Typology and nuance: relativization

Marianne MITHUN
University of California, Santa Barbara (UCSB)

ABSTRACT
Much of linguistic typology is inherently categorical. In large-scale typological surveys, grammatical constructions, distinctions, and even variables are typically classified as present, absent, or embodying one of a set of specified options. This work is valuable for a multitude of purposes, and in many cases such categorization is sufficient. In others, we can advance our understanding further if we take a more nuanced approach, considering the extent to which a particular construction, distinction, or variable is installed in the grammar. An important tool for this approach is the examination of unscripted speech in context, complete with prosody. This point is illustrated here with Mohawk, an Iroquoian language indigenous to the North American Northeast. As will be seen, the two types of construction which might be identified as relative clauses are emergent, one less integrated into the grammar than the other. Examination of spontaneous speech indicates that the earliest stages of development are prosodic, as speakers shape their messages according to their communicative purposes at each moment.

RESUMO
Uma grande parte da tipologia linguística é inerentemente categórica. Em levantamentos tipológicos de grande envergadura, as construções, as distinções e até mesmo as variáveis gramaticais são normalmente classificadas como presentes ou ausentes, ou como decorrentes de uma de um conjunto de opções especificadas. Este modo de trabalhar é de grande utilidade para múltiplos efeitos, e em muitos casos, essa categorização é suficiente. Noutros, porém, avança-se ainda mais o nosso entendimento se se adotar uma abordagem mais matizada, ao considerar até que ponto uma determinada construção, distinção ou variável está instaurada na gramática. Uma ferramenta importante para esta...
abordagem é a transcrição de fala espontânea gravada no contexto de enunciação, aumentada por uma análise prosódica. Illustra-se esta questão, aqui, por referência ao mohawk, língua iroquesa indígena do nordeste da América do Norte. Como se verá, os dois tipos de construção que poderiam ser identificados como orações relativas são emergentes, estando um menos incorporado na gramática do que o outro. A análise da fala espontânea indica que os primeiros estágios de desenvolvimento são prosódicos e os/as falantes moldam suas mensagens de acordo com seus propósitos comunicativos de cada momento.

KEYWORDS

PALAVRAS-CHAVE

Introduction

Some of the primary questions in linguistics are what languages share, how they can vary, and why. This inquiry involves the identification of categories for comparison and dimensions of variation. The resulting typologies can be a boon to those documenting and describing languages: they can facilitate the identification of constructions and distinctions, and alert the researcher to seek out information not yet part of the record. Much of typology is inherently categorical, both in terms of the constructions investigated and the variables checked off. The cross-linguistic comparability of typological categories has evoked discussion, such as that by Haspelmath (2018) and Evans (2020). But also underlying some typological work may be an assumption that the particular grammatical construction under study is crystallized to the same degree in all languages, an assumption flowing naturally from procedures necessarily involved in large-scale typological work. No single researcher can know hundreds of languages intimately, but a person or a team can read that many grammars in search of the crucial examples. The work can be streamlined if the grammars are grounded in a shared background in the typological literature, ensuring that all pertinent distinctions have been checked and specified.

Relative clause constructions provide a good example. There is now a wealth of typological work on relative clause types and points of variation within them, including that by Downing (1978), Comrie (1981; 1998), Lehmann (1984; 1986), Andrews (1986; 2007), Givón (2001), De Vries (2002; 2005), Comrie and Estrada–Fernández (2012), Hendery (2012), among others. It is generally agreed that basic
relative clause constructions may be restrictive (the man who lives there) or non-restrictive (the man, who lives there). Free relatives may be definite (what you want) or indefinite (whatever you want). Within these categories, there are recognized points of variation. One is position. Within headed relative clauses, the head may precede the relative clause (a head-initial construction), it may follow the relative clause (head-final), it may be contained within the relative clause (head-internal), or the relative clause may be adjoined outside of the nuclear clause. Another variable is the marking of the relative clause. There may be an invariant relativizer like English that, relative pronouns like English who, a verbal affix, or an obvious gap within the relative clause where the shared referent would otherwise be, as in English the man [I met _ _]. The relative clause itself may be fully finite, or it may show a less finite form. Still other points of variation are the possible grammatical roles of the shared referents (KEENAN; COMRIE 1977) within the relative clause and how these roles are indicated.

As techniques and technologies for language documentation have advanced, it has become possible to bring more nuance to our understanding of variation across languages, which can allow us to delve more deeply into the kinds of factors which shape variation. With the availability of corpora of unscripted speech, we can go beyond simple classification of the presence or absence of a variable to looking at contexts of use, prosody, frequency, and the extent to which a construction is installed in the grammar. Such considerations can, in turn, shed light on factors which might shape the development of grammar and the steps by which this might take place. These points are illustrated here with relative clauses in Mohawk, an Iroquoian language indigenous to the North American Northeast.

1. Mohawk

There are six main Mohawk communities, located in Quebec, New York State, and Ontario. The language is often cited as a prototypical example of polysynthesis: morphology can be complex, and single words can constitute full sentences in themselves. Lexical categories are traditionally defined for Iroquoian languages in terms of their internal morphological structure as particles, nouns, or verbs.

Particles are by definition monomorphemic, though they may be compounded.

