Indigenous Conceptual Cartographies and Landscape Pedagogy: Vibrant Modalities Across Semiotic Domains

Michael Zimmerman Jr, Margaret O'Donnell Noodin, Patricia Mayes, and Bernard C. Perley

Abstract This chapter explores how aspects of the landscape can be incorporated in language teaching practices. Drawing on the area of research known as "linguistic landscape," language teachers have recently begun to see the linguistic landscape as a pedagogical resource. Jaworski and Thurlow's (2010) work broadens these ideas. They use the term *semiotic landscape*, which is "any (public) space with visible inscription made through deliberate human intervention and meaning making" (p. 2). In addition, we link this approach to the notion of *indigenous conceptual cartographies*, which we use to describe the multiple ways that indigenous teachers conceptualize language, landscape, and cosmology. This includes physical artifacts of cartographic representation such as maps, signs, and the landscape itself, as well as metaphorical cartographies such as ideas of the landscape, concepts of sustainability, and the relationships between language, landscape, and cosmology. We apply these concepts to one lesson that was organized as a narrated walking tour on the grounds of an indigenous community school, arguing that indigenous ways of learning in the landscape offer a rich experience that promotes not only language learning but also other learning that may help create a sustainable future.

Keywords Indigenous · Education · TEK (traditional ecological knowledge) · Social geography · Anishinaabe language · Indigenous conceptual cartographies · Vibrant modalities

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1   Introduction

American Indian teachers and students are returning to their local landscapes to learn their languages, cultural knowledge, and respectful and responsible ways of being in indigenous worlds. Many language and cultural revitalization curricula are emphasizing landscape pedagogies for integrating the multiple modes of learning across semiotic domains (Baldwin & Olds, 2007; Noodin, 2017; Jansen et al., 2013). In those cases, language learning requires immersion in language, landscape, and cosmology. Not only are linguistic, geographic/geological, and spiritual/religious knowledge systems being learned and shared but modalities of communication, such as gestures, prosody, proxemics, are being shared and learned as well. We, the authors of this chapter, interpret semiotic domains broadly to include conceptual domains along with physical domains, and we use the term *indigenous conceptual cartographies* to refer to this connection. This is a critical distinction allowing comparative analysis across indigenous and non-indigenous domains, and it incorporates non-linguistic knowledge in language teaching and learning. For example, where non-indigenous cartographies privilege maps and map-making from a detached bird's-eye view, indigenous conceptualization of their landscapes are kin-based relations and experientially shared places (Basso, 1996; Thornton, 2007; Nevins, 2017; Momaday, 1969). We introduce the conceptual stance *vibrant modalities* to highlight the importance of vibrant relations as kin-based relations to access the vitality of language, landscape, and cosmological relationships in the service of language, cultural, and spiritual learning. "The starting point for multimodality is to extend the social interpretation of language and its meanings to the whole range of representational and communicational modes or semiotic resources for making meaning that are employed in a culture – such as image, writing, gesture, gaze, speech, posture" (Jewitt, 2009, p. 1). We use the adjective *vibrant* to extend Jewitt's characterization to animate multimodality to capture the processual and experiential aspect of landscape pedagogy and to echo the traditional Anishinaabe (Ojibwe) stance toward knowledge production. A working definition for vibrant modalities then, is: the kin-based social interpretation of meaning-making as an emergent property at the intersection of human modes of communication in relation to the vibrant environment. The multiple conceptual cartographies reveal complexities that are united in the common goal of learning in the landscape.

The authors of this chapter, Michel Zimmerman Jr., Margaret Noodin, Patricia Mayes, and Bernard Perley, come from diverse perspectives, academic backgrounds, and indigenous language experiences. The principal investigator, Margaret Noodin, sought out researchers from linguistics and anthropology to provide cross-disciplinary perspectives. Mike Zimmerman is a member of the Pokagon Band of Potawatomi, and through a partnership with the Forest County Potawatomi Nation and the Electa Quinney Institute for American Indian Education, teaches the Potawatomi language at the University of Wisconsin-Milwaukee (UWM). For 7 years he was the Ojibwe language instructor at the Indian Community School in Franklin, Wisconsin. He is a specialist in historic preservation and traditional

ethnobotany. Margaret Noodin is currently the Associate Dean for the Humanities and Professor in the college of Letters and Science who teaches Anishinaabe language, philosophy and Celtic literature also at UWM. She is a published poet in several of the languages of her ancestors, including Anishinaabemowin. She is also the co-editor of the annual Algonquian Papers (MSU Press) and editor of Ojibwe. net, a website dedicated to pedagogy, stories and songs in Anishinaabemowin. Patricia Mayes is non-native from California, a linguist who uses discourse analytic methods in her research, and a Professor in the English Department at UWM. Bernard Perley is Maliseet from Tobique First Nation, New Brunswick, Canada, a linguistic anthropologist and the Director and an Associate Professor in the Institute for Critical Indigenous Studies. All four of us came together in a research project exploring Anishinaabemowin concepts of sustainability in the Great Lakes watershed. We obtained many important insights regarding indigenous semiotic landscapes that are shared in this chapter. One of the key insights was realizing that the differences between the authors revealed not only gaps in each other's knowledge and expectations about their own learning outcomes but also commonalities that brought them together to explore indigenous landscape pedagogy. Together, we offer our collected insights regarding the strength and value of landscape pedagogies when coordinating diverse conceptual cartographies, which are mutually informative and beneficial for indigenous landscape language teaching as well as our respective academic and theoretical concerns. The integration of the systems of knowledge represented by language, landscape, and cosmology are indigenous conceptual cartographies that are "braided together" to reflect traditional teachings (Atalay, 2012, p. x).

