

Living Speculative Pedagogies as Boundary-Crossing Dialogues

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This article shares the experience of expanding what was initiated at the SPARK conference as one example of engaging pedagogical development as an ongoing critically reflective boundary-crossing dialogue. It extends conversations in relation to a climate change inquiry project that explored thinking with trees by revisiting a concept integral to our inquiry—listening—in order to critically interrogate our pedagogical assumptions, actions, and aspirations. This approach to curriculum and pedagogy keeps the question “Now what?” continuously in the frame as a guide for living unfinished, uncertain, and speculative doings and dialogues in the classroom.

Key words: *pedagogical development; listening; common worlds; climate change*

I think every single time critters play with each other, couple of dogs, for example, they're using their inherited repertoire. They're choreographing in a highly biologically preconstituted way, and, in any play bout worth the name of play, they take that inherited set of capacities and they do something with it that has quite literally never happened on this planet before. And that play is exactly that. It is that taking up of inheritance, in choreographies and interactions that produce what has truly never been on this planet before, that is sustained by joy. Nobody is going to stay in a play bout unless it is sustained by joy. For one thing, it is too dangerous; play is never safe. And there is something about that that feels to me really fundamental about being an organism. ~ Donna Haraway, *Reflections on the Plantationocene*

We are pedagogists and early childhood educators who work with children and families at a university-based child care centre on Songhees, Esquimalt, and W̱SÁNEĆ traditional territories. Since 2011, we have actively investigated through inquiry work and pedagogical research the collective construction of knowledge and values within the centre in our collaborative pursuit to engender innovative, experimental, and situated curriculum. While we work with and toward particular shared pedagogical commitments—a common worlds framework, responding to the Truth and Reconciliation Commission (TRC) calls to action, promoting sustainable practices—how we welcome, understand, and engage our commitments is not exactly the same, both within each classroom and across them. Our shared experimentation is ongoing, from inquiry to inquiry, in which our differences as much (or more) than our similarities often shape our understandings and actions. We strive to work in ways that make those differences visible so they are generative openings of possibility and learning rather than divisive closures. To be clear, the goal is *not* to arrive at a point where we are all doing the same exact things in the seven classrooms that make up the child care centre. Such a technocratic pedagogical practice is antithetical to the ethos we are trying to live.

This article grew out of conversations that occurred during and after the May 2019 conference SPARK: The Early Years, “Surfacing Connections & Challenging Divides: Research, Policy, and Practice in Early Childhood Education.” At that conference, two of us presented portions of a chapter that analyzed data from a postqualitative research project exploring climate change through thinking with trees, children, educators, and place (Nelson & Hodgins, 2020). Our intention here is to share our experience of documenting and expanding on what was initiated at the conference as one example of engaging pedagogy as ongoing critically reflective boundary-crossing dialogues. We take seriously Peter Moss’s (2007) caution that “the absence of dialogue and debate impoverishes early childhood and weakens democratic politics” (p. 233). It is a caution we carry into our researching and pedagogical practices and one that has shaped, and continues to be shaped by, our common worlds orientation.

Common worlding climate pedagogies

Since October 2017, we have participated in a SSHRC-funded three-year research and network-building initiative called the *Climate Action Network: Exploring Climate Change Pedagogies with Children* (CAN), led by Dr. Veronica Pacini-Ketchabaw and Western University. We come to this research in different roles, Denise and Narda as researcher pedagogists and Sherri-Lynn, Key, and Rosalind as early childhood educators. One of the project’s key intentions is to deepen understandings of children’s environmental relations and synthesize knowledge at local, national, and global levels regarding children’s creative responses to the impacts of climate change. There are research laboratories in Canada, the UK, the US, and Australia (see <http://www.climateactionchildhood.net>). Our laboratory has been exploring climate change relations by thinking with trees, while other teams within the project have chosen to focus on other areas, such as energy, water, and weather, in their own local community contexts.

To collaborate in this research, children, educators, and pedagogists come together in the everyday context of the child care centre, both inside and outside the classroom, generally twice a week for two to three hours throughout the academic year. Blocks of “inquiry time” are planned based on coconstructed curiosities and questions that emerge from week to week during which we employ arts-based research techniques (Pink, 2013) and engage in the process of pedagogical narration (Hodgins, 2019). Inquiry moments are documented and these traces (i.e., photographs, video or audio recordings, written narratives) are used to provoke dialogue with each other, with the children and families, with ideas, and so forth. It is a pedagogical researching process wherein data is generated, analyzed, and acted on in an emergent and collaborative way. This approach is akin to the way we foster curriculum making and pedagogy in our child care classrooms: unfinished and uncertain, and lived in ways that make visible past, present, and *speculative* future entanglements.