(1) kwúh 'gee!'  
skáthne 'together'  
áhsen 'three'  
iáh 'not'  
ki' 'in fact'  
wáhi' TAG
They serve a wide variety of affective, adverbal, syntactic, discourse, and social functions. Nouns can have relatively simple internal structure, consisting minimally of a gender or possessive prefix, a noun stem, and a noun suffix, though the noun stem may be complex, and additional enclitics may be added.¹

1: Transcriptions here are in the community orthography, which is essentially phonemic. Symbols are generally close to their IPA counterparts in the sounds represented. There are just 9 consonants (t, k, s, h, ’, n, r, w, i), 6 vowels (i, e, a, o, en, on), and distinctive tone on stressed syllables. Obstruents are automatically voiced before voiced segments. The apostrophe <’> represents glottal stop. The letter i represents a palatal glide [j] before a vowel, and a high front unrounded vowel otherwise. The digraphs <en> and <on> represent single nasal vowels [ʌ̨] and [u̥] respectively. Stress is basically penultimate, though epenthetic vowels do not enter into the determination of stress. Open stressed syllables are lengthened, indicated with a colon <:>, though h can close a syllable. Stressed syllables marked with an acute accent á are pronounced with a high tone on short vowels as in iáhsen ‘three’ and a rising tone on long syllables, as in the hearsay evidential iá:ken’. In open syllables, the tone may continue to rise into the following syllable, as in wá:ní:ne’ ‘long ago’. If a stressed vowel is followed by a glottal stop, the pitch rises abruptly then falls steeply, as in rotón:’on ‘he became’. If that glottal stop is followed by another consonant, it then disappears. A similar pitch contour results when a stressed syllable is closed by h and the following syllable begins with a resonant n, r, w, or the glide i. The h then disappears, as in öniare’ ‘snake’.

The following abbreviations are used in glossing:
agt = grammatical agent; al = alienable; art = article; aug = augmentative; ben = benefactive applicative; caus = causative; csl = cislocative; cont = continuous; contr = contrastive; dec = deceptive; dim = diminutive; dir = directional applicative; distr = distributive; du = dual; dv = duplicative; ep = epenthetic; ex = exclusive; fac = factual; fi = feminine-indefinite gender; fut = future; fz = feminine-zoic gender; hab = habitual aspect; hrsy = hearsay evidential; imper = imperative; in = inclusive; inch = inchoative; ins = instrumental applicative; lk = linker; m = masculine; mid = middle voice; n = neutral; neg = negative; nmlz = nominalizer; ns = noun suffix; opt = optative (irrealis); pat = grammatical patient; pfv = perfective; pl = plural; poss = possessive; prog = progressive; proth = prothetic; prt = partitive; refl = reflexive; rep = repetitive; rev = reversible; st = stative; trl = translocative; 1 = 1st person; 2 = 2nd person; 3 = 3rd person.
Morphological nouns function syntactically and semantically only as referring expressions. Verbs contain, minimally, a pronominal prefix identifying the core argument(s) of the clause, a verb root, and an aspect suffix. They may, in addition, contain a number of additional prefixes and/or suffixes, as well as an incorporated noun stem.

(5) *Ionsahahneköntsienhete*.

i-onsa-ha-hnek-ontsien-ht-e-


‘He dipped out some more water.’

Sonny Edwards, speaker

(6) *Tentehsheia’ténhawe*.

t-en-te-hshe-ia’t-enhaw-e-


‘You will bring them back here.’

Sonny Edwards, speaker

(7) *Tha’kahnekaien:ta’ne*.

th-a’-ka-hnek-a-ient-a’n-e-


‘The water calmed right down.’

Sonny Edwards, speaker

The pronominal prefixes in verbs are fully referential in their own right. They may be coreferential with other elements in the clause, such as additional nominals or demonstratives. They may ‘agree’ with them, but they are not simply ‘agreement markers’.

All Mohawk verbs are finite. They can serve not just as predicates, but also sentences and referring expressions without necessarily any further marking. The degree to which particular verbs are lexicalized as nominals varies along a continuum.

(8) *Iakenheion’taieniquéhwa*

iak-enhei-on-’t-a-ient-ahkw-ha’

FL.PAT-die-ST-NMLZ-LK-lay-INS-HAB

‘one lays out the dead with it’ = ‘hospital’

(9) *Ronnatén:ro*’

ronn-at-enro-’

M.PL-REFL-be.friends-ST

‘they are friends to each other’ = ‘his friend(s)’
2. Prototypical relative clauses

A skilled first-language Mohawk speaker, who is also a skilled English speaker, was asked to translate the sentence ‘The children who are smart will pass’ into Mohawk. She produced the sentence in (II).

(II) Ratiksa’okòn:’a ne:ne roti’nikhonhrowá:nen
rati-ksa’=okon’a nene roti’-nikhonhr-owan-en
M.PL-child=DISTR that M.PL.PAT-mind=be.big-ST

‘The children [who are smart]’

tenhontóhetste’.
t-en-hon-at-ohtetst-e’
DV=FUT-M.PL.AGT-MID-pass-EP-PFV
‘will pass.’

She noted that the prosody can affect the interpretation. If there is a prosodic break after ratiksa’okòn:’a ‘the children’, a better translation would be ‘The children, they are very smart, will pass.’ The distinction is thus similar to that in many other languages, including English, whereby prosody can distinguish restrictive from non-restrictive relative clauses.

In terms of the kinds of variables usually mentioned in relative clause typologies, the construction in (II) could easily be classified as i) head-initial, ii) marked by a relativizer ne:ne, iii) with a finite relative clause, and iv) with the role of the shared argument in the relative clause specified by the pronominal prefix roti- ‘they’ on the verb ‘they are smart’.