2   Semiotic Landscapes and Conceptual Cartographies

Much of the work concerning Linguistic Landscapes (LL) has focused on urban environments (e.g., Shohamy et al., 2010; Shortell & Brown, 2014a). Although the setting for our study might be considered urban in a broad sense in that it is outside a major city, the site of the study, the campus of the Milwaukee Indian Community School, is self-contained and has a lot of open space. (See Strand One below for a more detailed description.) Thus, this setting differs from most urban environments. Another difference is that most existing LL research has focused on linguistic signs produced by human actors. Indeed, Ben-Rafael et al. (2006) argue that linguistic landscape objects are any language or communication produced and displayed by public or private institutions and individuals in public places. As they explain, the linguistic landscape of a place

> constitutes the very scene—made of streets, corners, circuses, parks, buildings—where society's public life takes place. As such, this scene carries crucial sociosymbolic importance as it actually identifies—and thus serves as the emblem of societies, communities and regions (p. 8)

Given this definition, it is not surprising that much of the LL research has focused on written signs and other human-made structures such as the monuments considered in Garvin's (2010) study of the Memphis landscape.

In this chapter, we attempt to go beyond these approaches. We concur with Jaworski and Thurlow (2010), who argue in favor of broadening the notion of the linguistic landscape beyond language to include other semiotic resources such as images and practices that involve "the use of space as a semiotic resource in its own right" (p. 1). In order to capture this broader concept, they use the term *semiotic landscape* to refer to "any (public) space with visible inscription made through deliberate human intervention and meaning making" (p. 2). Because this definition still seems to focus on objects that are produced by humans, we argue in favor of an even broader definition of the semiotic landscape, which includes signs and objects produced by humans as well as entities and objects that exist in nature. We argue that natural entities such as plants, animal tracks, and birds function as "signs" in that they can become part of the situated social interaction, as participants notice them and incorporate them into their ongoing (semiotic/linguistic) actions.

As mentioned, this chapter also introduces the notion of *indigenous conceptual cartographies* to describe the multiple ways that indigenous teachers conceptualize language, landscape, and cosmology. There are the physical artifacts of cartographic representation such as maps, signs, and the landscape itself that seem self-evident, but we also include the intangible cartographies such as ideas of the landscape, concepts of sustainability, and the relationships between language, landscape, and cosmology. From the indigenous perspective, as will be illustrated below, these conceptual cartographies are not mutually exclusive; rather, they are integrated across semiotic domains. These integrations are always in a state of emergence as human subjects interact with all the relations in the landscape. We use the descriptor *vibrant modalities* to reflect our observations of the dynamic processes that contribute to the maintenance of indigenous sustainability practices drawn from eons of experience in heritage landscapes (that has been glossed as traditional knowledge in current literature) as well as the understanding of sustainable relations across semiotic domains. The notion of *semiotic domain* highlights the many areas of knowledge that are intertwined in pedagogy in the landscape. Not only are there different biomes (wetlands, tall-grass prairie, oak savannas) and entities (animals, birds, plants, rocks, and humans), but there are different conceptual domains such as linguistic, geophysical, and spiritual. We illustrate the give-and-take of knowledge production through experience in the landscape. In order to accomplish this, we used a method variously referred to in the literature as a "walking tour" (Garvin, 2010), "narrated walking" (Stroud & Jegels, 2014), or in some cases, simply, "walking" (Pauknerová & Gibas, 2014).[1] Although walking has been used as a research method for some time in sociology and anthropology (Shortell & Brown, 2014a;

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[1] The next section contains four strands, each composed by an individual co-author of this chapter. Although the co-authors use several different terms, including "(walking) tour," "immersion walk," "walkabout," and simply "walk," all of these terms refer to the same event, a pedagogically motivated walk through the ICS landscape led by one of the language teachers.

Pauknerová & Gibas, 2014), we illustrate how it can also be a pedagogical strategy. Pointing out the advantages of using walking as a method to research cities, Shortell and Brown (2014b) draw on the work of sociologist Georg Simmel to explain the significance of the visual: "That we get involved in interactions at all depends on the fact that we have a sensory effect upon one another. Unlike auditory stimuli, visual interaction is more intimate and reciprocal" (Simmel, as quoted in Shortell & Brown, 2014b, p. 2). Simmel also pointed to the significance of space, noting such characteristics as "fixity, proximity, and mobility" (Shortell & Brown, 2014b, p. 2). Thus, we argue that walking through the landscape is a good way to teach language that is centered in semiotic and cultural meanings.

Of the studies, mentioned above, that use walking as a research method, our approach is perhaps most similar to that employed by Pauknerová and Gibas (2014), who allowed the Rokytka River in Prague to guide their research about the city, its neighborhoods, and semiotic landscape. Their phenomenological background led them to focus on the relation between walking and experiencing. In addition, they did not plan their route in advance, but rather allowed the path of the river to guide them, and we used a similar strategy in our walk around the grounds of the Indian Community School. As this passage illustrates, there is much to recommend walking, not only as a research method, but also as a way of teaching:

> At many points the Rokytka is fenced off from the city visually but also aurally. The sight of greenery with no intruding signs of the surrounding city, combined with air full of birdsong with no traces of either urban cacophony or single urban noise such as traffic and the taste of freshly picked apples or pears resulted in a sudden realization of being lost. At first we did not realize it, but all of a sudden we did, and it became one of the prevailing feelings. (p. 184)

Of course, the authors were not actually "lost," but rather "follow[ing] the stream also meant to lose connection to any of Prague's supposedly well-known topography due to the nature of the sensescape around the Rokytka" (p. 184). These points illustrate the power of the landscape to make connections between language, culture, and community, a power we hope to harness in our teaching.

