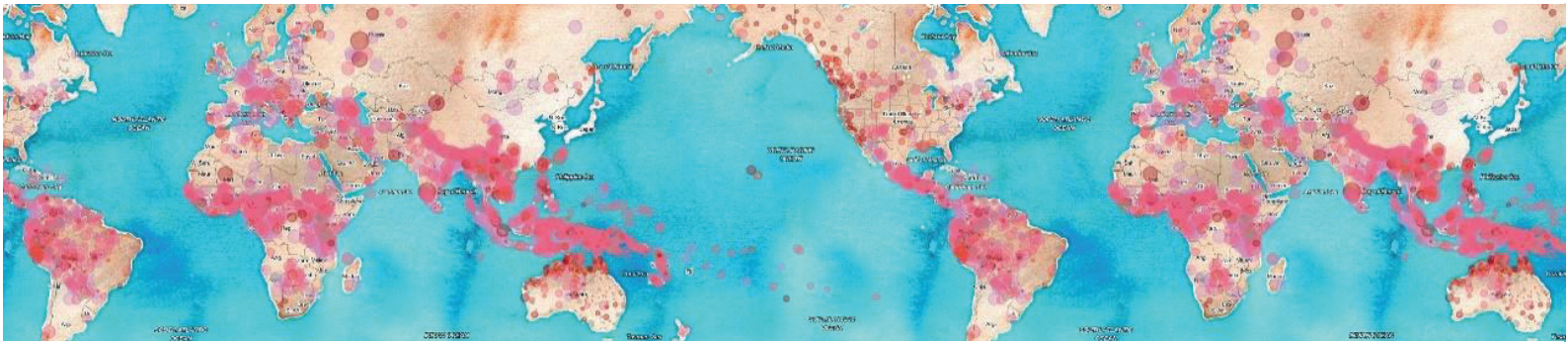
Mapping Indigenous landscape perceptions

REBEKAH R. INGRAM



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Mapping Indigenous landscape perceptions

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Abstract

Spatial knowledge is encoded into language in the form of place names and can describe concepts such as the physical features found at a specific location. While most North American place naming studies, including those involving Indigenous place names, focus on linguistic analysis, place names also involve a spatial component, making mapping a natural tool for this type of data. Spatial analysis of place names has become particularly significant given that recent research demonstrates that the delineation of landscape and waterscape are not universal.

In this paper, I demonstrate how, utilizing examples from Kanyen'kéha (Mohawk) and Onödowá'ga: (Seneca) descriptive place names, the map can act as an interpreter to facilitate cross-cultural understanding of concepts that might not otherwise be apparent in the absence of a visualization. This method can be used as a complement to linguistic analysis whereby the morphemes of descriptive place names are used as input data with the resulting output providing varying views of spatial delineation. I also discuss how these concepts are related to language documentation and revitalization and how this method could help to enhance those initiatives as part of a holistic process that considers the intersection of language, culture and landscape.

Keywords: place names; ethnophysiography; mapping; Mohawk; Seneca

Background

Describing the landscape and, analogously, waterscape, through language allows for a differentiation of important locations within an overall environment (Stewart 1975) and the ability to distinguish one specific place out of a set of places. Descriptions of aspects of space such as physical features, or the resources found at that location, often form elements of place names or simply evolve to become descriptive place names. Although subject to the conventions adopted by a specific cultural group as well as "the form of each language" which "limits the range of terms that can be coined" (Boas 1923: 9), descriptive place names are a means of transmitting landscape knowledge **(**Secretariat of the Convention on Biological Diversity 2007) and are used universally (Stewart 1975). Thus, the study of these names can lend insight into the diversity of global environments as well as how other sociocultural groups delineate, view, and relate to these environments.

Indigenous languages in particular may hold information regarding the landscape and relationships with the environment reflective of Indigenous Knowledge, "cumulative, collective experience" of specific locations often spanning generations (Brodnig & Mayer-Schönberger 2000). The encoding of this information into linguistic forms occurs as a result of interaction with a landscape over an extended period of time and is passed on during language acquisition and enculturation. In North America, Indigenous descriptive place names were used by non-Indigenous people in conjunction with non-Indigenous names, and this co-mingling would eventually become one aspect of the American English, Canadian English and Canadian French naming conventions. While records of historical Indigenous names can be found through the course of archival research in journals, travel documents, administrative documents, and on maps, many of these names, such as *Massachusetts*, *Connecticut*, *Quebec*, and *Canada*, are still in use to the present day. Although a number of factors has led to language shift of many North American Indigenous languages into English or French, the knowledge embedded within these names is preserved in the present-day place names themselves, as well as in historical records, and within the oral histories of Indigenous communities.

