They advance an ontological framework in which basic and structured individuals undergo fundamental change. ... The dynamic itself is constantly evolving, as elements are transformed through interactions with other elements.

(O'Connor, 2020, Section 4.2.4)

“From a relational ontological viewpoint,” Santos (2015b, p. 28) writes, “‘whole’ is just a *word* that names the relational totality of the individual *relata* and their relations, the only real causal agents being the *relata* and their intra-level relations” (emphases in original). This concept seems to align with Indigenous awareness that all life elements are equal and perhaps of “the energies that connect and thread through all entities in the Universe” (Tuck and McKenzie, 2015, p. 95). Regarding quantum entanglement, O'Connor (2020, Section 5.2.1) cautions, because it entails correlation, quantum entanglement “does not manifest a fundamental novelty in feature or associated causal power, as it concerns only the value or magnitude of a feature/associated power had by its components [and that] the surprising phenomenon of quantum entanglement should lead” theorists to “be more circumspect” in their assumptions as to how complex systems assemble. Indigenous scientists might bring their own cautions to this caution, in keeping with the intricate, infinite complexities inherent to their knowing of the world that align with

quantum-based understandings. With the advent of quantum theory, Cajete (2000, p. 54)

observes, Western

theoretical physicists and others have begun to realize that the universe has a non-material dimension, a deep spiritual dimension, and an elegant guiding intelligence. ...

They have begun to move from the ready-made and inherently simplistic conception of the universe as a machine to an understanding of it as a “creation in grand process.”

Differences between Indigenous epistemologies and the Western development of OET intertwine with their inter-tensions. From the outset, Western-based approaches to emergence are informed by blinders inherent to Western understandings of the world that reduce; categorize; universalize to its own standards and thereby exclude anything or anyone that is “other” (Aloi, 2021); disconnect humans from nature and natural processes to privilege humans and objectify nature as resource; and disregard metaphysical phenomena. This has informed an historical colonial disregard of Indigenous knowledge and expertise that continues today. As Cajete (2000, pp. 78 & 14) reflects,

the word “science” has only recently been used to depict systems of knowledge that refer to the multidimensional worlds of nature and people's ways or traditions of relationship with the world. Use of “science” by Native peoples contains this type of understanding.

This use to describe the experience and traditions of Native peoples remains controversial given the biases and scientism of some Western scientists. ... Native science is a product of a different creative journey and a different history than that of Western science. Native science is not quantum physics or environmental science, but it has come to similar understandings about the workings of the natural laws through experience and

participation with the natural world. The groundwork for a fruitful dialogue and exchange of knowledge is being created. But it must be a dialogue in which Native cultures have the opportunity to gain as much as they share about their understanding of natural laws.

“Native science,” in both theory and practice, “is used as a metaphor for Native knowledge and creative participation with the natural world, [and has contributed] to an evolving philosophy of science as well as ecological awareness” (p. 14). It “reflects the unfolding story of a creative universe in which human beings are active [participants with their] sensual capacities. It is tied to spirit, and is both ecological and integrative” (p. 14). Indigenous knowledge and ethics determine “the means of access to knowledge, the selection and use of ‘theoretical’ approaches, and ... the tools (methods) for conducting research” (Porsanger, p. 109). Indigenous knowledge and ethics are based in guidelines, or original instructions, that entail a fundamental understanding of and responsibility to “recognition and respect for the equality of all the elements of life on this land. ... Whether it is the growing life of trees, plants, or animals, or whether it is human, all life is equal” (Lyons, 1984, p. 6). As Lyons (1984) continues, “many non-Indians have tried to destroy the original instructions because they view them as detrimental to progress” (p. 6). While Aristotle was conjecturing about natural processes, Indigenous people had already been immersed in their own “careful and detailed” (Pierotti, 2011, p. 17) durational studies through observation and experience for thousands of years; in all likelihood, the British Emergentists would have been blindly disparaging of relational and ontologically emergent understandings from Native science had there been opportunity for such exchanges.

Other differences and tensions between OET and Indigenous epistemologies and research methodologies lie in Western science's fragmented, disciplinary ways of research and knowing.

As Vogel (2012, p. 3) writes,

only in the nineteenth century did scientists adopt the attitude that it wasn't necessary or expected that an investigator be familiar with areas of science in which he or she didn't work. Curiously, that acceptance of intellectual fragmentation arose at about the same time as the very word *scientist*, originally a replacement for *natural philosopher*, which reflected the earlier fragmentation of philosophy itself. (emphases in original)

"The Western science paradigm is predicated on individualism" Cajete (2000, p. 309) writes, in contrast with Indigenous science that

has always been predicated on mutually or reciprocal relationships, or on the communal sensibility expressed in the notion that "we are all kernels on the same corncob." What happens to one happens to all. The concept of individualism, separateness, must give way or be subsumed in the concept of interconnectedness. Another area in which change is necessary is the system of logic used in Western science by which everything ends up being categorized in an either/or, black-or-white fashion. The language of Western science itself is part of this logic.

In the context of emergence, O'Connor (2020) speaks to the limitations of knowing when understandings of phenomena and the world are confined to disciplinary views. The "distinctive taxonomies and laws" of the specialized sciences, he writes,

characterizing astronomical, meteorological, chemical, botanical, biological, and psychological processes, among others [reflect] an effective consensus that the features of

the composed entities they treat do not “float free” of features and configurations of their components, but are rather in some way dependent on them. ... Entities appear to depend in various important respects on their components, while nonetheless belonging to distinctive taxonomies and exhibiting autonomous properties and behaviors, as reflected in their governing special science laws. (paras. 1 & 2)

Disciplinary approaches in Western science analyse, reduce, and objectify rather than consider phenomena as existing in a context of intrinsic interconnection. This Western approach to knowledge-making has been applied to Indigenous knowledge itself: as Johnston et al. (2018, p. 10) write, “Western approaches to analysis fail to respect the relational nature of Indigenous knowledge, by taking knowledge out of the context in which it was shared and reducing it into parts so that it can be further manipulated,” severed, and scattered. Kovach’s (2009) offering of the word *interpretation* rather than *analysis* as a research approach “is more congruent with Indigenous worldviews” (Johnston et al., 2018, p. 10) as it involves and reflects relational accountability and researcher subjectivity “rather than pretending at objectivity” (p. 10). Relational accountability “protects that which is being researched—person, place, concept, animal, whatever—from being objectified” (p. 10). As Barad (2007, p. 91) comments, the Western “distinction between object and subject [feeds] representationalist thinking,” “that the mind perceives only mental images (representations) of material objects outside the mind, not the objects themselves” (Representationalism, 2020, para. 1). This in turn feeds “a system of thought that fixes the world as an object and resource for human subjects” (Bolt, 2004, p. 12).