We decided to use a traditional indigenous teaching methodology to weave together the diverse perspectives each author brings to the language and landscape pedagogy of the Milwaukee Indian Community School (ICS) at Franklin, Wisconsin. Indigenous language instruction at the ICS offers insights and critical challenges to LL pedagogies that have focused primarily on public signage (e.g., Chern & Dooley, 2014; Hancock, 2012; Gorter & Cenoz, 2015; Rowland, 2013; Sayer, 2010 and others). The school building itself is part of the pedagogy in its design, its landscape orientation, and the materials used in construction. The school is featured in *New Architecture in Indigenous Lands* (2013) and is celebrated for its design as a "living thing" (Malnar & Vodvarka, 2013, p. 95). Quoting architect Antoine Predock,

> If you look at the building from the air it is almost like a serpent moving around, and exploring the landscape. It moves and twists and turns...where the building was almost given a kind of animation, where it took on an animal nature as it explored the different parts of the site, and then clicked into different points along the way with a particular classroom, or gathering area, or science lab. The views out from the building are really important; it is so fortunate there is so much land to look across. (Malnar & Vodvarka, 2013, p. 95)

One of the most important design parameters was to make the inside and the outside as seamless as possible. Another parameter was to make the building as culturally sensitive as possible. To that end, Chris Cornelius was hired to assist Predock with incorporating Indian culture and nature (Malnar & Vodvarka, 2013, p. 93). One feature that related the inside to the outside is the arrangement of beams in the ceiling and the brass banding on the floor to trace the migration patterns related to the site. Cornelius states,

> We call this migration because the students are coming in and out all day. And it also has a connection to the site. The administrators of the school early in the process talked a lot about how the students who have graduated from the school actually came back after they leave eighth grade. So, my idea about migration is that they can come back. All of these bands on the floor actually refer to different creatures that migrate across the site, like ducks and geese, robins, cardinals, butterflies, and eagles: all sorts of things actually come across the site. So that is why the different brass banding occurs and that is translated into the ceiling. (Malnar & Vodvarka, 2013, p. 95)

Other features include the use of building materials such as mature pine trunks, provided by the Menominee, which were split to wrap around metal columns to remind people of the presence of trees. In turn, they support the beams that represent the branches holding the roof; or, canopy of leaves. Cornelius states,

> The thing we tried to do here was to think about what the cultural values are and translate them into architecture. Not to represent them or to make an icon. Some people have a bit of a hard time when they look at this building; they ask why it is really Indian, until you start to talk about it. Our intention here is to make that stuff experiential, because ultimately it does not have any resonance with the culture unless it is experiential. (Malnar & Vodvarka, 2013, p. 98)

Tracing migration patterns of the various living beings that crisscross the site of the school and the immediate landscape also reflects how the local is intertwined with global movements of species of plants, insects, animals, humans, as well as languages, cosmologies, and conceptual cartographies. The school's landscape pedagogy is an assertion of indigenous sovereignty against the long history of colonialism and the detrimental effects of colonial strategies of assimilation. Similarly, the growing influence of globalization brings new pressures to indigenous peoples and their traditional languages, landscapes, and cosmologies. The Indian Community School serves as a reminder of the determination and resilience of indigenous peoples as they work to sustain their ways of being in their worlds.

The student population represents many of the American Indian communities in Wisconsin and a number of other nations in North America. The school offers language instruction in four of the languages native to the area which represent two language families. Ojibwe, Potawatomi, and Menominee are Algonquian languages. Oneida is an Iroquoian language. All four of the languages are polysynthetic. Our chapter offers an implicit critique of approaches to language pedagogy that focus only on classroom experience, disregarding other contextual factors such as the ones we consider here. We offer a coordinated participant-observation of a typical "language in the landscape" instruction in the Ojibwe language class. This approach

allows us to meet the same learning targets for fluency by combining lessons in vocabulary, grammar and culture. As the teacher and student share time in the ecosystem they continue the trajectory of Anishinaabemowin in the Great Lakes.

3   Our Perspectives on the Walk

In this part of the chapter we present our respective perspectives to highlight the many strands of experience that are woven together in our common goal of understanding the connections between language instruction and the landscape of the ICS.[2] In addition to the authors, several people participated in the walk, including Valerie Clark (the Ojibwe Language Apprentice and UWM alumna), two former ICS students (now attending high school in Milwaukee), Nathan Breu (a graduate student at UWM), and Kevin Abourezk (a journalist who was writing a story about ICS for indianz.com). As mentioned, the co-principal investigators came to the project with distinct academic backgrounds. Our research sought to answer questions regarding indigenous conceptions of sustainability, landscape pedagogy, and language instruction. The results were illuminating in several ways. What follows are the strands of different perspectives during one language and landscape walk on the grounds of the Indian Community School.

3.1   Strand One: Mike, the Teacher/Cosmologist

In this section, as the language teacher and guide of the (approximately) one-mile walking tour, I will discuss the areas I took the group, as well as the plants, and some animals, that were observed there. The ICS grounds have a few distinct biomes present on their acreage. There are 180 acres, or so, of property of which much is prairie and open field. There are wetlands present, some more ephemeral than others, as well as wooded areas and remnant native oak savannah. I have taught at ICS as the Ojibwe Language and Culture Instructor for 3 years and have previous experience teaching at the college level in both Ojibwe and Odawa/Eastern Ojibwe as well as serving as a language consultant in Potawatomi language for Pokagon Band of Potawatomi Indians, of which I am an enrolled member.

On the day of the tour, we managed to gather a handful of people to come and observe the largely monolingual descriptions of the places we were walking to and the beings that grow there. The nine individuals who participated in the tour fell into four groups, each with different expectations and learning outcomes. Bernard Perley, Patricia Mayes, and Kevin Abourezk were all involved in recording video,

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[2] This chapter is based on research the co-authors conducted at the school with the permission of the school administration, parents, and the teachers (IRB on file).

audio, and field notes because their interests concerned the way speakers of indigenous languages interact with the land while teaching. Nathon Breu and Valerie Clark were advanced students eager to take advantage of the opportunity to hear Anishinaabemowin for a full hour and wanted to test their own comprehension. The two ICS alumni were similarly interested in a brief immersion experience. As the tour guide and fluent speaker, I categorize myself in a group with Margaret Noodin who was also using Anishinaabemowin to support the experience and reflect on ways the specific landscape of the ICS works with us to teach students at all levels.