Studies of Indigenous place names in North America have been presented in a variety of formats using differing methodologies, but generally involve some form of linguistic interpretation from an Indigenous to a non-Indigenous language. Surveys undertaken by those without philological or linguistic knowledge (or those unfamiliar with the typology of North American Indigenous languages), especially prior to the 1920s, sometimes simply supplied a translated or interpreted place name in English without any sort of analysis of the name. Other place name interpretations are the result of overall language description and documentation of a language, which included place names or naming elements, but did not specifically focus on their study.

In the 1920s, place name studies began using a specific methodology that involved collecting many names from the naming language, including both present-day and historical names, followed by linguistic morphological analysis. This methodology was used in studies such as Boas (1934), Lounsbury (1960) and Jett (2001), all of which applied morphological analysis to interpret the specific components of the place name. As a result, these

studies impart more accurate interpretations of names through the analysis of individual morphemes. However, even with a specific methodology, as well more thorough understanding of linguistic systems, a significant problem remains as summarized by Corner (1999: 5), who states that the concept of landscape is "neither universally shared nor manifested in the same way across cultures and time. … To assume that every society shares an American, English, or French view of landscape, or that other societies possess any version of landscape at all, is to wrongly impose on other cultures one's own image". The idea of differing landscape perspectives has also been reflected in the more recent work of Levinson (2008) and is the topic of a 2011 volume edited by Mark, Turk, Burenhult and Stea entitled *Landscape in Language: Transdisciplinary perspectives*: each of these sources emphasize that delineation of landscape and waterscape is not universal and varies from one sociolinguistic group to another. These differences are evident even between different varieties of English as demonstrated through interpretations of the word 'creek,' which means 'an inlet in the coast-line of the sea running up to a river' in British English, but 'a watercourse smaller than a river' in North American, Australian and New Zealand varieties of English (Bromhead 2011: 58). Ingram, Anonby and Taylor (in press) propose that the delineation of landscape lies at the intersection of language, culture and physical environment (Figure 1), and Turk, Mark and Stea (2011) call the emerging multidisciplinary field which studies the interaction of these concepts *ethnophysiography*. Delineations of space that form elements of descriptive place names, including physical features of land- or waterscape, are encoded into language through an ethnophysiographical lens.

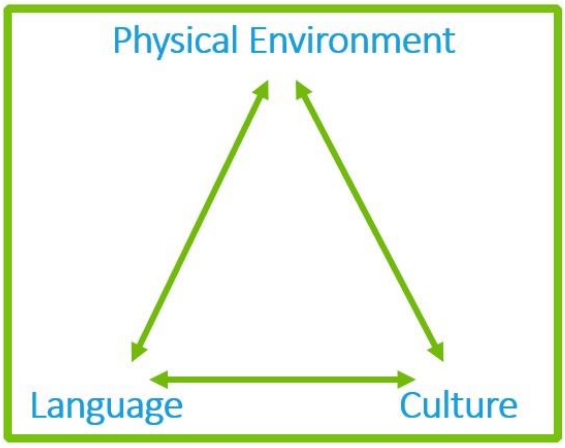

Figure 1: Delineation of landscape lies at the intersection of language, culture and physical environment

While there has been extensive focus on the linguistic aspects of descriptive place names, less attention has been paid to their spatial aspects. Descriptive place names form not only linguistic patterns, through the repeated use of the same landscape construct or descriptor, but also patters of spatial use, in terms of what landscape element is seen as significant, how it is described and where it is physically located. Examining these patterns in conjunction with linguistic analysis aids in the understanding of the ethnophysiographical lens. Thus, mapping presents the opportunity to look at language data in a way that linguistic analysis alone does not, which is of particular importance for data that deal with ethnophysiographical spatial elements. Therefore, while a similar technique to that introduced in this paper has already been used within the Survey of English Place-Names (University of Nottingham 2018) based upon the research of British place naming conventions (such as Ekwall and Gelling), the issue of ethnophysiography of English-language predecessors such as Anglo-Saxon, Old Norse or Brittonic may prove to be an area for future study since Corner (1999) states that time may be a factor in landscape conceptualization.

After a process of linguistic analysis, linguistic information and spatial information can be connected through the use of a digital mapping platform to create a visual model of the location of specific place name elements. The location of each element can be marked using a symbol, and different elements can also be distinguished through different symbols. The symbols of individual place name elements will create spatial patterns on a map, and therefore allow for a better understand how others see space through different ethnophysiographical frameworks. In short, the map can be used to act as the "translator" or "interpreter" between different views of land- and waterscape delineation, and the resulting visualization, as well as the overall process of modelling spatial data, can be utilized as a tool to help facilitate cross-cultural and cross-linguistic communication.