Until the historical reflexive turn began to influence many disciplinary research practices in the 1980s, addressing “the social construction of everything we once thought of as ‘real’”

(O'Reilly, 2018, p. 212), Western scientists had been largely unaware that their own subjectivities and worldviews are integrated into their research design and outcomes (some continue with this mindset today), oblivious “that we are all situated differently” (Johnston et al., 2018, p. 10) and that situationally-produced knowledge has different relevance across different situational contexts. “Because researchers are constituted by their relationships,” Johnston et al. (2018, p. 11) write, “and their research is the relationship between themselves and the knowledge they are seeking, a researcher must begin by exploring their own location and subjectivities” (see also Wilson, 2008). Relational accountability involves integration of place and a multi-contextual view of time (Lyons, 1984) that can span over multiple human generations on either side of the present time, and entails all “entities, human and non- human, physical and metaphysical” (Johnston et al., 2018, p. 13). As Johnston et al. (2018) summarize,

Indigenous research is about relationships and responsibilities. ... Research needs to be connected in order to be carried out in a good way. ... Owning one's subjectivity in research is critical in decolonizing research, especially for Western academically trained scholars who tend to privilege Western-produced knowledge over Indigenous knowledges. (pp. 14, 16 & 11)

The interplay of similarities, differences, and tensions regarding emergent ontological relations within OET and Indigenous epistemologies and research methodologies support and enhance my interpretations of my ethnographic encounters with the sentient awareness and relations of trees, including tree-human communication, and impacts on Indigenous science that have in turn impacted understandings of the world in general. The descriptive detail within OET regarding the ways elements of phenomena come together in emergent relation helps me better

imagine processes of infinite relationality within the relational ways of knowing that are integral to Indigenous epistemologies and research methods. Conversely, my process of coming to know ever more deeply the complex relationality fundamental to Indigenous epistemologies widens my awareness of the shortcomings of Western science and ideology, and the possibilities OET scholars have to take their philosophizing further, to work with Indigenous scholars and research methodologies, and to expand their holistic understandings and representation of phenomena. Both modes of knowing also further my understandings of biosocial becoming and co-constitution.

### **Plant Science**

In the late 1970s, Anthony Trewavas, the professor emeritus of plant behaviour and intelligence in Scotland who participated in my study, put forward the controversial suggestion (in a Western context) of intelligence in plants based on his research into “how plants perceive signals from their environment and how they interpret those signals which result in changes in behavior” (October 26, 2016; see Trewavas, 1981). He “realized that the signals and behavior, which we easily associate with intelligent behavior in animals ... were effectively identical phenomena going on in plants, but coming out in a different, much slower way” (October 26, 2016).

Trewavas defines intelligence as “adaptively variable behavior during the life cycle of the individual ... profiting from experience, capacity for problem solving ... fulfilled by plants in the appropriate circumstances.” “Oddly enough,” he continued in our interview, “the person who really started a lot of this off was Charles Darwin,” whose plant study books “are little read even by people in the plant area. But they are a wealth of information ... A lot of it is easily seen as intelligent behavior” (October 26, 2016; Darwin, 1880/2009). Delivering a paper in 1908,

Darwin's son, Sir Francis, stated "very clearly that plants were organisms endowed with intelligence" (Mancuso, 2017, p. 25). "Science is often held to represent a cumulative process," Hallé avers, "but alas, this isn't the case: discoveries are made, which the next generation then forgets. Unfortunately, it happens all the time in botany" (Hallé & Patriarca, 2018, p. 69). Additionally, "for centuries, biologists and botanists had purposefully avoided conceptualizing [intelligent forms] of plant behaviour, trying by every means to safeguard the validity of time-honoured categories of 'animals' and 'plants'" (Mancuso, 2017, p. 22). Regarding the intelligence of trees, Mancuso (2019, p. 54) states, they "are extraordinary beings in every respect. You do not become the primary source of a planet's life by chance."

With its largely reductionist, mechanistic stances on biological and botanical understandings, Western traditional and "existing scientific practices were not designed with [nonhuman] interests in mind" (Franks, Webb, Gagliano, and Smuts, 2020, para. 6). For most scientists and philosophers, trees and plants are "indifferent and insensate" (Marder, 2013a, p. 1), rather than conative beings with perception, sentience, intelligence, communication, consciousness, and agency—"all the ways one entity affects another" (Russell, 2018, p. 6). As Myers (2015) encountered during her anthropological study into "what plant scientists made [of] the phenomena of plant sensing," many of them felt it "was blasphemous to suggest that plants had nervous tissues or that neurobiological approaches were appropriate for inquiry into plant physiology" (pp. 35 & 38). Trewavas reflected during our interview that "the notion that plants might be intelligent was still probably anathema—only humans could be intelligent when Charles Darwin was alive and dealing with science" (October 26, 2016). Then and now,

this was always [and still is] a basic problem: that we put the human gloss on everything so that when we want to talk about intelligence, we're really thinking about human intelligence only. That plants don't have a language, they don't speak to us, they don't move when we order them to, then “they're not really alive at all.” (A. Trewavas, October 26, 2016)

As co-writers, Trewavas and Baluška, (2011) consider “plant behaviour [to be] active, purpose-driven and intentional. In its capacity for self-recognition and problem-solving ... it is adaptive, intelligent and cognitive” (p. 1255).

Although contention on the subjects of perception, intelligence, communication, sentience and consciousness in plants remains prevalent (Ginsburg and Jablonka, 2021; Mallatt, Blatt, Draguhn, Robinson, and Taiz, 2020; Sample, 2019), scientific research and public awareness of these phenomena have been accelerating over the past four decades (Gagliano, Renton, Duvdevani, Timmins, and Mancuso, 2012). Prominent scientists in these fields include, Baluška (Baluška and Mancuso, 2020), Calvo (Calvo, Baluška, and Trewavas, 2020), Gagliano (2018), Hallé (Hallé & Patriarca, 2018), Karban (2015), Kimmerer (2013), Mancuso (2017), Simard (2021), Trewavas (2014), and Wohlleben (2016). Ethnographic and Indigenous modes of inquiry and knowledge-making, as well as ontological emergence theory, have the capacity to offer qualitative approaches to understanding trees and plants more holistically, ontologically, relationally, and from the points of view of these vegetal beings. They support qualitative, fluid, and metaphysical approaches to plant science, and echo research in the ontological and nonhuman turns that focuses not on “identifying causal factors in a linear model, but rather with identifications of the becomings in assemblages, the hanging together of affects and agencies,

and the foldings” (Gullion, 2018, p. 104). All three frameworks guiding my study contribute enriching companion understandings to traditional, quantitative approaches to knowing trees and plants. They ask and make space for scientists to be in respectful relationship with their study organisms. My research frameworks in relation to plant science are further discussed in ANO and FWN, while plant science regarding sentience and intelligence is incorporated most significantly into IFT.

As a last question during my candidacy exam, I was asked, “Why an *ethnography* of trees?” Since the idea was not mine to begin with, I cannot say just what the trees who offered it imagined or expected, but I could see that qualitative observation and inquiry with trees and people who live and work with trees could offer insights into the relations and ontologies of trees. As Lien and Pálsson (2019, p. 13) aptly put it,

drawing attention to biosocial relations of ethnographic production allows ethnographers both to grasp the ‘other than human’ in their singular uniqueness and full capacity, and helps to better understand the unfolding reputation of human and other than human communion and collaboration in the complex stream of life.