The first place we stopped can be described as a microcosm of the entirety of the tour itself. I began to describe that we were standing in a prairie, and growing near to where I stood was a stand of goldenrod. In Ojibwe, a word for goldenrod is *wezaawanagek* or 'the one with yellow bark/coating.' As I was explaining what the word meant, I could tell that only a few in the group were following along with the description, and most were not as familiar with the further descriptor of *atisijigan*, meaning 'something used for coloring,' as goldenrod can be boiled down to make a yellow dye, among other things. Only Margaret and one of her students asked in Ojibwe about the plant and some of its other uses. The next plant we discussed was common milkweed, which was also growing nearby. I explained that *niniwish* is a word most commonly used for this plant and that it breaks down further to mean 'a common/regular plant' in reference to the fact that where it grows, it tends to take over and be the most prevalent in the area. I also explained that, in the early summer, the buds bloom and sport a cluster of small flowers at the top. Before the buds bloom, however, these can be harvested and boiled down to make a soup that has been traditionally eaten not only by the Anishinaabeg, but also by other tribes such as the Ho-Chunk. Milkweed is also a favored food item of monarch butterflies, called *memengenwaag*, which is a reference to their 'wings that move in a swinging motion.' Furthermore, I explained that with careful removal of the outer bark of the stalk, the fibers from the milkweed can be made into twine and thus, rope.

One of the main elements I try to bring across in my teaching as well as in my general language use is to try and articulate a clear connection between a given word and its etymology which can often provide a more accurate description. In Anishinaabemowin, the focus is not on nouns but on verbs. Even the nouns in Anishinaabemowin have a verb affiliation with one or more morphemes related to action directly built into the structure of the root word. For example, there are ways in which to describe landforms as nouns, but to the obverse, there are ways to do the same but in verb form. If you take the word *ishpaagamig*, for instance, it can be translated as 'high hill' or any similar location. The morpheme *ishpaa-* refers to 'high' or 'up' while *-gamig* refers to 'place' with the more accurate literal description being 'high place.' Again, this is the noun form. In verb form, we have *ishpaagamigaa* which means 'it is a hill/high hill.' With the brief transformation of *-gamig* to *-gamigaa*, Anishinaabemowin accommodates a modality of change wherein there is a recognition of a process in motion. At the time of observation, there is a 'high place,' but this is not to say that it has always been, nor that it may always be so. Indeed, the "high place" at the back end of the ICS property, which is in full view of many of the classrooms and thus, the students, is completely

Fig. 1 Explaining the meaning of the word *wezaawanagek*, 'the one with yellow bark/coating'

man-made, as it is composed primarily of the displaced earth from when the school was first constructed. (See the background of Fig. 1.) Many of my students were more than surprised to learn this when I divulged this fact to them during class one day, and even more so when Google Earth corroborated this via a historical timeline feature which allows one to view a property back to a certain point in the past. In this case, an image from the year 2000 depicts no such hill where there is one clearly there now.

Another main element I try to bring across in my teaching is the necessity to observe systems and how those systems work in collaboration with each other. One of the other plants I mentioned on the tour was *pakwe* which is a more common word for 'cattail.' The name refers to 'bursting' because when they soak up too much water from their roots, the seed pod will burst and disperse seeds throughout the area. I explained on our walk that cattails grow in wetlands and that humans, muskrats, red-winged blackbirds, and a host of other animals use them in some form or fashion. Many animals use them as a food source. The Anishinaabeg have used cattails for food, for insulation, for making mats, and for starting fires, among a variety of other uses. Where cattails grow, so too do other useful plants, which are often used for medicine. A common word for medicine is *mashkiki*, which further breaks down to 'strength from the earth.' A bulk of medicinal plants known to the Anishinaabeg are in swamps and wetlands, so it should be no surprise then that *mashkiig* bears a similar morphemic origin referencing 'where strength/medicine is' and is a word commonly used for either a 'marsh' or 'swamp.'

In my view, the purpose of the tour was to document the indigenous knowledge of place which can lead to a better understanding of how our concept of space can be fluid. Much of what I mentioned on the walk required the use of specific words, but I was careful to provide the caveat that any single word may simply be the

"common" or "commonly used" term so students would not be led to a static, hegemonic interpretation of any single noun or verb and be instead allowed to make their own fluid interpretation of a fluid landscape. In various areas that the Anishinaabeg inhabit, historically as well as contemporaneously, different speakers of the language may have a different fluid lexicon to accommodate their own interpretive idiolect. Ten individuals may be looking at the same object or space and describe it differently based on their own individual observation. I am in the middle of a unit currently with my middle school classes wherein we all go outside and conduct a scavenger hunt guided by Ojibwe words, their literal meanings, and a slight hint describing where or how it grows. Based on these clues, they must deduce which plant I am specifically referencing. Once that activity concludes, we then go out another day and they sketch five to seven different objects or beings and give brief descriptions of each. Back inside, we give that object or being a reference word in Ojibwe based on personal observations and descriptions. The point of all of this is to bring home the fact that the reason there are so many interpretations for any word or process is because Ojibwe is so broad in its morphemic accommodations. It should come as no surprise that speakers from different areas have different words for the same object or being.

Throughout the tour I focused much of my attention on the paths, biomes, and specific plants we encountered. As I received questions, I addressed them and then moved on to something else. The students listened and made connections to knowledge learned on previous walks or during previous seasons. They did not talk to me or to each other as much as they might in the classroom, but the few sentences they shared were more complex perhaps as a result of the contextual experience. I did not spend much time engaging with any one person mainly because much of the time was spent locating plants and landscapes while trying to articulate how these things are described in our language, how to identify them, what might grow in relation to them, where they grow best, etc. Ultimately, I feel most everyone present came away with a sense of realization of just how much yet there is to learn and how much yet there is to teach.

3.2 Strand Two: Margaret in Conversation with Students and Guests

In indigenous communities, the aim of this kind of "immersion walk" is to help everyone see themselves as a student in conversation with the living landscape. Plants, trees, animals, winds and the earth itself are continually teaching us how to move from one day to the next. The walk in *giganawendaamin akiing omaa* 'the space here where we care for the earth,' combined the views and experiences of students at all levels engaged in conversations with the environment and one another. As someone who knew all the humans on the walk that day, I was continually trying to connect conversations: across generations, across genders, across levels of fluency, across human and non-human spaces resonant with stories and lessons.