We understand being and becoming, living and learning, through a common worlds orientation wherein taking children's theories and observations seriously in the creation of response-able curricula and pedagogies is inseparable from considerations with/of the more than human (Nelson, Pacini-Ketchabaw & Nxumalo, 2018; Taylor, 2019; Taylor & Pacini-Ketchabaw, 2018). In our CAN research, this is reflected in our collective intention to attend to gaps in understanding children's dynamic relations with, and responses to, other entities in this time of accelerated change as part of a commitment to creating pedagogies that are capable of and responsible to working with children amid the challenges of 21st-century living. This orientation resists the dominant approaches to sustainability in ECE that are positioned through Euro-Western developmental and anthropocentric frames, where nature tends to be that static and curative backdrop against which childhood development can be enhanced (Taylor, 2017).

While it is important to support young children's emotional, spiritual, cognitive, and physical growth and well-being, we believe that engaging young children's ideas and understandings in troubling times demands more of us than upholding notions of universal "optimal" childhood development to do so (Nelson & Hodgins, 2020). The children with whom we work have taught us much and continue to do so. For example, they seem far more capable than we adults at challenging, dismissing, and/or not yet seeing boundaries and dichotomies (e.g., alive/dead, humans/nature) and resisting climate crisis conversations grounded in a "goodies and baddies" script (Taylor, 2019). With a common worlds framework, human meaning making, needs, and desires are only *one facet* of any entanglement of becoming. Our aim is to work together with the conceptualization and promotion of interspecies inseparability and vulnerability rather than human supremacy. We see this work as critical for the times we live in, and like Nelson, Pacini-Ketchabaw, and Nxumalo (2018), we understand that our efforts must include "keep[ing] common worlds framings open to a range of articulations, a range of challenges, a range of relations, and a range of not-yet possibilities" (p. 9). This requires a play/full approach to critically dialogue and investigate the foundational logics that coconstitute everyday moments, practices, and understandings, including our own.

Boundary-crossing dialogues

The way we put pedagogical narrations to work and constantly weave conversations with others, ourselves, materials, ideas, and so forth contributes to an ongoing process of opening up and making visible dissensual plurality—perhaps what Dahlberg and Moss (2005) have put forward as "radical dialogue and negotiation" (p. 94). Reflective discussion is not employed as simply a "concluding device" to data collection or practiced as the final step to a project. Our projects themselves, as we engage in the process of pedagogical narration, work in a similar nonlinear, boundary-blurring way. Inquiries leak into each other; they haunt; they escape the confines of academic years or research grant timelines. While we have very clear start and stop dates for data generation and knowledge mobilization in our research projects, and yearly inquiry work generally starts in September and wraps up in June, there really are no easily distinguishable beginnings and endings. For example, previous inquiry work pervaded our discussions and actions in the CAN research on climate change and trees in varying ways. Similarly, the CAN work we were living permeated other projects at the time and will, no doubt, be carried into our future collaborations. However, while we continue to pick up and return to threads from earlier/other projects, purposefully reexploring a central inquiry concept (i.e., listening) and action (i.e., purchasing stethoscopes to use with the children), as we do in this article, is a first for us.

This reexploration began when two of us read what we were going to present at SPARK with some of the project's participating educators, which opened up space for them to share their lingering troublings of an action we had engaged in our inquiry research: bringing stethoscopes into the inquiry as part of our collective exploration of listening with trees and children (Nelson & Hodgins, 2020). An invigorating conversation ensued, followed by an

invitation to explore these troublings and continue our critical reflection of a concept integral to our CAN inquiry (and others) thus far: listening. All participating educators were provided with previously crafted writing about listening and the stethoscopes with an invitation to share their memories and reflections about the stethoscope moments in our CAN inquiry. New narratives and reflections were then shared back with those who chose to participate, along with further readings and resources for continuing (extending) our “listening” considerations. This is how we work within our ongoing pedagogical development and research—thinking with theory-research-practice that reaches beyond ourselves and beyond our discipline in order to critically interrogate our pedagogical assumptions, actions, and aspirations (Hodgins, 2019). In the subsections that follow we share several moments of our boundary-crossing dialogues that were produced through this process. Each subsection begins with segments of the participating educators’ narrative (re)reflections written in italics, recombined and layered as collective wonderings, followed by the analyses these provoked. We begin in the middle (muddle) of this still emerging story.