Trees and other nonhumans can be “participants in ethnographic production on their own terms, and in their own capacity” (p. 13).

### **Tree/Human Communication Findings**

My ethnographic inquiry revealed that many people have had or have ongoing communication experiences with trees. To varying extents, 13 of the 22 formal participants in my study have regular or occasional mutual communication with trees and 20 of them were open to the possibility of communication between trees and humans. Additionally, approximately half of the

informal participants I conversed with regularly communicate with trees. In casual encounters, a few people confided that they communicate with trees and plants, aware that by speaking openly about this they would normally be regarded as “crazy.” The opportunity to engage a single tree alongside one or more people in fieldwork and workshop experiences revealed that each of us received similar metaphysical information from the tree. This confirmed the methods and findings, making them credible, transferable, and dependable. Communication between trees and humans resonates with ontological emergence and biosocial becoming in that new phenomena occur—emerge—in each unfolding present moment “as a continuously changing web of co-dependent relational construction processes” (Santos, 2015a, p. 439).

Although a number of tree/human communication experiences (my own and others’) have been included in my tree talks, ANO and FWN, I have not yet discussed them collectively and as the main focus of a talk or piece of writing. Several themes from these experiences emerged and overlapped through my fieldwork, including the relaxing sensation of welcome (usually) when asking trees for permission to connect with them; the vast intelligence of trees; different personality traits, likes and dislikes of individual trees; mutual healing between trees and humans; desire on the part of trees for collaboration between trees and humans for planetary health and well-being; emotions generally not being held onto by trees, in particular that they do not hold a grudge against humans for humans’ abominable treatment of the Earth, nonhumans, and trees themselves; trees’ awareness of the people who live with and around them, and the machinery used to cut trees down; and unconditional love from trees. Each time Tobacco was offered to trees, there came a palpable sense of peace, acknowledgment and acceptance.

For this Synthesis Paper, I add an experience of communication with trees to those

included in my other dissertation components. On the cover of the nonfiction book, *Big lonely Doug* (Rustad, 2018), is a 66-meter tall Douglas-fir standing alone in a clear-cut expanse on Vancouver Island, British Columbia. The book revolves around this tree and a number of human perspectives related to its now exposed, aberrant existence, including the story of the forester who tied a green tape around this approximately 1000-year-old tree to prevent it from being cut down. I finished reading the book late one night with the intention of returning to it later to attempt to tune into “Big Lonely Doug” (BLD), named by Ancient Forest Alliance founder, Ken Wu. Communication with trees and nonhumans does not have to be in person—bioenergy fields and telepathy transcend boundaries humans tend to associate with the here and now. As I learned from several of my research participants, photographs work just as well, if not better, than being with a nonhuman in person because there are fewer sensory distractions. As I put down the book, I was surprised to feel BLD pushing into my field of awareness. I resisted this because the timing was “not right” for me. But my resistance was short-lived before a gush of communications came forth that I raced to keep up with in my notebook. I experienced BLD’s communiqués in the forms of language, sound, and bodily sensations as BLD initiated information and responded to questions from me. I was surprised by what BLD relayed, including that, rather than loneliness, BLD feels embarrassed and exposed and has more care for its<sup>9</sup> buddies and community lost than about the spotlight and attention it receives. BLD has survivor’s guilt and feels “stupid. Wisdom for nothing—can’t share it. No one listens” (fieldnote, November 28, 2018). When our conversation ended, I felt exhausted, light-headed, surprised, and in an altered “spaced out” state.

### Synthesized Discussion

As a fluid, emergent, entangled, diffractive bundle, the interdisciplinary collection of my research methods, methodologies and theoretical frameworks supports and reveals findings that offer and advocate for (re)newed ways of being with trees and nature, for moving away from the limitations and fragmentations of modern, anthropocentric perspectives based in Western paradigms, and for moving toward increased environmental empathy and holistic interactions with trees and nonhumans. Environmental empathy extends respect and consideration for the interconnection and conation of all beings and holds “the notion that nature should be protected because it deserves protection for its own sake” (Berenguer, 2010, p. 113).<sup>10</sup> Empathy, entailing “unity and connection” (Digitalis, 2019, p. 5), is “an emotional response congruent with the perceived welfare of another” (Berenguer, 2010, p. 114) through “the action of understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts, and experience of another of either the past or present [or future] *without having the feelings, thoughts, and experience fully communicated in an objectively explicit manner*” (Empathy, 2015, para. 2). I emphasize the end of this definition because most ontological aspects of nature manifest on planes unobservable by humans. As Kortenkamp and Moore (2001) note, it is “difficult to take the interests of the environment into consideration if those interests and the effects on them are either not known or not salient” (p. 268).

### Research Questions

In brief, summarizing response to my first research question as to how tree ontologies can be represented through ethnographic inquiry (discussed further in ANO and FWN), the traditional tenets of ethnography (see Yardley and Bishop, 2008) as “social practice concerned

with the study and representation of culture” (Van Maanen, 2011, p. 150) can be explicitly engaged and expanded to open inquiry and (re)presentational practices to tree and nonhuman life-ways, needs, community engagement, relationality, and perspectives. Nonhuman worlds can be included in ethnographic pursuits to understand “social life as the outcome of the interaction of structure and agency through the practice of everyday life; [and] social life as it unfolds, including looking at how people [nonhumans] feel [and exist], in the context of their communities” (O’Reilly, 2005, p. 1). With mindful, respectful integration, Indigenous research methodologies also support knowledge-making with nonhumans. Indigenous research methodologies and ontological emergence theory make space for the lively inter-responsive, intra-active, relational nature that is inherent to the conation of all beings and which is the essential “stuff” of ethnography. Through extended engagement with the central “processes of intersubjectivity, expanding hermeneutic horizons, and sustained reflexivity,” ethnographers are positioned to “offer insights of potential empowerment” (Whitten and Whitten, 2013, p. 256) for nonhumans. This includes explicitly and reflexively negotiating the challenges that researchers must wrestle with regarding the traditions and fixities of representation and representationalism that prescribe, order, and predetermine what can be known and thought about the world (Bolt, 2004). Researchers must be ready, willing and open to change in their perspectives, approaches, and ways in which they present their research with nonhumans.

My second research question as to what an ethnography of trees can reveal about humanity shows up historical aspects of Western and modern treatments of nonhuman worlds that people with alternative views and approaches have been long aware of (discussed in ITF and FWN). Western worldviews evolved from “animistic, relational” sensibilities with “explicit

recognition of kinship between [all] living things” (Hall, 2011, pp. 17 & 18), to human-centered positivist, patriarchal, hierarchical, reductionist, and consumption-based standpoints. This cultural shift was influenced intentionally and by lack of attention through arrogance and ignorance in systems of religion, political power, imperialism, colonialism, economics, science, education, and materialism, leaving “epistemological genocide” (Jain, 2015, 05:30) in their wake. By example, the ancient, formidable, “elite educated class of the Celtic culture” (Beresford-Kroeger, 2019, p. 33), with roots in Ireland that had spread through Europe to the North Coast of Africa and into central northern China by “the time of Christ” (p. 33), the Druids believed “the living world was filled with soul, [from water to mountains, grass,] animals and insects. All of life was connected by this soul and, because of that, life in all its forms needed to be protected” (p. 226). Druidic culture was devastated by the Roman Empire, Christianity, and English occupation (Beresford-Kroeger, 2019; Blackmore, 2019).