In unscripted speech, however, both monologue and conversation, such constructions are actually exceedingly rare.²

² Material cited here is drawn from a corpus of nearly 300 recordings of monologue and conversation, varying in length from a few minutes to a few hours, totaling together just over 60 hours. Seventy-six speakers are represented.
The particle *ne:ne* is relatively frequent in speech, usually appearing at the beginning of a clause. Its occurrence after a noun in what might be interpreted as a relative clause construction is rare, however. To illustrate the functioning of this particle in context in unscripted speech, examples in this section are drawn from a tale told by Sonny Edwards of Ahkwesáhsne about a man who became a serpent. The tale was transcribed, translated, and discussed at length with Mohawk speakers Margaret Edwards of Ahkwesáhsne and Annette Kaia’titâhkhe’ Jacobs of Kahnawââ:ke, who contributed valuable insight into the precise meanings of constructions.

The essence of the legend is as follows. Three friends went out to fish and beached their boat on an island, where they spent the night. The next day they fished without success. One of them, Teharenhsákhhwa’ walked around to the other side of the island, where he found some fish in a log. He brought the fish back to his friends, but the friends were suspicious. He cooked the fish and ate them anyway. He then became very thirsty and began to drink furiously. When his friends woke up the next morning he was missing. They found him on the other side of the island, still drinking. His body was becoming longer. He crawled into the water. When he resurfaced they saw that he was changing into a snake. He advised his friends to go back home and return with seven strong men, which they did. When Teharenhsákhhwa’ again resurfaced, they saw that he had turned into something horrifying, but he promised to watch over the water and help fishermen through eternity. One man was chosen to watch over the winds, and another to watch over the rain. Teharenhsákhhwa’ then explained to the group at length how they could summon him whenever they needed help.

The particle *ne:ne*, seen in the elicited sentence in (11) above, appears in (12), translated with an English relative clause construction.

(12) **Shaiá:ta,**
    s-ha-ia’t-at
    REP-M.SG.AGT-body-be.one
    ‘One’

    ronkwe’tarâkwen,
    r-onkwe-t-a-r-akw-en
    ‘man was chosen’

---

3 There are two variants on the name of this character. This speaker used the form Teharenhsákhhwa’ ‘he picks up the chain’ with the incorporated noun root -rens- ‘chain’, also used for a rosary, resulting in the translation of ‘He Picks Up Beads’. Other speakers know this figure as Teharanhsákhhwa’, a term which evokes high rubber boots instead.
It is not immediately clear what the head of the construction translated ‘one man who would take care of the winds’ might be in the Mohawk. Is it the incorporated noun stem –onkwe’t– ‘person’? Incorporated nouns are not normally referential, though they may evoke a referent. They serve primarily to narrow the semantic scope of the verb. The verb stem –rakw– on its own might be translated ‘pick out, choose’, but with the incorporated –onkwe’t– ‘person’, it might be translated ‘delegate’ or ‘elect’. Perhaps this is an adjoined relative clause with the head shaià:ta, used as a classificatory numeral for persons?

This example and others here are formatted according to their prosody. Each new intonation unit or prosodic phrase, characterized by a pitch reset and a coherent prosodic contour, begins flush left. Commas represent non-final terminal contours, usually a partial fall in pitch or sometimes a rise. Periods represent final terminal contours, usually a full fall. Intonation units are often combined into prosodic sentences. Within a prosodic sentence, each intonation unit shows a pitch reset on the first stressed syllable, but that reset is typically slightly lower on each successive unit. A pitch trace of the sentence in (12) is in Figure 1. The pitch reset can be seen on the first stressed syllable in each intonation unit (shaià:ta, ronkwe’tarákwen, ówera’, kaié:ri). Each began after a pause, a common but not universal feature of intonation units.

The sentence in (12) was followed by that in (13).
The passage in (13) consisted of two prosodic sentences. As can be seen in Figure 2, each sentence began with a full pitch reset and ended in an audible terminal fall (partly obscured by the fact that each ends in a voiceless s). (Stressed syllables marked with a grave accent, like \( \text{ia} \) in shaiå:ta, \( \text{kön} \) in enhate'nikòn: rare’ and \( \text{we} \) in Ratiwè:rahs here, show a distinctive prosodic contour, consisting of a steep rise in pitch followed by an abrupt fall.)

The first sentence, ‘One will guard the rains’, has the same structure as what was interpreted as a relative clause in the preceding example: it begins with the word shaiå:ta ‘one’ and contains the particle ne:ne. But it was translated by speakers as an independent sentence and has the prosodic profile of an independent sentence. The second sentence, ‘These are the ones called the Thunderers’, began with the particle ne:ne, was also translated as an independent sentence, and showed the prosody of an independent sentence, but it contained nothing that could be interpreted as a head noun. This is a common pattern.

A similar pattern can be seen in example (14), the beginning of the tale. The particle ne:ne began a new sentence here as well, picking up a referent mentioned in the preceding sentence.
The old people long ago used to tell a story.

That one was about a man who became a serpent.

That's the one who was called "Teharenhsáhkwa'".

There is no doubt that this last line was a separate sentence. It was translated by speakers as an independent sentence. As can be seen in Figure 3, the preceding sentence ended in a full terminal fall in pitch. This sentence began after a pause with a full pitch reset, then showed a steady declination in pitch until its own final terminal fall. Like all clauses, it is finite and contains full specification of its core arguments.

As can be seen, a basic function of ne:ne is as a discourse anaphor, an indicator that a referent has been mentioned sometime before, not necessarily with precisely the same words, and not necessarily in the same sentence, or even in an immediately preceding sentence.

Like many other languages, Mohawk has no copula. Predicate nominal constructions are formed by simple juxtaposition. The particle ne:ne often appears in such constructions. Speakers had been discussing some old gates in the village, trying to remember what they were for. It was suggested that they may have been used by livestock. The sentence in (15) added further detail.

‘Maybe it was the cows.’