Troubling stethoscopes (listening)

I’m not completely sure why bringing stethoscopes into Haro Woods and “listening” to trees troubles me. I suspect it is not one but many tensions that exist ...

I wonder if the stethoscopes conjure up experiences in early childhood centres with dramatic play areas equipped with doctor kits containing stethoscopes, a DAP (developmentally appropriate practice)-type material that is linked to dramatic, imaginative role-play activities and so common in Euro-Western, settler colonial early years spaces. The dramatic play plastic stethoscope primes the player to listen to a heartbeat or air movement through the lungs of dolls, each other, or whatever may happen to be around. Does the pre-set-ness of the stethoscopes limit or dismiss the potential for agency in materials? Does it reiterate (demand) that we listen with our ears, rather than with an entanglement of senses?

And what of choosing to specifically purchase stethoscopes for this project? Extraction, mass production, and consumerism come to mind when I think of bringing in the bought-for-this-inquiry stethoscopes at a time when we are being asked to think carefully about what we bring into our spaces and the pedagogical approach behind our choices. I recognize that I am not innocent in this at all. Charcoal, pencils, paper, clay—extraction, mass production, consumerism—I have purchased and brought them all into our spaces and into Haro Woods. But somehow stethoscopes feel different for me. Why?

Have we considered what the stethoscopes do, what they put into motion? What did they make possible? How did they open up possibilities? What might they have closed down?



Figure 1. CAN listening with trees.

When some of the educators shared their discomfort with the stethoscope moments in our inquiry work, they sparked an important pause and provocation to revisit some of our pedagogical hopes and intentions. They took a risk. Disagreeing (creating unease) with others can create tensions and feelings of vulnerability, particularly in contexts shaped by “the politics of niceness” (Vintimilla, 2014), where, as Cristina Delgado Vintimilla and Iris Berger (2019) explain, collaboration “takes place within a politics underwritten by a commitment to social harmony” (p. 188). We are deeply familiar with this in our early childhood education field. We’re all friends here. Share. Play nice! It is messaging framed within Euro-Western dualistic binary logics (you’re either with us or against us) and an image of the “good and caring teacher” (Vintimilla & Berger, 2019, p. 189) that plagues much educational thought and action and constrains the possibilities for radical dialogue and play to put some things (something else) into motion. Vintimilla (2014) writes that

this politics of niceness (which presupposes the unity of community rather than the diversity of difference) is reinforced by a generalization conception of early childhood educators (most of them female) first and foremost as care providers and protectors. Both of these roles are synonymous with domestic nurturers and guarantors of familial harmony. These myths, of course, sustain a broader image of who a woman is within our patriarchal society. (p. 84)

Playing well together, and here we are thinking with Haraway’s offering of play (in Mitman, 2019) at the article’s beginning, requires that we resist these myths of care(rs) and unity that turn collaboration into instrumentalized and depoliticized action (Vintimilla & Berger, 2019). Drawing on Hannah Arendt’s theorizing of commons, Vintimilla and Berger (2019) suggest that “the experience of a common world’s main purpose is not to achieve agreement or consensus by homogenizing differences, but to sustain the tensions emanating from being-together-in-plurality in such a way that the unexpected or the new can emerge” (p. 191). In our efforts to document and expand understandings of what it means to listen with/in our trees project, the process we engaged was *not* intended to “fix” our thinking or eliminate the tensions of our being-together-in-plurality, but rather to think with our differences to produce further collective thinking. This in itself requires deep listening, or as Carlina Rinaldi (2006) has described, a pedagogy of listening, within which Rinaldi includes listening “as a metaphor for having the openness and sensitivity to listen and to be listened to” (p. 65).