Many scholars link the human transition from hunting and gathering to agriculture and herding that began ten thousand years ago to our history of “environmentally destructive patterns [as there was] a fundamental shift away from knowing the natural environment to controlling and changing it” (Poncelet, 2014, p. 214). The propulsion of rational thought that emerged through Plato and Aristotle (see Bolt, 2004; Hall, 2011; Innis, 1949; Marder, 2013b; Pierotti, 2011) disrupted kinship with nonhumans, and justified exploitation of both nonhumans and humans. As Bolt (2004, pp. 19 & 20) explains Heidegger’s view of this historical shift, “in the pre-Socratic Greek world, man [was] looked upon [engaged] by what-is,” which was presence. “In this conception, thought and being were not separated,” contrasting the reversal that occurred in the modern epoch wherein “man” became “the one who looks upon [engages and acts on] what-is.”

The biblical message of Genesis, based in agriculture and pastoralism, “for humans to conquer, tame, and dominate nature has been seen in the world of God for much of the history of Western culture” (Poncelet, 2014, pp. 233). Although a myth, it has had centuries of influence “on our unconscious beliefs, thinking, attitudes, and behaviour [and] is still very much with us” (p. 232). The long-standing assumption of the church has been “that only human beings have intelligent souls, and that the other animals, to say nothing of trees and rivers, were ‘created’ for no other reason than to serve humankind” (Abram, 2017, p. 8). Descartes’s split of the mind and body four hundred years ago further instilled binaries such as nature/culture and human/nonhuman into Euromodern worldviews (Guillon, 2018). “As Western cultures transitioned from medieval Christianity through the Enlightenment” period of the 1700s, writes Guillon (2018, p. 40), “positivism replaced reliance on the church for knowledge. Scientists became the priests of knowledge.” All of these influences led to “the development of anthropocentric philosophy and a science that [legitimizes] the oppression of nature” (Cajete, 2000, p. 30), as well as a cultural stance that “unobservable dimensions” (Mathews, 2006, p. 89) do not exist in the world. These fragmenting dualisms are innately foreign to ancient and Indigenous worldviews. Einstein referred to them as an “optical illusion of consciousness” (see Haymond, 2018, para. 10).

Colonialism, write Moran, Harrington, and Sheehan (2018, p. 73), began “as an absolutely superior (male) self-regard driven by the search for resources, and it became a philosophy based in materially rewarding disregard for human, biological, and environmental diversity.” Now,

human influence over environments defines the Anthropocene and so the conception of being human is one that mirrors the ontology of the West. This ontology is the

assumption that humans must interfere with natural systems to survive and that all human beings automatically have authority to change environments to reap benefit and reward.  
(p. 74)

The beginning of the Anthropocene, Lewis and Maslin (2015) suggest, started in either 1964, when radionuclide levels peaked in the atmosphere, or in 1610, the year that corresponds with increased colonial inroads and “a significant and measurable dip in carbon levels in the earth’s atmosphere that was bought on by the mass population decline from the genocide and ecocide that followed European arrival in the Americas” (McManus, 2018, p. 47).

Awareness of these oppressive, ruinous aspects of Western history and their impacts on ways modern humans perceive, represent, and behave in relation to nonhumans (and each other) accentuates and empowers our roles and responsibilities as humans living in kinship, infinite interrelations and dependence with nonhuman worlds to be empathetic to nonhumans, to honour their intelligences, and to “protect life and all its manifestations” (Lyons, 1984, p. 6). At the time of writing, an example of the general ongoing disregard for nonhumans is the removal of Eucalyptus trees sacred to local Aboriginal people in Australia by the Victorian government, additionally atrocious at a time when coronavirus pandemic lockdown measures prevented people from defending the site. These 350- to 800-year-old “living entities with significant historical, cultural and spiritual value and meaning” (Malins, McKinnon, Kruger, and Balla, 2020, para. 3), were chain-sawed to make space for a highway duplication route of 12.5 kilometres (Perkins, 2020) “that will save drivers two minutes travel time” (Malins et al., 2020, para. 8). From the lens of his long-time consideration of Yew trees, Paul Greenwood emphasized during our interview in England for my research that “our ancestors wouldn't give a second

thought about” the consciousness or intelligence of trees because “they had no doubt that they were,” or about our relationship with them. “Native people in, say, Australia ... don't doubt that trees talk. ... How can they be so misguided or mistaken about what they believe in when they've got fifty, sixty thousand years of history of living in Australia?” (see Moran et al., 2018).

Greenwood noted that the increasing evidence of anthropogenic environmental and climate impacts has to spur overcoming

the programming of the Western mindset—which shows that we're gonna have to appreciate the world around us in a ... much, much more deeper way, the way we used to appreciate it, or else we're gonna do so much damage that we'll reach a crossing point and we can't go back again. We'll reach that tipping point. And then it'll be, “Oh dear, woe is me, we should've, we should've, we should've...” Sorry: “It's too late.” (October 24, 2016)

### **Dissertation Format**

The Doctor of Social Sciences program at Royal Roads University did not yet have a formalized option for students to produce a dissertation by portfolio rather than a dissertation monograph at the time of my candidacy exam in early 2016. My dissertation was considered “alternative” because its components consisted of a 30- to 90-minute ethnographic film and two journal articles, one each for methodologies and outcomes. As I worked toward these three target components, several opportunities emerged for writing and speaking about my research in academic and public venues, as well as consultancy (listed in Appendix A).

By the end of the seven years stipulated for doctorate completion, I had spent ten months dedicated to travel and fieldwork, followed by 9.5 months cataloguing the approximately 120 hours of film and audio fieldwork material in preparation for the edit of the film. This involved

reviewing and linking the verbatim interview transcriptions, for which I had hired a nonprofessional, to the video and audio material in the transcription texts and footage catalogues, as well as making footnotes on key points and additional research stemming from the interviews. Another seven months was spent listening through and making notes on the interviews as data. My literature review was ongoing. These stages provided different, iterative processes of data interpretation and intertwined with the writing for my dissertation. I put the film on hold, completed and submitted the methodologies manuscript for publication with *Qualitative Inquiry*, and commenced writing the outcomes manuscript.

Meanwhile, the growing list of other activities revealed I had surpassed the requirements indicated for the dissertation by portfolio. With my doctoral studies window closing, I was advised to select three components and to write the dissertation Synthesis Paper. Although disappointed I had not completed all of what I set out to do and would not have a film to share with my Dissertation Supervisory Committee, I realised my doctoral trajectory had been in line with the methodologies and methods I was using and advocating for in my research. My doctoral path was a processual, "experiential journey" (Aikenhead and Michell, 2011, p. 70) aligned with Indigenous and embodied ways of "coming to know" (p. 69; Cajete, 2000; Monaghan, 2006). My inquiry was responsive to emergent harmonious circumstances and fluid processes toward ever-unfolding "wisdom-in-action" (Aikenhead and Michell, 2011, p. 70) during the time of my research rather than unwavering knowledge-generation as destination endpoints. My process created a holistic research engagement and entanglement with the world.