The remainder of this paper outlines a method for mapping linguistic spatial elements using examples from the descriptive place names of two related languages of the Northern branch of the Iroquoian language family **(**Mithun 1996). Kanyen'kéha (known in English as "Mohawk") is considered to be at a level of 6b, or "threatened" on the Expanded Graded Intergenerational Disruption Scale (Simons & Fennig 2018), and Onödowá'ga: (known in English as "Seneca") is considered to be at a level 7, or "shifting" (Ibid)**,** although the state of both languages varies between communities. Both languages are used by members of the Haudenosaunee (known in English as the Six Nations or Iroquois Confederacy (Haudenosaunee Confederacy 2018**))** whose traditional territory comprises parts of present-day New York, Northern Pennsylvania, Ontario and Quebec (Snow 2008). The Kanyen'kéha are the easternmost Nation of the Haudenosaunee (Ibid), and their traditional territory lies in the Mohawk River valley approximately 60 kilometres from Albany, NY (Google Maps 2018). The Onödowá'ga: are the westernmost members of the Haudenosaunee, with traditional territory situated on the Genesee River in the vicinity of present-day Rochester, NY (Ibid**)**. Although some of the Haudenosaunee languages are more closely related than others, Julian (2010) assesses the percentage of shared vocabulary across Haudenosaunee languages (excluding the Tuscarora, who joined the

Haudenosaunee around 1712 (Snow 2008)) as not less than 80%, with some percentages as high as 95%. Given the close linguistic and cultural ties between the Haudenosaunee, there is a high probability of intelligibility of place names between all Haudenosaunee languages.

Both Kanyen'kéha and Onödowá'ga: are polysynthetic languages (Mithun 1996; Chafe 2014) exhibiting a "strong verb-centeredness" (Chafe 2014: 5) through the use of verbal roots, around which phrases are composed using affixes and/or by incorporating other roots (Mithun 1984a; Chafe 2014). Chafe highlights this characteristic, saying "Of special interest is the fact that the words of these languages express not only ideas of events and states, as is the case with the verbs of many languages, but include within a single word the participant(s) in those events and states." (5). Thus, the "single word" of a Kanyen'kéha or Onödowá'ga: place name may function as an entire grammatical utterance. Other features of note of these two languages are a lack of bilabials (historically, but see Bonvillain 1974) and pitch-accent (Mithun 1996; Chafe 2014). I am grateful to be working with a number of Haudenosaunee people from various communities following the protocols outlined by the *Kaswentha*, called "the Two Row Wampum" in English, as well as OCAP principles (FNIGC 2018, see references for details) which outline Ownership, Control, Access and Possession of this data by these communities. Further details regarding collaborative research with Indigenous communities can be found in Renee Pualani Louis' "Can You Hear Us Now? Voices from the Margin: Using Indigenous Methodologies in Geographic Research", Nicole Latulippe's "Bridging Parallel Rows: Epistemic Difference and Relational Accountability in Cross-Cultural Research" and Cargo, Delormier, Lévesque, et al "Can the democratic ideal of participatory research be achieved? An inside look at an academic–indigenous community partnership" (see references).

Morphemic Mapping (M2)

The method outlined here, which I call 'Morphemic Mapping' (abbreviated as M2 hereafter) is presented within the context of place name studies and, following the methodology described in first section, generally begins with building a corpus of place names (either contemporary, historical, or both), followed by linguistic analysis of individual names. If historical data are being used, orthographic and phonological analysis may be required as the first part of the analysis in order to ascertain an approximation of the original place name (see Ingram, Anonby and Taylor, in press). Following this step, names can be analysed morphologically for grammatical and semantic information for the purposes of a general interpretation and establishment of possible naming patterns. The grammar of a descriptive name will vary depending upon the rules of the language in question, but the descriptor may also vary, or be entirely absent, i.e., a descriptive place name may consist solely of a landscape or waterscape feature, depending on naming and cultural conventions, and grammatical conventions and structures.