Katsîtsenëntha' Ida Nicholas, speaker

FIGURE 3: Example (14).
The particle ne:ne also appears with nominalized clauses. As noted, verbs and larger clauses can and often do serve as referring expressions with no further marking. The particle ne:ne can make this function overt, with no obvious difference in meaning. The nominalization may refer to a core argument of the clause (participant nominalization) or to the whole assertion (event nominalization). An example of participant nominalization is in (16).

(16) **Ne:ne eniakothón:te’ne’,**
    nene en-iako-at-hont-e’
    that FUT-FL.PAT-MID-listen-ST

‘The one that hears this,’

ne’ë tenieia’tór:reh’
ne’e t-en-ie-ia’t-ore-’n-e-’
‘that one will decide what I’m saying.’

Billy Kaientarónkwen Two Rivers, speaker

An example of event nominalization is in (17), part of a discussion about the forthcoming Mohawk grammar, designed for the community to be user-friendly. The particle ne:ne introduced the idea ‘anybody could pick it up and understand what is written’. This clause served as a complement of the verb ‘it would be possible’, elaborating on what the ‘it’ referred to.

(17) **Aontonhske’**
    aaw-aton-hs-ek-e-’
    ken kik’en ne:ne, OPT-N.AGT-be.possible-HAB-CONT-EP-PFV Q this that

‘Would it be possible’

tsik ónhka’k tá:iehkwe’ tanon’
tsi=k onhka’=k t-aa-ie-hkw-e-’ tanon’
that=just who=just DV-OPT-FLAGT-pick.up-PFV and
‘[for just anybody to pick it up and’

aa-iako’nikonhraienta’ta’ne’
aa-iako’nikonhr-a-ient-a’n-e-’
‘understand what is written?’

Annette Kail’a’táchhe’ Jacobs, speaker

Speakers note that the particle ne:ne can provide time to formulate the next part of the message. The prosodic break between the first and second lines of (17) shows how this might occur. (Certain speakers are known to use such a strategy pervasively.)
The use of the particle ne:ne could lead to some misanalyses. One might be tempted, for example, to interpret the particle in the second line of (18) (still part of the Teharenhsáhkwa’ tale) as a relative pronoun referring to the incorporated noun ‘power’ in the preceding verb.\(^4\)

\[(18)\] Wake’shatstenhserowá:nen,
\hspace{1cm} wake-’shatsten-’hser-owan-en
\hspace{1cm} lSG.PAT-be.strong-NMLZ-be.big-ST
\hspace{1cm} ‘I am powerful / I have great power,’
\hspace{1cm} ne:ne karonhià:ke thèn:teron
\hspace{1cm} nene ka-ronhi-a’ke t-ha-i’ter-on
\hspace{1cm} that N-sky-NS-PLACE CSL-M.SG.AGT-dwell
\hspace{1cm} that in the sky he lives
\hspace{1cm} né thakwá:wi ne ka’shatsténhsera’.
\hspace{1cm} ne t-hakuw-awi ne ka-’shaten-’hser-a’
\hspace{1cm} that CSL-M.SG-give-ST the N-be.strong-NMLZ-NS
\hspace{1cm} that one he gave me the strength

Example (18) consisted of two intonation units, packaged together as a prosodic sentence. The first intonation unit, Wake’shatstenhserowá:nen did not end in a terminal fall, but, rather, showed the continuing rise in pitch to its final syllable which can indicate that more is to come.

In fact the particle ne:ne does not refer to anything in the previous context, such as the incorporated –’shatstenhser- ‘strength’. As confirmed by the speakers, it is part of the participant nominalization of ‘he dwells in the sky’.

Though the particle ne:ne appears in some of the relatively rare constructions in Mohawk speech that might be translated with English relative clauses, it is not a dedicated marker of relativization. If functions primarily as a discourse anaphor, referring to anything in the previous context, or marking the referent of a nominalized clause, one of its core arguments.

\[^4\] The particles ne:ne and né are not the same, though both have histories involving demonstratives.
2.2. Unmarked relativization?

The particle ne:ne is also by no means obligatory in the few examples in the Mohawk corpus that could be translated with English relative clauses. The opening of the tale about Teharenhsáhkwa contained such an example, ‘a man [who became a serpent].’

(19) Né: iá:ken ne’ kí: rotikstenhon’kénha’ ratiká:ratonhskwe’ ne wahón:nise’. ‘They say the old people used to tell a story long ago.’

| ne’e iaken r-onkwe o-hniar-e’-=kowa ro-aton’-on |
| that HRSY MSG-person N-snake-EP-NS=AUG MSG.PAT-Become-INC-SST |
| that they say man serpent he became |

That was about a man [who became a serpent].

Sonny Edwards, speaker

This last line was pronounced as a single prosodic sentence, consisting of just one intonation unit, as can be seen in Figure 5. (The special pitch contour mentioned earlier of syllables marked with a grave accent, consisting of a steep rise then abrupt fall, can be seen here on the penultimate syllable tôn of the word roton’:a, though the fall itself was not picked up in the pitch trace.)

![Figure 5: Example (19)](image)

Speakers note that this sequence of words would be a perfectly acceptable sentence on its own: ‘They say a man turned into a serpent’.

Another example of an unmarked clause which might be translated as a relative clause occurred later in the narrative, that in (20) ‘this man [who was called Teharenhsáhkwa].’

(20) Sok kí: shaià:ta kí: rón:kwe
| sok kiken s-ha-ia’-at kiken r-onkwe |
| so this REP-MSG.AGT-body-be.one this MSG-person |
| so this one this man |

‘So this one man’
Teharenhsáhkwa’
te-ha-renhs-ahkwa’
DV-M.SG.AGT-chain-pick.up-HAB

Teharenhsáhkwa’
[who was called Teharenhsáhkwa’].

né: iá:ken’ wahahénté:ní’
ne’e iaken’ wa-ha-ahtenti-PFV
that.one HRSY FAC-M.SG.AGT-go-PFV
‘that one went’

wahréhson tsi wehnóhkote’.
wa-hr-e-hson-PFV tsi ka-wehn-o-hkw-ot-e-
FAC-M.SG.AGT-go-DISTR-PFV at N.AGT-island-be.in.water-NMLZ-stand-EP-ST
‘and strolled around on the island.’