The three dissertation components are discussed below, with links to their online sources provided in the endnotes. The writings themselves were sent as separate attachments to the

Dissertation Supervisory Committee and External Examiner for review. I am currently choosing to write and present my research simply and traditionally within established Western academic forms because the radical metaphysical nature of my research runs the risk of being dismissed. Writing in a way that factually presents what transpired in a straight-forward manner that is understandable by many readers, some of whom might struggle with and resist unconventional presentations, is important for reaching as many people/scholars as possible to inform and support their own connection with trees, plants and other nonhumans. For conventional readers, presentations in other styles might detract from or obscure their understanding of the reality of the metaphysical findings. I want to avoid alienating readers and/or creating an impression of anthropomorphizing. In (re)presenting trees, it is important to indicate their messages as they relay them. Moving forward with my research, I might use e/affective, less conventional ways of presenting tree/human communication experiences that align with the values and goals of my research. As Denzin (2018) indicates, there is a 40-plus-year history of experimental, performative and “narrative genres connected to ethnographic writing [that] trouble the edges between text, representation, criticism, and personal experience” (pp. 673 & 674). Perhaps later I will find another, different yet appropriate form of (re)presentation that is accessible to scholars in all disciplines.

### **Journal Article**

The keystone component of my dissertation is the solo article “Approaching nonhuman ontologies: Trees, communication, and qualitative inquiry” (Abbott, 2021a),<sup>11</sup> written for my original set of dissertation components. It was submitted to *Qualitative Inquiry*<sup>12</sup> on October 7, 2020 and conditionally accepted November 20, 2020. The revised manuscript addressing

reviewer suggestions was delivered December 4, 2020 and accepted for publication December 12, 2020. I am grateful for the reviewers' support and introduction of new material to my research. The article was published online on March 9, 2021.<sup>13</sup>

Abstract: Consideration of trees has historically been confined to disciplinary, quantitative perspectives embedded in botany, earth sciences, resource management, environmental sustainability, and sustainable development wherein trees are largely viewed as senseless, bio-mechanical matter to be controlled and used for human consumption and economic gain. In this article, I reflect selectively on methodologies and methods I used in a broader, interdisciplinary project to study the sentient, intelligent relationality of trees as agentic, conscious, innovative entities embedded in unique, community-based lifeways. My research framework integrated Indigenous research methodologies, public ethnography, ontological emergence theory, plant science, philosophies of plant and nonhuman knowing, interspecies communication, and filmmaking. Herein, I focus on how perspectives and approaches based on qualitative, ethnographic inquiry and Indigenous epistemologies support and broaden research, (re)presentation, and engagement with trees and other nonhumans. Methods I discuss include the practices of cultivating tree/human communication and fostering human sensitivity and embodied knowing. (p. 1)

My rationale for selecting *Qualitative Inquiry (QI)* as the venue for this article was considered in relation to *Qualitative Research*. Both publications are eminent, academic peer-reviewed Sage Journals focused on current methodological issues in qualitative social science and humanities research. *Qualitative Research* provides a “forum for the discussion of research

methods [and] papers with a methodological focus, discussed in relation to specific empirical studies and research problems and papers raising philosophical, theoretical, historical or ideological debates about qualitative research” (“Journal description,” 2020b, para. 3). The forum for *QI* is explicitly interdisciplinary, with “lively dialogues [and] the latest developments in qualitative methodology” (“Journal description,” 2020a, para. 1) that “transcend disciplinary ... and paradigmatic boundaries” (para. 4). Its articles may “experiment with manuscript form and content and focus on methodological issues raised by qualitative research rather than the content or results of the research” (para. 3). Particular to the focus of my research, *QI* is open to “advances in specific methodological strategies or techniques ... critical treatments of qualitative or interpretive work, practical applications of qualitative research, [and] theoretical discussions on the philosophical bases of qualitative traditions” (para. 3). Although either journal is a good match for my manuscript, the scope and types of recent articles in *QI* align more strongly and progressively with the challenges and offerings of my research with regard to boundaries and traditions in academic disciplines, epistemologies, ontologies, paradigms, methodologies, methods, and research with nonhumans.

### **Elective Dissertation Components**

One of the writing opportunities to emerge during my doctoral journey was an invitation from my supervisor, Phillip Vannini, to contribute a chapter to his edited book, *The Routledge international handbook of ethnographic film and video*. Writing for this chapter, “Filming with Nonhumans” (Abbott, 2020),<sup>14</sup> provided the first literary venue for me to sink into, explore, and articulate concepts and findings that had emerged through my research. The abstract written by and appearing on the publisher’s webpage for my chapter is as follows:

Ethnographic film tends to be situated in naturalistic, uncoerced portrayals of subject matter, so such irreverence would likely not enter researchers' minds let alone their research designs. In recent decades, filmmakers and audiences have grown more demanding for humane treatment of animals and ecosystems. Ethnography and ethnographic films evidence relational knowledge. Filmmaking techniques, or methods, involve the use of filmmaking equipment during production, or fieldwork, in ways reflective of specific filmmaking styles that are shaped through the edit of a film. The poetic style of documentary film positions aesthetics, nonlinear structuring, and untraditional representation as central to meaning and expression. Just as developments in the portability of media technology in the 1950's and 1960's enabled filmmakers to leave the studio and move into the worlds people inhabit, recent developments in technology give researchers and filmmakers opportunities to probe and mediate understandings of nonhuman worlds. (Taylor & Francis Group, n.d.)

This abstract is comprised of sentences extracted from my writing and does not relay the full picture and content of my chapter that advocates for mindful awareness in ethnographic and filmic research with nonhumans. The abstract I wrote is as follows.

The history and traditions of ethnographic and filmic approaches to research, methods, and representation have largely been human-centered. This chapter offers ways to reconsider anthropocentric approaches for holistic research with nonhuman participants in order not to separate nonhumans from their known spaces and ways of being, or disregard their needs and realities as individuals and as community. Western and Indigenous worldviews, the treatment of nonhumans in the history of film, and potentials

and limitations of different filmmaking styles are touched upon. Analysis of the films *Mountain*, directed by Jennifer Peedom, and *Sea of life*, directed by Julia Barnes, provide examples of representations of nonhumans in ethnographic film. Developments in technology that enable researchers and filmmakers greater opportunities to probe and mediate understandings of nonhuman worlds require critical, ethical, and reflexive attention to the impacts these technologies have on nonhuman worlds, and ways they are represented. It is vital that researchers first take time to make connections with nonhuman participants. Heartful intention, embodied engagement, intuitive knowing, and direct communication with nonhumans offer mutuality in relations and constitute a practice that requires gentle patience as we repattern toward re-knowing.