An initial analysis of the morphological construction of Kanyen'kéha and Onödowá'ga: place names (following an analysis of the orthography of historical names as well as accounting for the effects of language contact) has established that descriptive names denote land- and waterscape features, as well as villages that are located in the vicinity of these features. Because they are primarily based upon landscape features, it is not uncommon for morphemes or entire place names to be used repeatedly; the name 'Pleasant Valley' or the term 'valley' itself provide examples of this phenomenon in English. It is precisely because these elements are used repeatedly that they can provide the basis for a visualization in the form of input data. Therefore, the second step of the M2 method, following place name compilation and an initial analysis is morpheme compilation, where all instances of morpheme use are noted across all place names. Following compilation, the physical locations of all instances of a specific morpheme used in place names are marked on a map and a visual pattern emerges. While even a static map can yield insight, platforms such as Nunaliit, developed at Carleton's Geomatics and Cartography Research Centre, allow for the use of layers and modules which enable the user to easily compare and contrast the visualizations created by inputting different morphemes, combinations of morphemes, or only certain instances of the use of a morpheme or morphemes. This essentially allows for a visual comparison and differentiation of semantic information at specific place name locations and can be likened to traditional linguistic field methods in that it compares and contrasts meaning through a visualization of spatial data.

The next section of this paper demonstrates the details of my own use of this technique which has helped me to understand some aspects of Haudenosaunee relationships to land and water as well as to achieve insight into differences in the ethnographic frameworks of English and Kanyen'kéha which were not noticeable to me using linguistic analysis alone. These examples demonstrate how the visualization of dynamic mapping acts as a complement to linguistic analysis of place names, and can help to bridge differences of landscape perception and land relationships.

Mapping *-hnaw-*

In addition to the repetition of specific ethnophysiographically-based landscape morphemes within the place names of a specific naming convention, it is also common to find the repetition of specific place names themselves across Haudenosaunee territory in related Haudenosaunee languages (Ingram, Anonby, & Taylor 2018). One example of this phenomenon is the place name *Kahnawake* which is translated as 'at the rapids' (Mithun 1984b; Chafe n.d.) and is the name of the present-day Kanyen'kehá:ka ('Mohawk') reserve located across from

Historical Name (Orthography)	Modern Name	Translation	Source
Ganowungo	Conewango, NY	'In the rapids'	Beauchamp, 1907, Chafe, n.d.
Tonawanda	Tonawanda, NY	'He is in the rapids there'	Chafe, n.d.
Caughnawaga	Fonda, NY	'at the rapids'	Mithun, 1984
Kananouangan	Conewango Township, Warren, PA	'in the rapids'	Bellin, 1744; Ingram 2018
Gahnawandeh	Genesee River, Rochester, NY	'at the rapids'	Beauchamp, 1907; Ingram 2018
Kachnawarage	Chittenango Creek, Sullivan, NY	'there are rapids at that place'	Beauchamp, 1907, Ingram 2018

Figure 2. Instances of Kahnawake

the island of Montreal in Quebec, Canada. Figure 2 highlights several variations of this place name.

It is important to note that the waterways located at some of the historical locations of *Kahnawake* have been modified; in particular, the Erie Canal now utilizes the Mohawk River (Langbein 1976: 9), and the St. Lawrence Seaway utilizes the St. Lawrence River (Phillips 2000). This means that the hydrological phenomenon denoted by the original place name may no longer exist in those places. However, both the historical and the modern-day instances of the place names can be used to create a visualization indicating where these waterscape features were once located.

In order to create a spatial visualization, I first compiled a list of instances of Haudenosaunee place names whose meanings have been interpreted as containing some form of the English word 'rapid'. I then analysed these morphologically; some of this analysis is presented in Figure 3. I determined that the root of these names is *-hnaw-* in Kanyen'kéha and hypothesized that the root would be similar in Onödowá'ga:; in fact, this root is identical in these languages, according to Mithun (1984b) and Chafe (n.d.). Because many Haudenosaunee place

Kahnawake/'Caughnawaga'
[ka- -hnaw- -à:ke]
3SG.INAN rapids LOC
'at the rapids'
(Mithun 1984b, adapted by Ingram 2018)

Ganowango
[ka:- -hnõwõ- -gõ:h]
3SG.INAN rapids LOC
'In the rapids'
(Chafe n.d., adapted by Ingram 2018)

Tonawanda
[t- -ha:- -nõwõ- -te- -ʔ]
CIS 3SG.ANIM rapids to be there STAT
'He is in the rapids there' (Chafe n.d.)