So this man who was named Teharenhsahkhwa’, he left and walked around the island.

Sonny Edwards, speaker

Here the distinction between an interpretation as a relative clause construction ‘this one man [who was called Teharenhsahkhwa’] and an independent sentence “This man was called Teharenhsáhkwa” is even less obvious. This sequence of words could constitute a fully grammatical sentence on its own. As in the preceding example, there is no relativizer. Like all clauses in the language, it is fully finite. Furthermore, the prosody was similar to that of an independent sentence.

It began with a high pitch reset and ended with a fairly low fall. The following clause began after a pause with a pitch reset of its own. (The initial pitch resets of the two clauses here are more similar than they might first appear: the first appears higher only because that stressed syllable has the special tone contour marked with a grave accent shaià:ta, a tone contour which consists of an initial steep rise then precipitous fall, often not picked up on the pitch trace because of creakiness.) The second clause ended with an audible full terminal fall, slightly lower than the first, but because it was nearly voiceless, it was not picked up in the pitch trace.

This sentence shows the special prosodic pattern of a topic shift construction. Such constructions begin with the shifted topic, here ‘this man named Teharenhsáhkwa’, then are followed, often after a pause, by the nuclear clause, which always begins with another pitch reset. The new topic was picked up with the particle né: ‘that one’, though such is not always the case in topic shift constructions. The referent is always repeated in the pronominal prefix on the verb in any case.
Here perhaps the strongest cue for interpretation as a relative clause is the discourse context. The opening to the tale was seen in (14): ‘They say the old people used to tell a story long ago. That was about a man who became a serpent. That’s the one who was called Teharenhsáhkhwa’. Example (20) occurred later in the story, after the account of the friends setting out, beaching the boat on the island, spending the night, then fishing all day without success. Since Teharenhsáhkhwa had been introduced at the beginning of the story, this clause was not asserting new information.

Evidence for the formal status of (20) as a prototypical relative clause construction is thus less than robust. There is no relativizer. There is no diagnostic gap within the clause comparable to English the man [I met __ ], because all Mohawk clauses contain pronominal reference to their core arguments. There is no special marker of the role of a shared referent in a relative clause, but then all Mohawk verbs contain obligatory pronominal reference to their core arguments. The clause is fully finite: it could stand alone as a perfectly grammatical sentence on its own.

The absence of a prosodic break in (19) ‘the man (who) became a serpent’ and (20) ‘this man (who) was named Teharenhsáhkhwa’ would be in keeping with an interpretation of these constructions as restrictive. Similar constructions, with a prosodic break, might be analyzed as their non-restrictive counterparts: ‘He saw a tree, [which had fallen]’.

(21) Wahatkáhtho’
wa-ha-at-kahtho-ì
FAC=MSG.AGT=MID=see=PFV
‘He saw,’

kérhite’,
ka-erh-it-e-ì
N.AGT=tree=stand=EP=ST
‘it tree stands’ = ‘a tree’,

ioronkienèn:’en,
io=ront=ienèn=’en
N.DAT=log=toppled=INCH=ST
‘it has log toppled’ = ‘a fallen log’.

Sonny Edwards, speaker

But such an analysis would miss patterns of speech that pervade the language as a whole. Speakers often present information in a sequence beginning with one intonation unit, often a verb and perhaps some particles, then augment it in successive intonation units. The verb wahatkáhtho in (21) could be a complete sentence on its own: ‘He saw it’. (Neuters are not represented overtly in the pronominal prefixes on verbs if another participant is present.) But it ended in a non-terminal fall in pitch, marked here with a comma. Both kérhite’ and iorontièn:en are morphological verbs. Both can be used referentially, but the degrees to which they are lexicalized as such differ subtly. The first is the usual term for ‘tree’ in some of the Mohawk communities; it is not normally used predicatively. The second is used both to assert a fact (‘What happened to the tree?’ ‘It fell.’) and to refer (‘fallen log’). One could perhaps force an analysis of this as ‘he saw a tree [which had fallen], but a more likely interpretation, particularly in light of the prosody, is a pattern of statement plus elaboration. Such patterns of information
packaging in discourse are certainly not uncommon across languages. It is of a type of what is sometimes referred to as 'incremental discourse information structure' (ASHER; VIEU 2005; COSME 2008; HASSELGÅRD et al. 2002; MODER; MARTINOVIC-ZIC 2004).

In sum, on the basis of the elicited example in (11) 'The children who are smart will pass', it would seem easy to check off the typological variables pertinent to classifying Mohawk relative clause constructions. But a closer look shows that this construction, consisting of a noun followed by the particle ne:ne and a modifying clause, or even followed by just a modifying clause, is actually infrequent in speech. The particle ne:ne usually functions either as an anaphoric demonstrative or cataphorically to the referent of a following nominalized clause. The interpretation of those constructions translated with relative clauses comes in most cases from prosody and context. And prosody, in this case the prosodic integration of clauses, is not strictly categorical. The factors that typically signal integration, namely pitch contours, potential pauses, and rhythm (initial rush, final lag) are all continua.

2.3. Incipient relativization?

There is a body of literature on the pathways by which relative clauses develop in languages, including that by Lehmann (1984; 1986), Heine and Kuteva (2006, 2007), Givón (2008; 2009), and Hendery (2012). On the basis of a survey of a large number of languages, Heine and Kuteva (2007, p. 224-229) describe one which originates in constructions containing demonstratives.