The second elective component of my dissertation, also a book chapter (ITF), emerged through a presentation I contributed to the interdisciplinary *Evolving the Forest* conference at the historically progressive Dartington Estate in Devon, England, co-hosted by art.earth, the Royal Forestry Society, and Timber Strategies in June 2019. My talk, “Rethinking the forest: Tree sentience, relationality, and environmental empathy,” followed Simon Leadbeater’s critical review of science-based literature and speculation as to the possibility that recent discoveries of tree interrelations could “rekindle our ancient sense of reverence ... for the trees themselves and their sacred groves” (Leadbeater, 2019, p. 8). Our paired talks for the *Sentience and Ethics* session became a conference sensation and we felt compelled to write something together. From the beginning, Leadbeater insisted I be lead author on our joint article, which was initially planned for the *Quarterly Journal of Forestry (QJF)* published by the Royal Forestry Society.

After two rounds of development beginning in September 2019 and one set of editor notes, the *QJF* team felt our article would better fit the book publication spawned by the conference, also titled *Evolving the Forest (ETF)*. Leadbeater and I agreed to this. As lead author, I created the first outline and significantly reshaped and added to the manuscript after Leadbeater sent several pages of writing for the first draft. After my work on this draft, the general structure and content were determined. We then sent editing suggestions back and forth to build out and polish the paper. I finalized both drafts prior to sending them to *QJF*. I also finalized our work for the *ETF* chapter after minor notes from one of the editors and successfully argued against the suggestion to remove some content because doing so would have significantly compromised the flow and purpose of our chapter. I led the review of the proofs for *ETF*. Leadbeater and I worked congenially to create a piece that thoroughly integrates our ideas and contributions. He commented on my contribution in an email written just before the second draft went to *QJF*: “I almost felt a little tearful reading this. It has been a while since my last read, and the depth and tenderness of your thinking really struck home; feel very chuffed if slightly fraudulent being involved” (personal communication, April 22, 2020). Although touched by his last statement, I disagreed: the chapter would be very different if we had not written it together. As per the American Psychological Association’s (2020, para. 2) guidelines for responsible writing, I led the writing process to publication and contributed the most to our chapter:

Authorship credit should reflect the individual's contribution to the study. ... The primary author assumes responsibility for the publication, making sure that the data are accurate, that all deserving authors have been credited, that all authors have given their approval to the final draft; and handles responses to inquiries after the manuscript is published.

In addition to reflecting on themes outlined in the following abstract for “If a tree falls... Perspectives on sentience” (Abbott and Leadbeater, 2020),<sup>15</sup> our chapter includes insight into our experiences representing the marginalized topic of tree sentience at a conference largely populated with foresters based in traditional Western paradigms.

Abstract: Through a lens of perspectives for and against accepting the sentience of trees, this chapter reflects on different understandings of trees and woodlands as alive or inert; deforestation and climate change; the role of forestry in its relationship with woodlands; thought patterns; and concepts of interconnection. (p. 177)

### **Conceptual Links Between Dissertation Components**

The themes of my dissertation research are present in these written works to various extents and at times overlap in detail and similar citations from my literature review and excerpts from my interviews and fieldnotes. The most overlap occurs between ANO and FWN in their social science discussions to un-trouble ethnographic practice with and (re)presentation of nonhumans. FWN includes a deeper look at film history and production in relation to nonhumans in general alongside ethnography and ethnographic film. ANO goes into depth on the theoretical and methodological frameworks for my study, my rationale for preferring the term “nonhuman,” research methods, and a recount of an experience of tree/human communication from the field. It provides an overall snapshot of my research with trees. ANO and FWN include different examples of human communication with trees and nonhumans from my fieldwork and literature review. The approach and content of ITF aligns more with environmental humanities writing and addresses general forestry practices and thinking that have contributed to massive deforestation,

environmental degradation, species loss, and climate change. It also incorporates some of the growing findings from science on plant intelligence, perception, sentience, and consciousness.

### **Conclusion**

It has been an honour, a privilege, deeply profound, devastating at times, joyful, and paradigm-shifting to engage with all aspects of my study, foregrounding the sentience, relationality, and expansive knowing of trees themselves and our ability as humans to know with them more deeply. To come to know in an embodied way that trees are similar to humans with their unique propensities and perspectives, that they are beyond us in their intelligences and entangled awareness with their living spaces and communities, that trees and humans can communicate, and that trees want to collaborate with humans changes everything. To know that, despite the ways Western-minded humans have ravaged the natural world, trees continue to be with us in unconditional love is heart shattering. When I began my research in early 2015, there were few materials for my literature review on understandings of trees and plants as sentient aware beings, let alone tree/plant/human intercommunication. Now, since 2016, a plethora of literary materials, films, podcasts, public and academic talks and conferences on tree and plant intelligence and communication have emerged. I am grateful to have participated in this advocacy movement through an invitation to help organise and speak at a conference in June 2021 called *Toward a New Way of Being with Plants* ([www.beingwithplants2021.com](http://www.beingwithplants2021.com)) while finishing my dissertation. Almost 1700 people from more than 50 countries, including 32 speakers and many sponsors, registered for the 2-day conference and the sessions are now freely available online. The Western world is starting to “wake up,” wanting to know about the alive entanglements of trees and plants in their own right, with their communities of other nonhumans, and with us humans. “The

thickness of these relations,” Myers indicates, “teaches us the full meaning of the word *interimplication*” (Bunnell, 2020, para. 10, emphasis in original). I join Myers’s call “for a radical solidarity project” (para. 10) with trees and the vegetal world that a growing number of critical plant studies scholars, scientists, and non-academics align with. With patient mindful intention, we can un-condition our modern perspectives and behaviour to approach and engage the uniqueness of trees and nonhuman worlds with honour, respect, empathy, reciprocity, joy, and love, to know them in relation with our unique and de-centered humanity. We can come to (re)know that our practices of knowing and action create, to requote Barad (2017, p. 91), “*specific material engagements that participate in (re)configuring the world.*” In this mindfulness, we move in empathic relations with the planetary environment we live in and, by extension, with our human selves for we, too, are nature, of our mineral and watery environment, filled with nonhuman communities.

### Endnotes

<sup>1</sup> This description of my research is similar to that which appears in my journal article, “Approaching nonhuman ontologies: Trees, communication, and qualitative inquiry” (Abbott, 2021).

<sup>2</sup> Turtle Island is “an expression for North America used by some Indigenous peoples” (Windchief et al., 2018, p. 540).

<sup>3</sup> Discussion of my connections to Indigenous heritage, culture, and my research topic on trees includes aspects that similarly appear in “Approaching nonhuman ontologies: Trees, communication, and qualitative inquiry” (Abbott, 2021).

<sup>4</sup> Formal and informal interviews, tree visitations, workshops, and tree talks were situated in British Columbia, Alberta, Saskatchewan, California, New Jersey, Maryland, Pennsylvania, Florida, New York and Washington states, the Bahamas, Scotland, England, Italy, Sweden, and Ecuador. Ontario and Spain were represented via participants from these regions.

<sup>5</sup> *Deva* is Sanskrit, meaning “being of light or shining one.” Dorothy MacLean defined a deva as “a formless energy field,” “an intelligence that *informs* the forms that we see on a physical level” (McAllister, 2018).