By disagreeing / questioning the stethoscopes, one of the threads made visible for tracing included the histories (stories) the stethoscopes come with when we bring them into our work, histories we had yet to consider. Itself an instrument for a certain kind of boundary-crossing dialogue, the stethoscope was developed by Parisian doctor René Laennec 200 years ago, first as paper rolled up into a tight cylinder in 1816 and soon after as a wooden cylinder-shaped tube (Roussy, 2016). While the iconic stethoscope is understood to be one of the top inventions in medical history, today handheld ultrasound devices may be pushing it aside, though its pretend-play counterpart remains a staple material in many North American early years contexts. Today's standard two-eared rubber-tubing stethoscope appeared in the 1850s, but its play versions do not seem to have arrived until nearly 100 years later when in the 1940s Hasbro began to make doctor and nurse kits as their first toys (Hasbro, 2013). In the same timeframe, a resource booklet about appropriate play materials and environments for the preschool-aged child produced by the Canadian Welfare Council (Mitchell, 1942) does not include a doctor kit in their list of must-have toys but does specifically name "playing 'doctor'" within a subsection on "dramatic play" (p. 14). This is typically where these kinds of toys land in developmentally appropriate practice (DAP)—in the realm of "dramatic play" to represent "different kinds of work" so children can learn how to interact with others, imagine their future selves, try out their developing socio-emotional selves, and so forth (Harms, Clifford, & Cryer, 2013). When we first introduced the stethoscopes into the project, we did not consider whether their familiarity would close down possibilities in our efforts to expand listening, whether such a mundane object—200 years of the stethoscope, 170 years of the version we know/use today, and at least 75 years of play versions—would shape our engagements, because we know the script for what they are and do and how we are expected to use them. Nor did we question the act of purchasing them for the inquiry, how easy it is to buy what we "need" in our capitalist consumer culture, where "there is not an amount of 'stuff' that is enough to satisfy" (Wolff, 2013, p. 333), and how entangled this is with dominant discourses of the good educator (and the good parent).

The arrival of pretend-play medical kits in early childhood spaces in the early 20th century in North America is likely part of the imbricated histories of child development, progressive education, plastic production, and mass manufacturing and marketing, wherein the fabricated desire for and production and consumption of materials that mimicked real life for the purpose of role playing burgeoned (Hodgins, 2019). Even though the stethoscopes we brought in were not the play versions more typically found in the early years classroom and we used actual/real stethoscopes outside their assigned dramatic area and role-playing duties, our pedagogical actions and intentions are inseparable from this history and how it shaped and continues to shape early childhood education practices, regulations, and governance today. There is little difference between Mitchell's revised 1942 guide and many lists today of the "needed" materials for a "quality" early years program (see Harms et al., 2013; National Association for the Education of Young Children, n.d.). A developmental understanding of "quality" as something that can be measured by universal indicators rather than something that can only be understood historically, across local contexts, and as the result of the interaction of diverse physical, pedagogical, and cultural forces and factors (Dahlberg, Moss, & Pence, 2013) remains dominant despite more than 30 years of work to reconceptualize early childhood education (Moss, 2016). That we need particular stuff for children to develop well is entangled with DAP notions of quality, fuelled by our "hyper-consumer environment" (Wolff, 2013, p. 335), and driven by the "inner workings of the capitalist machine" (Wolff, p. 336). Were we off the hook for the purchase because we carried the stethoscopes outside to "think with nature"? Did our efforts to extend our listening ears to the more-than-human world render the (purchasing of the) stethoscopes justifiable or innocent? *Had we made or assumed listening to be an innocent, pure, apolitical act?* Stopping to question the stethoscopes provoked the reminder that early childhood education is not about coming up with and applying "technical solutions"; rather, pedagogical actions are always "fundamental ethical choices" (Dahlberg & Moss, 2005, p. 120, drawing on Carlina Rinaldi). It created an opportunity to question again what the act of listening, as a pedagogical guide, in unruly and sometimes

incomprehensible moments demands of us, and how we are responding (Nelson & Hodgins, 2020). What does listening do? How are we listening? For whom and for what do we listen?

Welcoming stethoscopes (listening)

Since the moment one of the children named a particular tree the “owie tree” (after noticing sap was running down the trunk where its branches had been cut off in the pruning process), we have been wondering: If trees could talk, what would they say to the children? Do trees have voices? Can we really hear forest conversations?

The reading [Haskell, 2017] we did around that time mentioned stethoscopes, which inspired me to purchase a small number of them for our trees exploration. I was wondering what, if anything, the children would be able to hear and what their interpretation would be.

Off we went into Haro Woods brandishing our stethoscopes and began our exploration at the place the children had named Moss House (due to the abundance of moss-laden thickets that dot the landscape). The children eagerly took turns with the stethoscopes and began placing them on various surfaces around Moss House. Everything in that moment seemed to have meanings and feelings, human and more-than-human alike. The children described hearing the trees, their voices:

“The tree says ‘you can climb on me.’”