(22) Demonstrative channel: Heine and Kuteva (2007, p. 226)
1. From [S₁ to S₂] juxtaposition to S₁ [S₂] relativization
   a. There is the car; that (one) I like.
   b. There is the car [that I like].

2. Reinterpretation
   a. The demonstrative pro of S₂ refers anaphorically to a participant of S₁.
   b. The demonstrative is grammaticalized to a relative clause marker.
   c. S₂ is grammaticalized to a relative clause.
   d. The demonstrative pronoun loses spatial deixis and can no longer be used as a demonstrative attribute.
   e. The demonstrative pronoun undergoes erosion (loss of stress)
   f. The two clauses tend to be united under one intonation contour.

Some of the processes they list under Reinterpretation evoke features of the relatively rare Mohawk constructions translatable with English headed relative clauses. a) There may be a demonstrative pronoun ne:ne, which can refer anaphorically to a participant of the preceding clause. But when it is not present, speakers do not feel that anything has been omitted, and that particle may actually be marking the following clause as a nominalization. b) It is not entirely clear that ne:ne has become a full-fledged relative clause marker; it is certainly not a dedicated one. c) It is similarly not clear
that the clause in question is a full-fledged relative clause. d) The demonstrative ne:ne includes no spatial deixis, and there is no evidence within the modern language that it once did, though it may once have; there are other demonstratives in the language with spatial deixis. e) The particle ne:ne is usually, though not always, pronounced with little stress. f) There is, however, always some prosodic integration of two clauses.

Mohawk may, then, show very early stages of development toward a relative clause construction. A consideration of usage patterns, including frequency, context, and variation, might provide a snapshot of a moment in such a development, helping us to refine our ideas about sequencing of the various processes involved.

3. Free relatives

Many languages also have what are termed ‘free relatives’ or ‘headless relatives’, like the English I’ll have [*what she’s having*], or [*whoever wants it*] can have it. Mohawk contains a full set of these, and they occur pervasively in speech.

3.1. Mohawk free relatives

Some examples of free relatives built on ónhka’ ‘who, someone, anyone’ are in (23) - (25). It is often but not necessarily combined with the article ne, yielding nónhka’.

(23) Thó ni’ nón: tewakatkáhthon
thó ni’i nonwe te-wak-at-kaht-on
there 1 where CSL-1PL-PAT-MID-SEE-ST

‘That’s where I saw’

nónhka’ teioratahnó:tes taionráhta’
ne=ónhka’ te-io-rat-a-hnot-es t-aa-ie-ara-hta’
ART=who DV-N.PAT-HEEL-LK-DEPTH-BELONG DV-OPT-TAG-FLG-T-BE.SHOD-INS-HAB

‘*someone wearing high heels.*’

Watshenní:ne Sawyer, speaker
As noted earlier, the pronominal prefixes on verbs are fully referential in their own right. The relation between them and coreferential elements, including indefinite pronouns like \( \text{ónhka} \'), is one of apposition. There are also free relatives built on the indefinite pronoun \( \text{nahò:ten}' \) ‘what, something, anything’, which may or may not be preceded by the particle \( \text{tsi} \), again with no discernible effect on meaning. (The particle \( \text{nahò:ten}' \) originated as a verb \( \text{na- } \text{h-o'ten}' \) PARTITIVE-NEUTER-be.a.kind.of-STATIVE ‘it is such a kind of’. It is now often shortened to \( \text{nahoten}' \).)
tsi naho’ten’ wa:tahkwe’ ne kahón:waikon.
tsii naho’ten’ w-at-ahkw-e’ ne ka-honw-a-ken

‘whatever was on the boat.’

Josephine Kaiériton Horne, speaker

(28) Se’nikon:narak naho’ten’ enhsì:ron’!
se’nikonhr-a-ra-k naho’ten’ en-hs-ihron’-
2SG.AGT.IMPER-mind-LK-be.on-CONT what FUT-2SG.AGT-say-PFV

‘Watch what you say!’

Annette Kaia’titáhkhe’ Jacobs, speaker

There are also free relatives based on the phrase tsi niká:ien’, ‘the ones’.

(29) É:so’ iaken’ tetiattihen ne
eso’ iaken’ te-ki-at-tih-en ne
much HRSY DY-3DU.AGT-MID-be.different-ST ART
‘There was a big difference with’

tsi niká:ien’ ne thó iehonnehthakhwe’ Totáhne.
tsii ni-ka-i-en’ ne tho ie-honn-eht-ahkwe’ tota=hne
that PRT=N.AGT-lie-ST ART there TRL-M.PL.AGT-go-HAB.PAST gram=PLACE
‘the ones that used to go there to Totáhne (the Language Nest).’

Tewateronháhkhwa’ Mina Beauvais, speaker

(30) É:so’ wa’kén:ron’ ne kawirí:io’s
eso’ wa’-ka-ihr-on’ ne ka-wir-iio’s
much FAC~FZ.AGT-say-PFV ART N.AGT-child-be.good-ST.DISTR
She said they were really good kids,’

tsi niká:ien’ ne Totáhne iehonén:on.
tsii ni-ka-i-en’ ne tota=hne ie-hon-e-n-on
that PRT=N.AGT-lie-ST ART gram=PLACE TRL-M.PL.PAT-go-DIR-ST
‘those who had gone to Totáhne (the Language Nest).’