<sup>6</sup> “Passing Over is the traditional way of speaking about death. ... ‘There Is No Death there is just a change of form’” (Geniusz, 2015 p. 21, quoting Keewaydinoquay Peschel).

<sup>7</sup> Phillip Vannini and I (2018) outline the features of public ethnography in a section that drew heavily from my doctoral research proposal for our co-authored chapter, “Going public: The reach and impact of ethnographic research.” Much of this paragraph directly quotes, refines, rewords, and/or restructures our discussion.

<sup>8</sup> Throughout its history, the principal concept of emergence, O’Connor (2020, Introduction, para. 3) indicates, conjoins the “twin characteristics of dependence and autonomy, [mediating] between extreme forms of dualism, which reject the micro-dependence of some entities, and reductionism, which rejects macro-autonomy”

(emphases in original). “Accounts of the dependence at issue” he writes, “may appeal to relations of composition, supervenience, realization, grounding, or causation. Accounts of the autonomy at issue may appeal to fundamental or non-fundamental novelty of powers, properties, forces, laws, or effects; irreducibility; non-aggregativity; or non-linearity” (para. 7).

<sup>9</sup> Along with Morton (2019), I acknowledge the trouble with anthropocentric, assumptive, and limiting pronouns.

<sup>10</sup> Numerous studies have demonstrated the effect of empathy on improving peoples’ “environmental attitudes and behaviors” (Berenguer, 2010, p. 116; see Berenguer, 2007; Dovidio, Allen and Schroeder, 1990; Kortenkamp and Moore, 2001; Schultz, 2000; Shelton and Rogers, 1981).

<sup>11</sup> Open access link to “Approaching nonhuman ontologies: Trees, communication, and qualitative inquiry” (Abbott, 2021a): doi.org/10.1177/1077800421994954 or <https://journals.sagepub.com/doi/full/10.1177/1077800421994954#articleCitationDownloadContainer>

<sup>12</sup> Information about *Qualitative Inquiry* can be found at <https://journals.sagepub.com/home/qix>.

<sup>13</sup> Submission requirements for *Qualitative Inquiry* are located at <https://journals.sagepub.com/author-instructions/QIX>

<sup>14</sup> Link to *The Routledge international handbook of ethnographic film and video* for “Filming with Nonhumans” (Abbott, 2020): <https://www.routledge.com/The-Routledge-International-Handbook-of-Ethnographic-Film-and-Video/Vannini/p/book/9780367185824>

<sup>15</sup> Link to the book, *Evolving the Forest*, for “If a Tree Falls... Perspectives on Sentience” (Abbott and Leadbeater, 2020): [https://artdotearth.org/product/evolving-the-forest/?fbclid=IwAR0TyTbvSwDFWpSGHT7dcmTbl-c3IfTe6zu\\_Hw7JBTikhi5UrEuxSONk](https://artdotearth.org/product/evolving-the-forest/?fbclid=IwAR0TyTbvSwDFWpSGHT7dcmTbl-c3IfTe6zu_Hw7JBTikhi5UrEuxSONk)

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### Appendix A: Research-related Activities (2018-2021)

The following activities were conducted in association with my doctoral research.

#### Journal Article (peer reviewed)

Abbott, S. (2021). Trees, ethnography, Indigenous methodologies, film: Methodological approaches to nonhuman ontologies. *Qualitative Inquiry*, 1-3.

#### Book Chapters

Abbott, S., & Leadbeater, S. (2020). If a Tree Falls... Perspectives on Sentience. In R. Povall, S. Lloyd, & J. Ralph (Eds.), *Evolving the forest* (pp. 175-182). Kingsbridge, UK: art.earth Books.

Abbott, S. (2020). Filming with nonhumans. In P. Vannini (Ed.), *The Routledge international handbook of ethnographic film and video* (pp. 224-233). London, UK: Routledge.

Abbott, S., & Vannini, P. (2019). After the fine cut: Disseminating video-based research. In S.W. Kleinknecht, L.K. van den Scott, & C.B. Sanders (Eds.), *The Craft of Qualitative Research: A Handbook* (pp. 358-364). Toronto: Canadian Scholars' Press.

Vannini, P., & Abbott, S. (2019). Academics writing for a broader public audience. In P. Leavy (Ed.), *The Oxford Handbook of Methods for Public Scholarship* (pp. 603-622). New York: Oxford University Press.

Vannini, P., & Abbott, S. (2018). Going public: The reach and impact of ethnographic research. In P. Leavy (Ed.), *Handbook of arts-based research* (pp. 689-704). New York: Guilford Press.

#### Professional Presentations (academic and public)

2021 (forthcoming) "(Re)planting Tree-Human Relations: Respect, Reciprocity, Communication, Collaboration," *Uprooting the Anthropocene: (re-)centring trees in tree-human relationships* conference, The Oxford Research Centre in the Humanities, University of Oxford, July 22 [online].

“Conversations toward More-Than-Intellectual Modes of Knowing with Vegetal Beings,” co-presentation with Alice McSherry, *Towards a New Way of Being with Plants* conference, University of Minnesota, June 17 [online].

Link to view recording:

[https://www.youtube.com/watch?v=Lwufpydkbcs&list=PLOvpukW7AV5CoTp9kYTc83BT5p\\_Tu\\_5Wd&index=4](https://www.youtube.com/watch?v=Lwufpydkbcs&list=PLOvpukW7AV5CoTp9kYTc83BT5p_Tu_5Wd&index=4)

“Approaching Nonhuman Ontologies with Dr. Sarah Abbott,” interview with byron murray for *to know the land* podcast/radio CFRU 93.3fm, University of Guelph, June 14.

Link to interview: <https://www.toknowtheland.com/podcast/ep161>

“The Giving Tree as Misguided Heartswelling: A critical consideration of Seth Silverstein’s children’s book and the spirit of reciprocity,” *Living Heritage in Saskatchewan: A Sharing Series*, University of Regina, April 21 [Online].

Link to view recording: <https://www.youtube.com/watch?v=QU5IGU0CCTA>

“A Change of Focus: What Happens When Trees Speak,” *MAP Presentation Series*, Faculty of Media, Art, and Performance, University of Regina, March 26 [Online].

- 2020 Panelist, “Trees for Life,” in celebration of Municipal Tree Appreciation Day, Royal Commonwealth Society - Vancouver Island Branch, Victoria, British Columbia, November 1 [Online].

Link to view recording: [https://www.youtube.com/watch?v=HS-i-\\_Kpq8w](https://www.youtube.com/watch?v=HS-i-_Kpq8w)

Guest Speaker along with Monica Gagliano for “Plant intelligence and plant communication” conversation series as part of *Say my name and I will tell you my story*, a commissioned work by artist Evgenia Emets, curated by Inês Valle, for The CERA PROJECT, Lisbon, Portugal, October 29 [Online].