There are many ways to measure lifetimes. The most common means of categorization might be levels of physical and mental maturity, but lived experience also adds dimension to a person's perspective. This is why children who endure great difficulty or possess special gifts can seem older, while joyous elders can seem young. On this particular walk, some of the people were born before the pantribal American Indian Movement of the 1970s, which paved the way for tribally specific language revitalization, as the era of assimilation came to an end. Others were born after the Native American Languages Act of 1990, which acknowledged the extremely fragile state of many languages and finally validated the right of indigenous North Americans to use their heritage languages. The two youngest students were born in the twenty-first century and have only ever known a world where Anishinaabemowin is taught in school, but also a world where it is not spoken as a first language in any homes. Four of the adults learned Anishinaabemowin in their later years as a second language and only two of them use it daily with a high level of proficiency. Everyone present shared the mutual desire to hear the language on the land as brightly as the birds and as constant as the changing weather. Everyone continued on the walk, listening and contributing if possible, with the hope of knowing more, if only a little, by the end of the walk. Through this shared experience, elders and youth were united in practice and their lives merged as they moved from one space to another together.

The walk also included a range of genders and learning styles. In Anishinaabemowin, the third person is not gender-specific so all of the living plants and animals discussed simply exist as animate without an awkward need for the use of *he* or *she*. People, animals, plants and *manidoog* ('spirits') are defined by the way they interact unless there is a specific need to reference life-cycles and reproduction. Several of the people on this trip were gathering and cataloguing information, focused on dissemination or collection of knowledge. Others were more focused on movements and the way individuals and the group moved across the landscape. In my case, I was keenly aware of gaps in knowledge and comprehension, often repeating and performing bits of information to include more members of the group in the conversation.

It is worth noting that the most obvious challenge was comprehension. Everyone agreed at the outset to use only Ojibwe during the walk. To encourage understanding and maximize speech production in the target language, English was not even allowed as a means of translation. Non-speakers were forced to rely on gesture and demonstration. Novice-level speakers had to focus intently, and the teachers present had to compare and combine dialects and personal pedagogies.

The human and non-human interactions were constant, which emphasized the power of teaching about the land while on the land. Plants were continually appearing, offering themselves as examples, leading the conversation through seasons and cycles. As Mike talked about several of the plants, he mentioned when they begin to grow each year, when they produce seeds, and how they flower or distribute seeds. He frequently mentioned the point at which people living near the plant would harvest seeds, stalks. or leaves. Because the name and use of each plant is so important, I found that to be the information I most often repeated. As a teacher of the

language, I enjoyed hearing the direct connections between a plant and its use. In contrast to classroom instruction, I found there was no need to mention the color or location which I might normally include as part of ethnobotanical instruction in a classroom.

As I reviewed the video recording of the walk, I found my contributions were heavily shaped by my connection to trees and experience as a teacher of Anishinaabemowin. Like other teachers, I tried to emphasize the defining features of the language which center on its agglutinative nature and four primary verb types. Perhaps unlike other teachers, I echoed many years with my father, incidentally also a teacher, who sang to me of trees, walked with me among trees and even developed his particular whistle, unlike any birds in our region, to call my sister and me to come down from the trees we climbed. At one point, all of my objectives were combined as I pointed to a large white pine that stands west of the school. When I began to learn Ojibwe in the 1980s, I learned only one word for all trees: *mitigoog*. As language revitalization efforts increased, more specific words for trees began to be used. Of course, we all knew the most prominent: *wiigwaas*, 'the birch,' so important for *wiigwam* dwellings; *ninaatig*, 'the maple,' which is tapped each spring for sap; and *giizhig*, 'the cedar,' used for healing and ceremonies.

However, the white pine on the walk reminded me how important it is to share all the options, both in conjugation and vocabulary. I am heard in the video asking Mike to talk about the types of pines (see Fig. 6 below). I wanted him to let students know the difference between:

- *akikaandag* 'jack pine with red bark and short needles across branch'
- *bapakwanagemag* 'red pine with red bark and long needles in clumps of two'
- *zhiingwaak* 'white pine with gray bark and long needles in clumps of three'
- *gaawaandag* 'white spruce with gray bark and short needles spread along the branch'
- *zesegaandag* or *zhingob* 'black spruce with gray bark and very short needles'

All of the trees in the pine family are known to thrive when exposed to fire, with some cones requiring fire to open. Their evergreen needles, when powdered and made into tea, provide antioxidants, vitamin C, vitamin A and have expectorant and antiseptic properties. Additionally, pine pitch can be used as a glue or sealant while the roots can be used as strong twine for binding. The ability to use pines depends on identification, so I wanted the students to be sure to understand the various names and their morphology. The *zhiingwaak* in particular leads to a good lesson in words for something spread out. At one point I note the similarity in the name for the tree and the name for a horned grebe, *zhiingwaak dibishkoo zhiingibis* meaning 'white pine is like grebe.' (See Figs. 6 and 7 below.) In Anishinaabemowin both begin with the morpheme *zhiing-* which can be used several different ways:

- *zhiingadesin* - 'something is spread'
- *zhiingadeshin* - 'someone is spread'
- *zhiingadenan* - 'to spread something'
- *zhiingishim* - 'to spread someone'

To make the point, I put the clump of needles over my head and said, *zhiingibis indaaw* ('I'm a grebe'). I do not think that all of the details came through, but the laughter might help them remember so that eventually, if this lesson is scaffolded among others, when they study the horned grebe, a freshwater diving bird, they will realize their ancestors cleverly emphasize its ability to spread its feathers to improve diving abilities and attract a mate.

As we walked, I continued to repeat and reshape Mike's comments for our various students as others recorded the experiences from their own perspectives. The reflection on the walk from all dimensions demonstrates how often we were looking differently at the very same thing, combining our views, to create a small community with a shared relationship to the landscape.