“The tree says ‘I’m sorry.’”

“The tree says ‘I am happy today.’”

“The owie tree is feeling better.”

“The apple tree says good morning to me.”

I decided to try for myself to see if I could hear anything. I stood there for a number of minutes really hoping that I would at least hear insect activity or even the sound of sap running through the trunk. Unfortunately, the only thing my human ears could pick up were the muffled voices of the children and adults surrounding me. I felt somewhat disappointed at first, but then I thought, “You are thinking in human terms.” Even when we learn other human languages, it takes some time for our ears and brains to become accustomed to the sounds that are foreign to our ears. I imagine it is the same when we are trying to communicate with more-than-human others.



Figure 2. Stethoscopic listening.

For most of us in the CAN project, thinking with Euro-Western science that has illuminated some boundary-crossing dialogues among more-than-humans was profoundly significant and it was instrumental to the wonder and experimentation with listening we have taken up together. Through our inquiry, we read how trees talk to each other in a number of ways, including through “olfactory, visual and electrical signals” (Wohllenben, 2016, p. 12) and via the vast “wood-wide-web” of mycelium networks underneath the forest floor (Suzuki & Grady, 2004). Trees feed their young, nurse their dying, warn each other of invaders, cooperate, and more (Kimmerer, 2013). These are knowledges that have been within Indigenous cosmologies for millennia, though they are generally presented with/in Euro-Western sciences as exciting “new” understandings of the material world (Kimmerer, 2013; Pellatt & Gedalof, 2014). In our particular work context, understanding trees and other plants as sentient communicators is not new for the Lkwungen and WSÁNEĆ peoples, whose kinship relations with plants, animals, and this place go back to time immemorial.

Simply focusing our attention on listening is a bit radical because, as journalist and anthropologist Maureen Matthews notes, we “live in a culture that values sight over sound” (CBC Ideas, 2014, 02:58). We refer to intelligent people as *bright*, to thoughtful people as *enlightened*, to understanding someone else’s ideas or experience as *seeing* their point of view. Professor of Global Studies Kathryn Geurts suggests that tactile metaphors were more commonly used in Euro-Western contexts in the Middle Ages and that optical metaphors did not really appear until after the Enlightenment (CBC Ideas, 2014). In our own work, we too tend to think with optical metaphors, such as challenging the normative use of reflection with Donna Haraway (1997), and Karen Barad’s (2007) offerings of diffraction, and these metaphors regularly appear in our communication with no conscious effort. Even as we stretch our imaginations within a near-two-year journey to expand our understanding of listening, our article here is riddled with optical metaphors. We see that, however impactful the provocation to listen to tree voices may have been (or not), thinking with listening, *doing listening*, is not easy work to stay with. As Rinaldi (2006) puts forth,

Listening is not easy. It requires a deep awareness and at the same time a suspension of our judgments and above all our prejudices; it requires openness to change. It demands that we have clearly in mind the value of the unknown. (p. 65)

Returning to the stethoscopes brought us back amidst challenging dialogues about materials and environments that we have been grappling with for years. We were questioning again whether we needed all this stuff. Were we mindlessly consuming? Had we forgotten to consider the footprint of these productions and whose bodies carry the brunt of their weight? In turn we were reminded of the numerous ways the educators, children, and families work to live the university's sustainability plan and "zero waste" initiatives: striving to consume less, learning where the materials we use come from, trying to reuse what and where we can. Together, these recollections and questions recalled our previous thinking with Myra Hird's research program Canada's Waste Flow (see <https://www.wasteflow.ca>), wherein consumption and waste (management) are recognized as entangled material-discursive ethico-political practices and making individuals responsible (e.g., to reduce, reuse, recycle) is made visible for critique. Hird and her colleagues explain that "the emphasis on individual responsibility operates within a capitalist rationale to manage waste in ways that do not disturb circuits of mass production and mass consumption (and industry profits), effecting an almost exclusive orientation toward 'downstream' responses to waste" (Hird, Lougheed, Rowe & Kuyvenhoven, 2014, p. 444). Our actions to reduce, reuse, and recycle (being good citizens) sit alongside our actions to buy / bring into the classroom stuff to enrich children's experiences in an inquiry (being good teachers), and both sets of actions are buoyed by neoliberal colonial individualist logics.

