A temporal semantics for Kanien'kéha: some puzzles

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Tekarihwahsón:tere
1 March 2025

1 Introduction to TA(M)

My goal here is:

① Introduce some linguistics concepts related to tense and aspect that are especially important to Kanien'kéha grammar

② Do a deep dive into three results from my recent work:

    a. how do you know when a verb has a **Habitual Present or Stative Present**?

    b. what do we mean by **Stative Perfect**?

    c. what is **tense**, and how does it work in Kanien'kéha?

First, some technical terms I'll be using:

- Eventuality: a term used to cover both **events** (like cooking, singing, washing; these have 3 aspects in Kanien'kéha) and **states** (like residing, being big; these are Stative-only verbs)

- Temporal reference: the temporal **meaning** of a full sentence, made up of many parts

> **How to make temporal reference**
>
> Temporal reference is made up of the following grammatical parts.
>
> - **Tense:** A grammaticalized way of expressing *when we're talking about*
>
> - **Aspect:** A grammaticalized way of expressing *when the eventuality happens relative to when we're talking about*
>
> - **Modality:** A grammaticalized expression of possibility or necessity (we won't talk about this too much today).
>
> Not all languages use all parts – there are many tenseless languages (like Mandarin, St'át'imcets) and English doesn't use aspect as much as Russian, where it is a central part of its grammar), **i.e., there is variation!**

2 Verb roots – consequentiality and how to find it

This section discusses joint work with Arihwísaks Colin Benedict, Willie Myers, and Katya Morgunova.

- One central idea in temporal grammar is that **the verb you pick affects how you interpret the rest of the TAM system**

- For example, depending on the verb, the Stative and Habitual aspects have different interpretations:

Observation 1: Some verbs use the Habitual to express on-going eventualities

(1) a. tiénthos
      k-ientho-s
      1SGA-plant-HAB
      i. 'I plant.' (habitual)
      ii. **'I am planting.' (on-going episodic)**

  b. watiénthon
      wak-ientho-on
      1SGP-plant-STAT
      'I have planted.' (perfect)

Observation 2: Some verbs use the Stative to express on-going eventualities

(2) a. katshókwas
      k-atshokw-as
      1SGA-smoke-HAB
      'I smoke.' (habitual)

  b. wakatshókwen
      wak-atshokw-en
      1SGP-smoke-STAT
      i. 'I have smoked.' (perfect)
      ii. **'I am smoking.' (on-going episodic)**

- Chafe (1980) described this for Onondaga and Seneca, and claimed that some notion of "consequentiality" is what underlies this contrast

- **Here**, I will follow this, but redefine his notion to a more general one: TELICITY ("towards a goal")

- The main idea: certain events have **results.** When they do, the Stative aspect can mean:

(3) **Interpretations in the Stative aspect**

  a. State roots: on-going

state   *now*   *t*

  b. Atelic event roots: on-going

event   *now*   *t*

  c. Atelic event roots: perfect

event   *now*   *t*

  d. Telic event roots: perfect

event   *result*   *now*   *t*

First: How do we know whether an event has a result (=is telic) or not (=is atelic)

· We want to find other ways to *diagnose* a result, preferably in a way that is semantically transparent, meaning it'll be easy to teach.

· So far, in joint work with Arihwísaks Benedict and Willie Myers, we've come up with two: the meaning of the **Reversive suffix** and a particular meaning of the **Repetitive prefix**

① **The Reversive suffix** has two interpretations: (i) *finish doing V* and (ii) *undo the result of V*.

(4) a. ke-kh-onni-s
         1SGA-food-make-HAB
         'I cook (habitually).'

     b. ke-kh-onni-a-**hsion**-s
         1SGA-food-make-JR-REV-HAB
         'I **finish** cooking.'
         not 'I un-cook.'

(5) a. k-ont-ha
         1SGA-attach-HAB
         'I attach something to something.'

     b. k-ont-a-**kwa**-s
         1SGA-attach-JR-REV-HAB
         'I **detach** it.'
         not 'I finish attaching it.'

Notice that *-khonni* 'cook' is a Stative Present (*wakekhón:ni* 'I am cooking') and *ont* 'attach' is Habitual Present (*kóntha'* 'I am attaching')

· **Generalization:** when the meaning of the Reversive is (ii) undo , this verb is a Habitual Present verb (telic)

· We can think of it in this way:

   1. the Reversive suffix actually means something like "stop" in both interpretations

   2. When the verb does not describe a result (i.e., is atelic), the thing that stops is **the process.**

   3. When the verb *does* describe a result (i.e., is telic), the thing that stops is **the result.**
      By stopping the result state, we get the translation into English of "un-doing" – stopping something from *being attached* is essentially *detaching*

② **The Repetitive prefix** has one particular interpretation often translated as "back" (it's usual translation is *re-* or *again*). We'll call this interpretation the "restitutive" reading. This relies heavily on context:

(6) a. **Context:** *John cooked food yesterday. I cooked the same food again.*
         #**se**-ke-kh-onni-s
         REP-1SGA-food-make-HAB
         'I cook **again**.' (✓ repetitive; ✗ restitutive)

     b. **Context:** *You write words on the board for me to learn. Someone always erases it. I write it back up on the board.*
         se-k-hiaton-s
         REP-1SGA-write-HAB
         'I write it **back**.' (✓ repetitive; ✓ restitutive)

- **Generalization**: when the Repetitive can have a restitutive reading, this verb is a Habitual Present verb (telic).