Figure 3: Morphological breakdown of variations of *Kahnawake*

names are documented in a variety of orthographical conventions in several languages, I searched through my place name corpus once again, this time forgoing an English or French interpretation and focussing instead on those

Figure 4. Haudenosaunee Place Names utilizing the root *-hnaw-* (Ingram 2018)

names that appeared to utilize some form of the root *-hnaw-* itself. After locating these names in the corpus and weighing the evidence that this root appeared in the name, I pinned them to their approximate modern-day locations (where possible) to create the map in Figure 4 (previous page). What appears from this visualization is, essentially, a map of Indigenous Knowledge. Each point on this map utilizes the root *-hnaw-* to transmit knowledge of the location of rapids within waterways; this knowledge would have been of particular importance given that water transportation was the main method of long-distance travel for many Indigenous peoples, including the Haudenosaunee (Snow 2008) prior to and following European contact. While this type of travel is no longer strictly necessary in the modern day, it remains relevant for historical, cultural and environmental purposes.

In the process of compiling names, I also found that in Onödowá'ga:, the root *-hnaw-* is used in conjunction with several suffixes to form stems representing several other water features (see Figure 5). These examples demonstrate an ontological connection in Onödowá'ga: (and likely also in Kanyen'kéha) that does not necessarily exist in an American or Canadian English landscape framework; the concepts of 'rapids', 'whirlpool', 'riffle', 'well', and 'fountain' are generally considered to be unrelated entities, aside from being physical water features[1]. Maracle (2001) lends insight from Kanyen'kéha to this observation stating that 'Ohnawa' (the noun formed from the root *-hnaw-*) 'describes a situation where water (or some liquid) is moving quickly in a particular way or direction, or against the intended direction and therefore is often interpreted as a 'current', 'rapids', or as in reference to a 'spring' or 'well' where the water is being forced out from where it is' (148). Therefore, while the map in Figure 4 is reflective of Indigenous Knowledge, it is not reflective of 'rapids', as the English interpretation of this name suggests, but rather, it is reflective of semantic concepts of water current or pressure, the concept encoded in the root *-hnaw-*. Further comparative morphological work is required to more accurately define the related features, but the process of mapping utilizing the M2 method outlines not just the extent of Indigenous Knowledge and its depth in regards to the land- and waterscape, but also insight into the ontological structure of landscape concepts which differ between ethnophysiographical frameworks.

-hnaw-	-hnawatase-	-hnawenht-	-hnawer-
'rapids'	'whirlpool'	'dropping rapids, riffle'	'well, fountain'

Source: Chafe n.d., Michelson 1973, adapted by Ingram 2018

Figure 5: Stems utilizing the root *-hnaw-* to indicate semantic relationships of water features

Landscape and revitalization

Jett (2001) states that 'placenames reveal how particular cultures perceive and classify their environments: what they see as significant – economically, religiously, and so forth – about how they differentiate particular places from space in general' (Introduction). Place names are often viewed as secondary or extraneous in terms of language documentation and grammar creation; however, as outlined in the two previous sections, place names are a significant source of Indigenous Knowledge, including semantic conceptualizations of space and Traditional Environmental Knowledge, both of which demonstrate deep ties to a geographic location or landscape. These ties are also an important aspect of Indigenous pedagogies which situates experiential learning within a specific locational context (University of British Columbia 2017). Sto:lo Elder Larry Grant states 'Language ties us to land, and a language at many times will explain to you the feature of that land, or the resource that was being collected there' (Ibid). A descriptive place name and its meaning together with its spatial conception can become the context for 'knowing and learning', and the documentation of place names ensures that not only the language, but the landscape perceptions and the ways of being attached to those places are also preserved and revitalized.

Conclusion

The M2 method offers a way of creating spatial visualizations of language data in order to view landscape in different ways. Because of differences in ontology and landscape delineation, such as those outlined in this paper, and because current mapping platforms are largely built using models of space based on European language concepts, this method is best used in collaboration with Indigenous communities. When used as a complement to linguistic analysis within the context of ethnophysiographical and place name study, this method provides the opportunity to help researchers, educators, and Indigenous communities bridge the gaps in conceptual, cultural, and linguistic space.

[1] Of secondary issue is the fact that the term 'riffle' is not generally utilized in the Northeastern North American place naming convention (with the exception of several instances in Maine and Pennsylvania), and is more widely used on the West Coast of North America (USGS, 2018).

Conventions and abbreviations

Throughout this paper, the term 'morphology' refers to linguistic morphology, rather than geological morphology. Kanyen'kéha and Onödowá'ga: language morphology, and place names that are part of the Kanyen'kéha and Onödowá'ga: naming conventions are indicated in *italics*. [ ] indicates phonetic realizations

3SG	3rd person singular
INAN	Inanimate
LOC	Locative
CIS	Cislocative
ANIM	Animate
STAT	Stative

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Anishinaabe-akiing atemigak gichi-ekinoomaagegamigag carleton

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