3.3   Strand Three: Patricia, Co-principal Investigator

In what follows, I discuss my observations about language, the landscape, and pedagogy, based on the video-recording of the walk. My training is in linguistics, and I use tools associated with discourse and conversation analysis in my discussion, but I also draw on my experience with TESOL pedagogy and teacher training. Because I do not speak Anishinaabemowin, I focus on the gestures and bodily movements of the participants as well as the objects and entities with which they interacted. I have also transcribed a few linguistic forms that were made particularly salient through participants' other actions such as repeating or pointing.

Two strands of current research on language teaching have informed this project: Classroom discourse as social interaction, based in conversation analysis and interactional linguistics, examines interactional patterns, including the sequencing of utterances and other actions (Gardner, 2013; Markee, 2015); and language learning in the semiotic landscape, which as discussed above, incorporates aspects of context beyond the classroom and has often focused on publicly displayed signs that index social spaces. Research on classroom discourse considers the embodied nature of interaction in the classroom and has focused on the sequential patterning of utterances, gestures, interaction with material objects, and the setting or space in which the interaction occurs. These patterns of action by the participants essentially constitute the activity of teaching (Goodwin, 1994; Lymer et al., 2011). Although research involving the semiotic landscape also focuses on material objects, spaces, and multimodality, generally it has not focused at the micro level of interaction. In addition, as mentioned previously, it has largely focused on urban environments and linguistic signs or other objects produced by human actors.

In this project, we examine how semiotic signs that exist in nature are incorporated into human interaction at the micro level, as the participants notice them. In our current example of the walk, such signs include plants, animal tracks, and birds. Close examination of the walk shows how focusing on social interaction among humans and other natural objects in the environment provides a rich context for language learning, and it also has implications for teacher training in that the teacher

is not just a language teacher, but also a teacher of culture, science, and the relation between humans and the natural environment. Indeed, our definition of landscape furthers Jaworski and Thurlow's (2010) call to reframe this area as the study of the "semiotic landscape," which includes meaningful elements beyond linguistic signs such as visual and nonverbal auditory cues, which can either be produced by humans or may occur in nature. In our view, this is not the random inclusion of everything in the physical environment, but rather is warranted by the actions of the participants as they become aware of these objects and incorporate them in their ongoing social interaction.

My observations focus on how these nonhuman, nonlinguistic entities in the environment were instrumental in organizing the walk and on how the participants interacted with them and with each other in sequentially ordered ways (Sacks et al., 1974; Schegloff, 2007), as well as demonstrating the high level of coordination between gestures and utterances (Goodwin, 1986, 2003). Because space limitations do not allow for a description of the entire walk, I have selected several segments that demonstrate these points. Essentially, I focus on examples that show how Mike engages with the plants in his surroundings, bringing them to the attention of the other people in the group and using them to organize what he is saying. The other participants' responses, then, also become centered around these plants, and much of how this interaction is organized can be understood by examining the participants' embodied actions such as gestures, eye gaze, and the way their bodies are positioned. As Margaret mentioned in the previous section, "Plants were continually appearing, offering themselves as examples, leading the conversation through seasons and cycles." Here, I point to specific details in order to illustrate how this was accomplished.

The first segment begins with Mike standing next to a strand of goldenrod. He is holding the top of one of the stalks with his right hand, head bent down, looking at it. As the other participants gather around, he turns his head to face them, and says something, while feeling the texture of the grass with his fingers. (See Fig. 1 above.) He shifts his gaze first to one of the students and says [ge giin]. She shakes her head in response, and Mike moves his gaze to the other student, again saying [ge gin]. Finally, his gaze moves toward Margaret as he repeats [ge gin] ('as for you?'). Margaret, who had followed Mike's gaze toward the students, turns back to him and responds in overlap with his next utterance. A few moments later, Mike takes the stalk of the plant (toward the top) with his right hand and, holding onto it with his left hand, moves his right hand up and down the stalk (Fig. 2), apparently demonstrating a process, as he explains. He has been looking down at the plant during this process and only returns his gaze to his recipients just before he releases the plant (Fig. 3). Margaret has been nodding during this explanation. At the beginning of this segment, a "sign" in the environment (the goldenrod) is oriented to by one of the participants (Mike) who subsequently draws the attention of the others to it. His first gesture (manipulating the tip of the stalk with his fingers) draws the others' attention to the plant, and more specifically to the part of the plant that will be relevant in the subsequent talk, which is accompanied by more specific gestures. This example demonstrates Goodwin's (1986) contention that gestures are used to

Fig. 2 Mike gazing down while demonstrating a process with a strand of goldenrod

Fig. 3 Mike returns his gaze to the recipients just before releasing the plant

change spatial organization at specific moments in time in a way that is relevant to the developing course of activities … In essence, gestures are one place where the temporal and sequential organization of conversation intersects with its spatial organization (p. 35).

This points not only to the importance of the participants' embodied actions, but also to the importance of the surrounding environment.

The next segment I focus on occurred about 15 minutes into the walk after we had crossed a boardwalk through a marshy area and were continuing on the path.

Fig. 4 Organizing discourse through gestures at different heights

At one point, Mike stops on the side of the path and uses his foot to point to a small plant on the ground, saying [adʒītəmawano]. The recipients look at the plant and some repeat this word. Mike goes on to say more and leans over to touch the plant with his right hand. Margaret and another participant also talk. He then gestures to display different heights in the air with his right hand as he speaks (Fig. 4). He continues speaking, and Margaret responds and continues speaking and laughing with the two students. Once again, the plant is a sign that Mike uses to organize the discourse, beginning with the foot gesture and using other gestures to draw attention to the embodied and spatial attributes of the group's surroundings.

Toward the end of this segment, Mike stops again, leaning over to touch a plant on the ground, and speaking. After he moves on to continue the walk, Margaret gestures to the two students to follow her. They move over to the plant, where Margaret and one of the students bend down to look at it more closely (the other student and Valerie are looking on from a standing position). Margaret touches the plant and points to two different parts of it, first manipulating one and saying [odemin] ('strawberry'). She then tosses that part aside and touches another part saying [adʒītəmo] (Fig. 5). Margaret has used sequentially organized gestures and bodily movements to direct the attention of the women in the group: first toward herself (the beckoning gesture); then toward the plant (bending down and touching it); and finally, to index how her ongoing talk about the plant is organized (tossing aside one part and touching the one that has become relevant at that moment). She explained to me later that strawberries are considered a women's plant and serve as semiotic signposts in lessons about puberty and love.