Kumi Kato (2015) writes, "Listening is a critical practice for allowing our senses to awaken and become receptive to Earth Others" (p. 111). What happens when we think with this idea alongside a description of Thomas, who "sat quietly with a large branch balanced on his head watching other children move around in play" (Nelson & Hodgins, 2020, p. 154)? For Thomas,

our inquiry provocation of "thinking with tree voices" meant rejecting an invitation to listen through stethoscopes or move with other children and hand-held cameras in the forest. Instead, he sat intently, in a branch-balance entanglement, silently repositioning himself several times under the weight of the big branch. Thomas provoked us to (re)consider what exactly we mean by listening. (Nelson & Hodgins, p. 156)

Did we actually need the stethoscopes to listen, then? Did we need stethoscopes to provoke our deep thinking about listening? Maybe and maybe not. It is impossible to know now whether or how we would have reimagined listening without the stethoscopes. Perhaps that's not the point. There were children and educators who, unlike Thomas, did take up the stethoscopes to pause and listen and educators who do believe the stethoscopes invited a different relationship with the forest. "*Our wonderings have been flooded and opened up new windows to thinking common worlds.*" The stethoscopes were, for some, an instrument that helped to awaken senses and become receptive to more-than-human others, to pause and understand "trees as co-participants worth listening to and ourselves as implicated in the ongoing process of mutual becoming" (Nelson & Hodgins, 2020, p. 159). While the stethoscopes could promote a simplistic (traditional) form of listening (auditory), our collective reimagining of listening inspired by researching beyond our discipline challenged the Euro-Western tendency to dismiss trees as merely mechanical or ornamental "things" here on earth to serve our (human) needs. Maybe the point is how (whether) we will continue to interrogate listening in ways that shift anthropocentric colonial thinking that places humans at the top of the so-called hierarchy of being in the world. Attempts to listen in new ways feel vital, particularly so in an era of accelerated climate change that has been built on the disregard of so many voices (human or otherwise) to smooth the way for continued hyperconsumption and capitalist profit.

More than metaphor

One thing that came to me when thinking about stethoscopes was considering stethoscopes as a metaphor for beyond the cliché of “active listening.” When we listen with a stethoscope, we block out distractions and focus solely on that which we are listening to. If we practice that kind of listening, to humans and more-than-humans, what would that do to our being and becoming? Maybe we could call it stethoscopic listening.

Listening with stethoscopes reminds me of questions raised in other inquiries, about our methods of listening, about the “hows” of how listening happens and moves and unfolds collectively in the forest. We’ve used iPhones to record the sounds of the forest. We’ve listened to others through FaceTime exchanges. Now stethoscopes. How we listen is an ethical question. (How) Are stethoscopes active participants in listening entanglements?

I am reminded of when Narda and I took a group to figure out what was happening with the road construction. It was so loud as we walked down the road and then eventually into the forest. As we listened to the vacuum truck, digger, and dump trucks we could feel the vibrations in our bodies, our eardrums and chests vibrating. It felt impossible to pull apart the feeling from the listening—they were completely entangled, reliant on each other, if that makes sense. When we went into the forest some of the children put their hands on tree trunks, soil, and Eagle Rock, “listening” to the construction through the vibrations. Maybe they were wondering if tree, soil, and rock listen to/experience construction as we do.



Figure 3. Listening beyond tree?

In the preface to *The Songs of Trees*, David George Haskell (2017) writes, “To listen is therefore to touch a stethoscope to the skin of a landscape, to hear what stirs below” (p. 1). Here Haskell invokes stethoscopes as a metaphor for close listening, a move we have also engaged in our trees project. But perhaps we can also think of them (and listening) as more than a metaphor, how their actual physicality as an apparatus for creating/knowing makes possibilities and limitations in pedagogy and practice more audible, akin to Haraway’s (1988) provocation to embrace the technology of a prosthetic lens to “see” beyond a so-called natural ability to do so:

The “eyes” made available in modern technological sciences shatter any idea of passive vision; these prosthetic devices show us that all eyes, including our own organic ones, are active perceptual systems, building on translations and specific ways of seeing, that is, ways of life. There is no unmediated photograph or passive camera obscura in scientific accounts of bodies and machines; there are only highly specific visual possibilities, each with a wonderfully detailed, active, partial way of organizing worlds. (p. 583)

As Haraway (1988) points out, “seeing from somewhere” and using technological tools (and our own bodies) as noninnocent and political tools might be important for our thinking about “listening” and the stethoscopes. Haraway writes, “Vision is always a question of the power to see—and perhaps of the violence implicit in our visualizing practices” (p. 585). She further notes that “vision requires instruments of vision; an optics is a politics of positioning. Instruments of vision mediate standpoints; there is no immediate vision from the standpoints of the subjugated” (p. 586). With her words in mind, perhaps listening requires instruments of listening to mediate standpoints and make subjugations more audible. This notion changes the pedagogical emphasis from one of passing judgment on a material as “good or bad” to one of thinking together about what the sum of these parts might do together—that is, what stethoscopes (now that they are with us), ears, trees, machines, and children might world in new ways together.