Tewateronháhkhwa’ Mina Beauvais, speaker

(31) Khna’ ne’ tho ni: tsi enháltuweintéhta’ne’
ok=naa ne’e tho ni-io-hıt tsi en-háti-weintéht-ı’a-n-e’
and=guess it.is there PRT=N-be.SO as FUT~ML.PLAT-KNOW.HOW-CAUS-INCH-PFV
‘In that way they’ll learn,’

tsi niká:ien’ ne iethirihonníen:ní.
tsii ni-ka-i-en’ ne iethi-ríhw-ønni-enni
that PRT=N.AGT-lie-ST ART IN.DP-matter-make-BEN
‘those that we teach.’

Annette Kaia’titáhkhe’ Jacobs, speaker

Free relatives referring to place are built on the phrase tsi nón:we ‘where’, often shortened to tsi nón.
Some free relatives are built on particles originally descended from verbs meaning 'be an amount'. The forms are tsi níts(i)on for inclusive first persons (1+2 DP), tsi ní:at(i)n for exclusive first persons (1+3 DP), tsi níts(i)on for second persons (2 DP), tsi ní:kon for neuters (N), níkón:ti for female persons or animals (FZ.DP), and nihá:ti for males or a mixed group.
3.2. Development through time

The development of relative clauses from constructions containing demonstratives was described in Section 3.3. A second common pathway is from constructions containing interrogative pronouns. Based on an examination of the documented development of relative pronouns in European languages, Heine and Kuteva (2006) provide a detailed scenario of the steps involved.


Stage 1 The marker begins in lexical gap questions.
Who came?

Stage 2 The marker is extended to introducing indefinite subordinate clauses.
I don’t know who came.

Stage 3 The marker is extended to definite subordinate clauses.
You also know who came.
These structures may be interpreted as headless relative clauses.

Stage 4 The marker is extended still further to headed relative clauses.
Do you know the woman who came?
Mohawk shows clear evidence of these first three stages. Each of the markers of free relatives described in the previous section appears in Stage 1 of the Heine and Kuteva scenario: simple content questions. The particle ónhka ‘who’ occurs on its own or in a distributive form onhkahrè:shon ‘who all’.

(37)  
Ônhka’ nontâ’re?

‘Who came?’

An interrogative particle oh precedes nahò:ten ‘what’, but it is often dropped.

(38)  
(Oh) nahò:ten’

‘What do you want?’

An interrogative particle ka’ precedes niká:ien’ ‘which’.

(39)  
Ka’ niká:ien’

‘Which one(s) do you want?’

The same interrogative particle ka’ precedes nón:we ‘where’.

(40)  
Ka’ nón:ni

‘Where do you all live?’

A particle tô ‘how much/many?’ appears in questions about quantities. To ní:kon asks about the amount of a mass or the number of inanimate objects, and to nihá:ti and other forms based on the verb -on ‘to number’ ask about the number of people or animals.

(41)  
To ní:kon

tesatonhontsó:ni?

to ni–ka–on

tesatonhontsó:ni?

‘How much do you want?’

(42)  
To nihá:ti

tho wahón:ne’?

to ni–hati

tho wa–honn–e’

‘How many (people) are going?’
All of these forms are used pervasively in Stage 2 constructions of the Heine and Kuteva scenario as well: embedded questions and other indefinite subordinate clauses.

(43) a. láh te[wakaterièn:tare’] [ônha’] tahón:ne’. ‘I don’t know [who’s coming].’
b. Wa’kheri’wanon:tonhse’ [ônha’] tahón:ne’]. ‘I asked her [who’s coming].’
c. láh te[wakaterièn:tare’] [oh] nahò:ten’ tesatonhontsón:ni]. ‘I don’t know [what you want].’
d. láh te[wakaterièn:tare’] [ka’ niá:ien’] tesatonhontsón:ni]. ‘I don’t know [which one(s) you want].’
e. láh te[wakaterièn:tare’] [ka’ nón: nisewènteron’]. ‘I don’t know [where you live].’
f. láh te[wakaterièn:tare’] [to ní:kon tesatonhontsiá:ni]. ‘I don’t know [how much/many you want].’
g. láh te[wakaterièn:tare’] [to niá:titó wahon:ne’]. ‘I don’t know [how many are going].’

The same indefinite pronouns are used in the Stage 3 constructions proposed by Heine and Kuteva, in definite subordinate clauses. The interrogative particles oh, ka’, and to seen in Stage 1 and Stage 2 constructions are often replaced with tsi, however.

(44) a. Wa’kheri’wanon:tonhse’ [ônha’] tahón:ne’]. ‘I told her [who’s coming].’
wà’-khe-rí’wanonton-hs-e-’ onhka’ ta-honn-e-’. FAC-3SG-FI-TELL-PFV who CSL-M.PL.AGT-GO-ST
b. Wakaterièn:tare’ [ônha’] tahón:ne’]. ‘I know [who’s coming].’
wak-ate-rien’tar-e-’ onhka’ ta-honn-e-’. 3SG.PAT-MID-KNOW-EP-ST who CSL-M.PL.AGT-GO-ST
c. Wakaterièn:tare’ [(tsi) nahò:ten’] kenón:we’s]. ‘I know [what I like].’
wak-ate-rien’tar-e-’ tsi naho’ten’ ke-nonhwê’s . 3SG.PAT-MID-KNOW-EP-ST that what 1SG.AGT-LIKE-HAB
d. Wakaterièn:tare’ [tsi niá:ien’] kenón:we’s]. ‘I know [which one(s) I like].’
e. \textit{Wakaterièn:tare' [tsi nón: wahan:ne']}. 'I know [\textit{where} they're going].'

f. \textit{Wakaterièn:tare' [tsi nihá:ti thó wahn:ne']}. 'I know [\textit{how many} are going].'