A little later in the walk, Margaret drew everyone's attention to a very tall pine further ahead just off the path, by speaking and pointing toward it. Mike responds with *oh* and walks over to the tree, as the rest of the group follows. He touches the

Fig. 5 Margaret synchronizing gestures and movements with language to direct attention

branches and smells them. I have the impression they are doing a word search because Mike points to Margaret after she has said something, and then as everyone is gazing up at the tree's stature, Mike says [akikaandak] ('jack pine with red bark and short needles across branch'), which he then repeats twice. A few moments later, Mike draws the participants' attention to a sample he had taken from another pine, by holding it up to show how the needles are spread out. He is holding it in his left hand and brings his right palm toward the needles in a gesture that smashes them down (Fig. 6). Then, he moves his hand away, showing that they spring back to their original positions (Fig. 7). He twirls the twig in his hand and smashes it again. All of this is of course accompanied by verbal explanation and some responses from Margaret. A few moments later, Mike brings his right hand to his head and spreads out (three of) his fingers. He says [dʒiiŋəbɪʃ] ('grebe'), which Margaret repeats. She reaches out her hand and walks toward Mike to take the sample and then holding it up to her head, says [dʒiiŋəbɪʃ ɪndaʊ] ('I'm a grebe'), facing the two students and laughing.

As mentioned, entities in this landscape that are not necessarily products of human activity get noticed by the participants and are incorporated in and help organize their activities and talk. The next two examples show this point more explicitly. In the first, as the group is walking along the path, Mike says *oh* and stops and bends down, to touch the leaves of a plant on the ground. He says [omakakiibək] ('plantain'). Margaret repeats this word, laughing. Margaret and Mike repeat it several times, and then Mike continues. He makes a gesture with both hands that suggests manipulating the plant in some way (Fig. 8), and then does a gesture with his right hand, as if rubbing something on his left arm (Fig. 9). (I later confirmed that this plant can be used to treat skin inflammation.) This example shows quite explicitly the process of noticing this natural sign and using it to organize the ongoing

Fig. 6 Mike drawing participants' attention to pine needles smashed against his palm

Fig. 7 The pine needles are released, springing back to their original positions

interaction. Mike's initial *oh* is a "change of state" or "acknowledgment" token, which indexes a change in the speaker's state of knowledge (Heritage, 1984; Heritage & Clayman, 2010). In the previous example, Mike used *oh* to acknowledge that his state of knowledge has changed because Margaret drew his attention to a tree on the side of the path. In this example, the position of *oh* suggests that Mike has noticed the plant simply because it was there. He is responding to it rather than to something another participant has said or done, as was the case in the previous

Fig. 8   Mike manipulating the leaves of a plantain plant

Fig. 9   Mike gestures to indicate rubbing something on his left arm

example. He then organizes his subsequent utterances and gestures around it, first telling his recipients the word for it and then talking more about its uses.

The final example occurred a few moments later. As the participants continued along the path, a number of small birds flew overhead. Once again, Mike uses the *oh* acknowledgement token (followed by another utterance), as he looks upward. Several of the other participants turn their bodies and follow his gaze (Fig. 10).

Fig. 10 Participants follow Mike's upward gaze at a number of small birds

Margaret looks in the opposite direction and says something, as she is beginning to point with her right hand to where two or three birds are landing on the branches at the top of a tree. Some of the participants turn their bodies back to look in the direction she is pointing (Fig. 11). She then says [gɪtʃgɪtʃɡəneʃu] ('chickadees'). Mike laughs and she repeats this word, also laughing. Then, Mike begins speaking as he turns his body to face north, pointing off in the distance with his right hand. The other participants turn their bodies to face in the direction he is pointing. Margaret says something in response. The participants continue walking moments later.

As with the previous examples, the appearance of the birds was treated by the participants as a sign that was used to organize their subsequent interaction. However, this example is different and perhaps a bit clearer: In the previous examples, the participants entered the space occupied by the plants along the path, making it possible to attribute the agentive actions (i.e., responding to these inanimate entities) to the humans. On the other hand, in the last example, the birds are animate entities that unexpectedly entered the space occupied by the participants and in some way caused them to change their ongoing activity away from what might have occurred if the birds had not appeared.

I hope to have demonstrated with this brief discussion and a few examples how intimately involved the landscape is in organizing social interaction. Although the same argument might be made about cityscapes, the objects in such urban environments are human-made. In a more natural landscape, the objects and entities are less subject to human control, and in some cases, may present themselves to conversational participants through their own actions, thus seemingly creating a context in which a response is not surprising, even if it would not be seen as required or "conditionally relevant" (Schegloff, 1968).

Fig. 11 Some participants turn to follow Margaret's pointing

An additional point that struck me as I was summarizing my perspective is how much I believed I could understand because of the embodied nature of the actions and interactions I observed. Of course, my hypotheses about the meanings of the various linguistic forms I tried to transcribe were fairly simple and sometimes incorrect. Still, guessing the meanings of linguistic displays can be important in the process of learning a language, at least for some learners. Thus, from a language learning perspective, this event, with its combination of contextual signs (gesture, language, and objects/entities in the landscape) reveals vibrant modalities, a powerful force that motivates the desire to understand and communicate.

3.4   Strand Four: Bernard, a Non-speaker and Event Videographer

In this section, as the videographer, I present the perspective of the video camera as one that distances the videographer from the event in such a way that the eye of the observer balances the broad view of the scene and the landscape with the focused detailed view of particular objects, interactions, or gestures. I am a non-Anishinaabemowin speaker which allowed me to focus on the interactions between Mike and the other participants in the language/landscape walk. I discuss the advantage of "camera distance" recording the group's walk-about, their conversations, and occasional focus on gestures and explanatory moments all while keeping the landscape context as my framing guide.