In Kas Roussy’s (2016) article on the 200-year anniversary of the stethoscope, she references research and medical experts who suggest that today’s more accurate handheld ultrasound devices should/will replace the iconic and less accurate stethoscope (see also Maniuk, 2018). Roussy also quotes medical historian Jacalyn Dufferin, who disagrees that the stethoscope is on the way out, emphasizing the point that the stethoscope is a device that

keeps the doctor-patient bond alive. “It forces the hands upon the patient to slow down, to spend quiet moments with the patient,” Dufferin said. “If you’re doing something quickly with a device that is remote, you are distancing yourself from the patient and reducing the ability to communicate.” (para. 24)

This is an interesting observation given that Laennec reportedly first rolled his notebook in 1816 to avoid placing his ear against his female patient’s chest, the common practice at the time to listen to a patient’s heart and lungs, because this was against his Catholic moral sensibilities (Maniuk, 2018). For Laennec, the stethoscope created an acceptable physical separation between doctor and patient that still allowed for listening within, but compared to today’s modern ultrasonic listening devices, Dufferin considers the stethoscope as facilitating a doctor-patient bond. Intimacy of a different sort is also being played out in The Tree Listening Project through product designer Alex Metcalf’s listening tree device, a polished metal cone with technology that amplifies sound and filters out ambient noise (Wyse, 2008). Metcalf’s design is unlike scientists’ listening devices that are placed within a tree where a section has been bored out. Metcalf suggests that “through the intimacy of headphones to accommodate a truly personal experience” listeners can connect to the “‘hidden sounds’ behind the bark” (The Tree Listening Project, 2019, para. 1).

The story of Laennec’s first stethoscope, Dufferin’s position on the stethoscope’s importance, and Metcalf’s stethoscope-like tree listening device remind us that in a very material sense stethoscopes are capable of being/ becoming a conduit for both intimacy *and* distance, depending on the event and other players. When we carefully attune ourselves to the tree through the stethoscopes, what are we *not* hearing? When we are listening to something, what is twisted and knotted up in between? What gets left behind? What is connected, part of this assemblage of listening? In a previous forest inquiry, a few children held their ears to bark and heard the roar of a bus on the street passing by. With the provocation from Tim Ingold (2017) that we took up in the first year of our project in mind, we returned to wondering whether, when we listen, we only (can only) listen to “just the tree”:

What is tree and what is not-tree? Where does the tree end and the rest of the world begin? These questions are not easily answered. Is the bark, for example, part of the tree? If I break off a piece in my hand and observe it closely, I will doubtless find that it is inhabited by a great many tiny creatures that have burrowed beneath it and made their homes there. Are they part of the tree? And what of the algae that grow on the outer surfaces of the trunk, or the lichens that hang from the branches? Moreover, if we have decided that bark-boring insects belong as much to the tree as does the bark itself, then there seems no particular reason to exclude its other inhabitants, including the bird that builds its nest there, or the squirrel for whom it offers a labyrinth of ladders and springboards. Even as they take wing, the birds of the air carry something of the tree with them—a memory, a sense of place, the perceived affordance of a perch. (Ingold, 2017, p. 34)

Maybe listening beyond tree—to the nesting owls, to cut logs for sewage tanks and bike lanes or rats running about the play yards, or orcas dying, or pipelines or dams, or droughts—is how we listen to the stories of tree. Listening to all that is connected to “tree-ness,” to all that makes a tree a tree—what Kato (2015) calls “deep attentive listening”—requires attuning to it all. Perhaps this is akin to what Rinaldi (2006) suggests when she proposes “listening as sensitivity to the patterns that connect, to that which connects us to others; abandoning ourselves to the conviction that our understanding and our own being are but small parts of a broader, integrated knowledge that holds the universe together” (p. 65). In this way then, do the stethoscopes limit our listening, focusing us in so intently to “the tree”? How does our listening through stethoscopes attune to / interfere with the more-than-human other’s listening? Does Metcalf’s listening device help us humans amazedly wonder at the life within the tree, her movements and communication, and at the same time promote an individualistic approach to knowing-doing? Can we (re)think our stethoscope experimentation as an invitation to (re)consider the types of flow needed to notice or zero in sometimes to the tiny, the minute, the sentient individual, and then open up to how/where that tiny, minute, individual is not in fact in isolation?