An interesting fact is that there is current variation between the use of the interrogative particles \textit{ka'}, \textit{oh}, and \textit{to} and the particle \textit{tsi} in constructions at this stage. Speakers feel that both are correct.

Heine and Kuteva note that their Stage 3 constructions, definite subordinate clauses, are sometimes reinterpreted as headless relative clauses, along the lines of You know who came > You know the one who came. These are precisely the structures seen in the preceding section on Mohawk free relatives.

Stage 4 of the Heine and Kuteva scenario, whereby the markers are extended from headless relative clauses to headed relative clauses, has not generally taken hold in Mohawk. A few instances of incipient structures can be found in the corpus, however. The last line of (45) could be interpreted either as a non-restrictive relative clause or simply an added thought.

(45) \textit{Wa'akwatshenón:ni ne wa'akwaie:na'.} ne wa'akwa-i-ne'-
\textit{FAC-IX,PL,AGT-MID-become.glad-BEN ART FAC-IX,PL,AGT-receive-PFV}

'We were glad that we got'

\textit{kahiahtohsera'shôn:'a,}
\textit{ka-hiaton-hser-á'-shon'a}
N=\textit{write-NMLZ=NS=DISTR}

'\textit{the letters,}'

\begin{tabular}{lll}
\textit{tsi} & \textit{naho'ten'} & \textit{kari:hes} \\
\textit{tsi} & \textit{naho'ten'} & \textit{ka-rih-w-es} \\
\textit{that} & \textit{what} & \textit{ionkwa-rhar-e'} \end{tabular}

\textit{ionkwarhá:re'.}

\textit{1PL.PAT-wait-ST}

'\textit{something we had been waiting for for some time.}'

Watshenní:ne' Sawyer, speaker

The sentence in (46) is from an account of the Pear Film\textsuperscript{5}. The speaker had watched the brief film, which contains no language, then recounted what she had seen. The film was designed among other things to investigate strategies in different languages for keeping reference straight in challenging situations.

\textsuperscript{5} The Pear Film was designed by Wallace Chafe in 1975 as a tool for comparing different languages without the intermediary of translation. Slightly less than 8 minutes long, it contains sound but no speech. It was engineered to provide examples of such things as referent tracking, event packaging, and more. Speakers of different languages are shown the film then asked to describe it to another person who has not seen it.
(46)  Kí:ken,  
kiken  
this one,  

raksà:'a  
tsi  
niká:ien',  
ra-ksa'=a  
hsi  
ni-ka-ien'  
MSG-child=DIM  
that  
PRT-N.AGT-lie-ST  

ne,  
ART  

rohianenhskwenhátie',  
ro-ahi-a-nenhskw-en-hatie'  
MSG-PAT-fruit=LK-steal-ST-PROG  
sok  
tontahó:ion'  
ki'  
ne  
raonòn:warore'.  
sok  
t-onta-ho-ion-án  
ki'  
ne  
rao-nonhwar-or-e'  
then  
DV-CISL.FAC-MSG-MSG-give  
in.fact  ART  
MSG.GAL.POSS-brain-cover-ST  

'This guy gave [the boy who was going along with the stolen fruit] his hat back.'  
Annette Kaía'titáhkhe' Jacobs, speaker  

The existence of such constructions, in combination with their rarity in speech, might provide a snapshot of a very early stage of development along the interrogative channel of relative clause constructions, from the Stage 3 to Stage 4 of the Heine and Kuteva scenario.

4. Nuance in the quest for explanation

Work in linguistic typology has been extremely valuable for exploring what all languages have in common, how they can differ, and possible correlations among variables. Recurring correlations can move us toward certain kinds of cognitive explanation, such as deeper generalizations or recurring patterns of development through time, as speakers extend a marker or structure from one domain to another.

Some work of this type can be enriched with a recognition of the fact that the categories and variables which are part of the typological toolkit are not always starkly categorical in individual languages. Examination of unscripted speech can be revealing, providing, among other things, snapshots of moments in the development of grammar, allowing us to refine our ideas about the precise order in which small changes might take place, and the circumstances which might facilitate those changes. These points were illustrated here with an examination of incipient relative clause constructions in Mohawk.

Elicitation of prototypical headed relative clauses in Mohawk via translations of English sentences is a simple matter. These appear to provide all one might need to check off typological boxes: they are head-initial, marked by a relativizer ne:ne, and finite. But such constructions are actually
extremely rare in Mohawk spontaneous speech. The particle *ne:ne* is not a dedicated relativizer. It usually functions as a general discourse anaphor, referring to an entity or idea established at some point in the previous context, or cataphorically to the referent of a following nominalized clause. Furthermore, it is not necessarily present in the few constructions translated as relative clauses, and speakers note that they do not feel that anything is missing from them. Overall, relative clause constructions do not appear to be well installed in the grammar.

Nevertheless, hints of incipient developments can be detected along the two pathways most frequently observed cross-linguistically: via demonstratives and interrogative pronouns. Among the set of processes listed in the demonstrative channel outlined by Heine and Kuteva (2007), the most robust one observable in Mohawk is prosody: the clause interpreted as a relative clause in translations is integrated prosodically with a preceding main clause. Among the four stages of development in the interrogative channel listed by Heine and Kuteva (2006), Mohawk shows the first three robustly, with a few possible faint instances of the fourth.

In sum, as opportunities are increasing for the careful examination of stretches of unscripted speech, it is becoming more possible to take a nuanced view of typological categories and variables, recognizing that they are not always as categorical as they may seem.

REFERENCES


HASSELGÅRD, Hilda; JOHANSSON, Stig; BEHRENS, Bergljot; FABRICIUS-HANSEN, Cathrine (eds.) Information structure in a cross-linguistic perspective. Amsterdam and New York: Rodopi, 2002.