3.4.1 Landscape Pedagogy as Context

As we planned for the walk and recording of an ICS lesson in the landscape, our respective roles became clear. My lack of knowledge in Anishinaabemowin together with my anthropological ethnographic training made my role as videographer an easy decision. I also decided that the many modalities of communication in the landscape were some of the pedagogical strategies I wanted to highlight. (See the description of multimodal or embodied interaction in Strand Three above.) I was interested in the differences in gestures and postures of the teacher and the students between the classroom instruction and the landscape instruction. I found the project very compelling because I have a deep interest in the language teaching strategies when students are taken into the landscape.

My own experience with elementary school Native American language instruction was part of the Maliseet language program at Tobique First Nation, New Brunswick, Canada. The on-reservation school, Mah-Sos School, had about 100 students from grades K to grade 6. All students were required to take Maliseet language class at least two times a week and sometime three times a week. I observed language instruction in the classroom and the occasional in-the-landscape instruction and learned from those experiences that there is a difference between language instruction in the classroom and pedagogy in the landscape. The landscape at Mah-Sos School is the traditional lands of the Wolastukwiyok and the "signs" in the landscape recall oral traditions, lexicons, and lessons for being in the world, which together constitute indigenous conceptual cartographies. Lessons in a classroom simply are not able to capture and present these phenomena is the same way. For example, one day the students went on a field trip to pick sweetgrass, and they learned where to find sweetgrass, identify sweetgrass from other grasses, and learned how to pick the grass from the soil. Among the end results were that the children loved being outside, they learned more about traditional knowledge in their immediate landscapes, and they learned processes and purposes for using sweetgrass braids for cleansing and blessing ceremonies. These were all important pedagogical lessons, but there was a critical component missing. All the instruction was done in English. This is why the experience of walking and learning in the landscape at the Indian Community School is so important. I looked forward to seeing similar student engagement with the added benefit of their heritage language being used as the language of instruction. As mentioned above, the signs in the landscape in the ICS walkabout include linguistic signs such as language, proxemics, kinesics, and prosody. Other signs in the landscape are represented by the flora and fauna, the terrain, the weather, and the most complex signs of all: the human participants in the walkabout. The greatest lesson I learned was observing the active integration of all the signs in the landscape into an experiential engagement of multiple sign systems. The multiple sign systems are not closed systems; rather, they are codependent relationships that build interspecies meaning. Crucially, this interspecies world-making is an ongoing process. There were moments when we stopped our respective roles during the walkabout and delighted in being together in that landscape.

3.4.2   The Camera View

I followed Mike leading our small mixed group through the grounds of the Indian Community School with a video camera. I maintained my position at the back of the group and tried to keep the group in the frame with occasional broad field of view shots of the landscape to provide context. There were many moments when Mike would stop to point to a particular spot in the landscape and everyone would look in the direction pointed. At these moments, I would point the camera lens to where Mike was pointing (see Fig. 1). Again, as a non-speaker of Anishinaabemowin, I was hoping that I would capture what Mike was pointing out in the landscape. Sometimes, Mike would point to a plant low to the ground. Everyone would gather around to observe the plant and I would have to shift around the group to also capture both, their attention to the plant as well as the plant itself (see Fig. 4).

The ICS walkabout was a complex event that presented all participants with an array of sign systems requiring integration through shared experience. That shared experience provided opportunities for multimodal pedagogy and learning. The authors shared their respective insights after the walkabout and through the process of coauthoring this essay. The attendance by university faculty in the walkabout was not typical of Mike's landscape pedagogy. Furthermore, we all recognized that we were not in the usual classroom context as there were too many adults not associated with the school taking part in the walkabout. All the potential distractions from so many outsiders to the ICS classroom did not seem to unsettle or prompt Mike to deviate from his language teacher role. He guided all of us through the landscape focusing on immersive Anishinaabemowin language pedagogy.

4   Conclusion

The different strands of experiential landscape pedagogy that we participated in during the Indian Community School walkabout were instructive in many ways. In this conclusion, we highlight some of the most salient lessons regarding the way Mike expanded language pedagogy beyond the classroom and engaged the students (and guests) in an immersive language, landscape, and cosmology lesson in Ojibwe. Significantly, students were presented with relationships between material and ideational worlds. Among the modes of learning were the pointing, gesturing, and navigating in the landscape; the tactile holding of objects; hearing the sounds and feeling the wind and warmth of the sun; experiential immersion in the broader semiotic field where the signs in the landscape include the school building, the diverse biome of the school grounds, the many entities (birds, animals, plants, insects, clouds, wind, etc.) that inhabit the complex semiotic landscape; and the multimodal ideational cartographies of language learning, indigenous identity, and Ojibwe cosmology. These vibrant modalities are woven together through each instructional event, thereby scaffolding traditional ecological knowledge through experiential language instruction.

We, the authors, keep using the phrase "language pedagogy" as an inadequate placeholder for the rich experience that goes into Ojibwe language class at the Indian Community School. A better descriptor would be "world making." The multimodal aspect of Mike's language instruction is cosmological as well as linguistic. Jewitt states "Multimodality is sometimes misunderstood as an attempt to 'sideline' language" (Jewitt, 2009, p. 2). Our participation and observation of the walkabout underscores the mutual dependence of language and other semiotic resources. "A key aspect of multimodality is indeed the analysis of language, but the language as it is nestled and embedded within a wider semiotic frame" (Jewitt, 2009, p. 2). We would add that the experiential dynamic animates multimodal communication to create vibrant modalities. This is a crucial distinction to make with regard to indigenous language instruction. After over 500 years of colonial pressures to assimilate to colonial languages and culture and the current impulse to acquiesce to the assimilative appeal of globalization, we see at the Indian Community School a mode of resistance that celebrates indigenous cosmologies. The vibrant modality of indigenous languages and cultures may offer localized paths to sustainable futures for global citizens.

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