I come here to listen, to nestle in the curve of the roots in a soft hollow of pine needles, to lean my bones against the column of white pine. I turn off the voice in my head until I can hear the voices outside it: the *shhh* of wind in needles, water trickling over rock, nuthatch tapping, chipmunks digging, beechnut falling, mosquito in my ear, and something more—something that is not me, for which we have no language, the wordless being of others in which we are never alone. (Kimmerer, 2013, p. 48)

Akin to Kimmerer’s rich auditory description, Matthews’ exploration of the anthropology of sensory perception challenges the idea that “the five senses” are in actuality distinct and how maybe how our conceptualization of five senses is not necessarily adequate or “enough.” Rinaldi (2006) makes the point that a pedagogy of listening includes “listening not just with our ears, but with all our senses (sight, touch, smell, taste, orientation)” (p. 65). As Kato (2015) explains, “in Japanese the word *kiku*—‘to listen’ can indicate much more than simply a sound coming to our ears. *Kiku* is an act of ‘appreciating something with all of our sharpened senses’” (p. 111). Kato gives an example of people gathering to listen to the sound of the lotus flower blooming despite not being able to actually “hear blooming” because it is not in the range of human hearing frequency. Matthews’ documentary also blurs Euro-Western lines of distinction between nature (our senses) and culture (our environment). As she tells us, from a neuroscientific perspective, there are multiple sensory computations going on at any one time, and some degree of understanding needs to take place before we register the experience of things. “What we choose to examine at that next processing step in the brain, that expertise level,” she says, “is influenced by our culture” (CBC Ideas, 2014, 15:50). As demonstrated in the numerous stories Matthews shares, *it is our culture that frames understanding, telling us what we see, feel, taste, hear ... sense.*

Living the difference(s)

This article began with a SPARK conference conversation that became a provocation to circle back, reconsider, and pick up moments that continue to weave and invite further serious play for getting somewhere new together. And so, we “end” by returning:

By experimenting and extending our ability to listen in new ways, we recondition our ears, eyes and hands, and our hearts, to engage (to the best of our ability) in a multiplicity of entangled voices that constitute the stories of trees. At best, we can only ever know trees as fellow beings who reveal their unfolding stories in partial, sometimes unexpected and uncertain, ways. (Nelson & Hodgins, 2020, p. 162)

In the same way that attempting to stretch our understandings beyond the human can never be dislocated from an always-human standpoint, stepping outside our particular cultural frames is difficult, for it is how we have come to learn to listen (and see, feel, taste, hear ... sense). How might reminding ourselves that we do hear/listen, in specific and familiar and unfamiliar ways, be a method for becoming accountable (e.g., to cut trees, dying rats, pipelines, droughts, and so forth)? Rethinking listening, or the senses in general, as entangled modes of multiplicity, something Anna Tsing (2015) refers to as “polyphonic,” helps build an understanding that listening never happens in isolation and is more than a metaphor for engaged, responsive modes of being in the world. Listening, then, must be understood as more than just attuning with ears; the flows and rhythms of listening are inseparable from polyphonic assemblages that are always situated in context. We offer that learning to do otherwise in a society predicated on seeing, hearing, extracting reductive “components” requires being in radical dialogue beyond ourselves, beyond our discipline, for “we cannot think the unthought-of while using the same old tools” (Wolff, 2013, p. 336).

By asking the question “What did/do the stethoscopes do?” and taking the time to revisit and reconsider our inquiry thinking, we opened up new and returning questions. Now our question is how we will carry our collective exploration with us to inform and guide our next pedagogical conversations and actions. It will require our continued commitment to facilitate (and advocate for) the conditions necessary for living curriculum as *in the making*, where uncertainty is centered “as a source of ethical practice” (Nxumalo, Vintimilla, & Nelson, 2018, p. 449), dissensus is welcomed, and playing well together is understood as a human–more-than-human ethical responsibility.

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