Link to view recording:

[https://www.youtube.com/watch?v=WJo9rffl8HA&t=6542s&ab\\_channel=EvgeniaEmets&fbclid=IwAR2fVVR3xhLXuOu8not\\_DO0AnNkM56UT8s2Hf6XtQwXDzUgWxQBtklv8fn0g](https://www.youtube.com/watch?v=WJo9rffl8HA&t=6542s&ab_channel=EvgeniaEmets&fbclid=IwAR2fVVR3xhLXuOu8not_DO0AnNkM56UT8s2Hf6XtQwXDzUgWxQBtklv8fn0g)

(Postponed) “Trees and Humans: Vulnerabilities in Equitable Relations and Interspecies Communication,” *Clashing Vulnerabilities* conference, hosted by Engaging Vulnerability, Uppsala University, Uppsala, Sweden, May 13-14.

“Tree Talking and Collaboration: Toward Restoring Equitable Relations and Earth’s Natural Systems” in the session “Can the more-than-human speak? Other ways of knowing in interspecies communication,” American Association of Geographers Annual Meeting, Denver, Colorado, April 6 [Online].

Link to view recording:

<https://www.youtube.com/watch?v=-IrpklC1zaE&feature=youtu.be>

- 2019 Response to keynote address by Sandra Semchuk, Telling Difficult Stories: Local / National / Global, Graduate Mini Symposium, Faculty of Media, Art, and Performance, University of Regina, Regina, Saskatchewan, October 7.

“Indigenous Methodologies for an Ethnography of Trees,” *Indigenous Research Showcase 2019*, University of Regina and its three federated colleges, First Nations University of Canada, Campion College, and Luther College, Regina, Saskatchewan, September 26.

“Tree Talking: Vulnerability in Nonhuman Inquiry and Representation,” *Keeping it Honest: Vulnerable Writing* conference, hosted by Engaging Vulnerability, co-organised with the Nordic Wittgenstein Society, Uppsala University, Uppsala, Sweden, August 23.

*Secret Gardens Tour*, New Dance Horizons, Regina, Saskatchewan, July 14.

“Rethinking the Forest: Tree Sentience, Relationality, and Environmental Empathy,” *Evolving the Forest* conference, art.earth, Royal Forestry Society and Timber Strategies, Totnes, Devon, England, June 21.

“Provoking (re)newed ways of knowing trees and nonhumans,” *Being and Becoming Experienced: Provoking Curriculum 2019* conference, Canadian Association for Curriculum Studies, University of Regina Centre for Teaching and Learning & Faculty of Education, Regina, Saskatchewan, March 16.

2018 *Mitchif Medicines Retreat for Dancers*, The Crossing, near Batoche, Saskatchewan, September 3.

*Secret Gardens Tour*, New Dance Horizons, Regina, Saskatchewan, July 15.

Guest speaker, ART 290AJ: Plants in Contemporary Art: Uses, Reflection and Interpretation, Department of Visual Art, University of Regina, Regina, Saskatchewan, June 26.

## Film

*gestures toward Plant Vision* (10:08, colour, stereo, Canada/Italy, 2021)  
www.sarahabbott.ca

Synopsis: Perception and intelligence in plant life has been gaining scientific attention and recognition in recent decades. *gestures toward Plant Vision* offers a meditation on how plants might visually perceive their worlds and inspires viewers to consider other ways trees and plants, in all their varieties, might biologically create images to see in stillness, motion, layers, colours, light, and multiplicity. The film’s audio in turn invites consideration of how plants might be aware of and perceive sound in their locations, and includes contemplation on the hypothesis of plant vision by Paco Calvo, a leader in philosophy of plant neurobiology, behaviour and signalling, and Principle Investigator of the Minimal Intelligence Lab at the Universidad de Murcia, Spain. Once the human is finished speaking, the quiet simplicity of the film makes space for the plants.

Imagery and sound for the film were collected and created at the Workshop on Art, Nature, and Technology 2016 led by plant scientist Stefano Mancuso and held at the garden home of Daniel Spoerri in Tuscany, Italy.

## Consultancy

Environment and Nonhuman Advocacy Consultant: *Monahan* (working title), Artist and Team Lead, Laura Taler, public art project for Kanata South Link – Monahan Wetlands Complex, Ottawa, Ontario. Proposal stage July-December 2020. December 2020 project accepted; my involvement will be for an additional 2 years through the research, development, production and installation stages of the sound and web-based project.

Conference Planning Collective Member: *Toward a new way of being with plants*, international virtual conference, June 17-18, 2021, initiated by Paul Moss, PhD Student, Department of Geography, Environment, & Society, University of Minnesota. October 2020 - present. This ten-member team consisted of scholars from five countries with expertise and interest in the topic. [www.beingwithplants.com](http://www.beingwithplants.com)

PhD Co-supervision Request and Guidance: Research on plant and nonhuman knowing, sound art, and conservation areas, Interdisciplinary PhD Studies in Media and Artistic Research, Faculty of Media, Art, and Performance, University of Regina, Regina, Saskatchewan. August 2020 - Fall 2021 commencement, Iranian student.

## Climate Change Activities

These activities resulted from, informed, and strengthened aspects of my research.

MAP 300AQ/400AD/890BP: Engaging Climate Change: Creativity, Community, Intervention Initiated (2019), developed and taught this class in the Faculty of Media, Art, and Performance, University of Regina, Regina, Saskatchewan, Winter 2020, Fall 2020, scheduled for Fall 2021.

Course summary: This multidisciplinary course explores climate change and environmental concerns, with a focus on resilience, community, Indigenous perspectives, science, artist engagements, local/global projects, and thinking outside the box in the face of change. Assignments will be applied and/or artistic explorations of course themes. Students from all university disciplines are welcome.

Climate Action Task Force Leadership Team member, Royal Roads University, Victoria, British Columbia, September 2020 – present.

President's Advisory Committee on Sustainability – Action Plan Committee member, University of Regina, Regina, Saskatchewan, November 2020 – present.

PhD Co-supervision Request: Research on popular theatre and climate change, Interdisciplinary PhD Studies in Media and Artistic Research, Faculty of Media, Art, and Performance, University of Regina, Regina, Saskatchewan. October 2020 - Fall 2021 commencement, Nigerian student.

Academics for Climate Community Series: Towards a Better Understanding of Climate Change in Saskatchewan

Academics for Climate (AFC) was formed by University of Regina faculty Sarah Abbott (Film), Dr. Britt Hall (Biology), and Dr. Sean Tucker (Business Administration) to promote the role academics can play in generating awareness, knowledge, and action on the climate crisis, as well as sharing academic knowledge and research with the public. October 2019.

The goal of the 14-part interdisciplinary lecture series was to increase public understanding of climate change and its range of impacts. The funded series ran January-mid March 2020 before interruption due to pandemic social distancing. Nine lectures were filmed and are available on the “Academics for Climate – University of Regina” YouTube channel.

Lecture information and YouTube links are available at <https://sarahabbott.ca/academics-for-climate-community-series/>.

Climate Change and Consciousness Continued Professional Development Certificate

Findhorn College, Findhorn, Scotland, April-May 2019. Self-directed learning pathway associated with the *Climate Change and Consciousness* conference, Findhorn Foundation, Findhorn, Scotland.