- We can think of it in this way:

  1. The Repetitive expresses that some *part* of the event described by the verb happens again.

  2. When the verb only describes the process, the process is the only part that can repeat. When the verb describes both the process and result, either the process can repeat (repetitive) or the result alone can repeat (restitutive).

The result so far

This is still work in progress!

① The Habitual Present/Stative Present contrast can be understood as relying on whether the verb has a **result state**

② This is a *lexical property*: part of the verb's meaning is that it either encodes this result state or not.

③ The choice between Habitual and Stative for the on-going interpretation can feel arbitrary: the two tests above are a little more transparent, and can help learners get a feel for what "consequentiality" means.

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3   The perfect

When we say that the Stative aspect has a "perfect" meaning, what do we actually mean? Perfects are usually associated with up to four readings, which differ quite a bit from each other.[1]

(7)   **English Present Perfect construals**

    a.   I have been reading this book since I woke up.   (CONTINUATIVE)

    b.   Have you ever been to New York?   (EXPERIENTIAL)

    c.   The Canadiens have (just) won!   (RECENT PAST)

    d.   Mary has lost her keys.   (RESULTATIVE)

Kanien'kéha's Stative aspect has the same range of meanings as the English Present Perfect.

(8)   **Kanien'kéha Stative aspect (perfect) construals**

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[1]The linguistic literature on perfects is quite divided on whether these correspond to different meanings, whether we can group these together, and even whether perfects across languages are actually doing the same thing.

a.   Kó:r   shiiohrhòn:ke   **shatehononniáhkwen**
      Kor   shi-io-hrhon'ke   sh-ate-ho-nonniahkw-en
      Kor   COIN-NP-be.morning.STAT   COIN-DUPL-MSGP-dance-STAT

      (tá:non'   shé:kon   tehononniáhkwen).
      (tanon'   shekon   te-ho-nonniáhkw-en).
      and   still   DUPL-MSGP-dance-STAT
      'Kor has been dancing since this morning (and he is still dancing).'   (CONTINUATIVE)

b.   Nonwén:ton   ken   **satá:wen**   ne   kentho   kaniataratákie?
      nonwenton   ken   s-atawen   ne   kentho   kaniataratakie?
      ever   Q   2SG.A-swim.STAT   NE   this   river
      'Have you ever swam in this river?'   (EXPERIENTIAL)

c.   Iotahkwáhswa'   tsi   iáh   **teietshiwennará:'on**
      io-tahkwahsw-a'   tsi   iah   te-ietshi-wenn-a-r-a'-on
      NP-dislike-PUNC   that   NEG   NEG-2PL>FI-word-JR-be.in-INCH-STAT
      'It's too bad that you didn't speak to her.' (Rawe:ras Ro:ne', DAT ID 62)   (RECENT PAST)

d.   **Wakátion**   ne   akehnhotónkwa
      wak-ati-on   ne   ake-hnhotonkwa
      1SGP-lose-STAT   NE   1SGP-keys
      'I have lost my keys.'   (RESULTATIVE)

However, note that not all verbs (or forms in English) have all the readings.

(9)   a.   I have been reading this book since I woke up this morning.   (I am still reading it)

      b. #I have read this book since I woke up this morning.   (makes no sense)

      c.   I have read this book.   (I *can't* still be reading it)

The Stative aspect, then seems to be able to make two contributions to the temporal reference.

1. ANTERIORITY CLAIM: the eventuality happened sometime in the past

2. CONTINUOUSNESS CLAIM: the eventuality is still going on right now.

The second meaning is restricted to only some verbs in Kanien'kéha (and some verb forms in English)

(10)   **Continuative readings of atlic verbs use the Stative aspect**

a.   Tsi náhe   2021   shiiohserò:ten   Tiohtià:ke   **shikenákere'**
      tsi nahe   2021   shi-io-hser-o'ten   tiohtia'ke   shi-ke-naker-e'
      since   2021   COIN-NP-year-be.kind.STAT   Montreal   COIN-1SGA-reside-STAT
      'I have lived in Montreal since 2021.'   (State root)

b.   Kó:r   shiiohrhòn:ke   **shihowenná:note'**   kí:ken   iewennahnotáhkhwa'.
      Kor   shi-io-hrhon'k-e   shi-ho-wennanot-e'   kiken   iewennahnotahkhwa'
      Kor   COIN-NP-morning-STAT   COIN-MSGP-read-STAT   this   book
      'Kor has been reading this book all morning/since the morning.'   (STAT Present)

(11) **Continuative readings of telic verbs use the Habitual aspect**

    a.   Kó:r   shiiohrhòn:ke'   **shatehahtotáhrhos.**
        Kor   shi-io-hrhon'k-e   sh-a'te-ha-tohtahrhο-s
        Kor   COIN-NP-morning-STAT   COIN-DUPL-MsGA-clean-HAB
        'Kor has been cleaning all morning.'   (HAB Present)

    b. #Kó:r   shiiohrhòn:ke   **sha'tehotohtáhrhon.**
        Kor   shi-io-hrhon'k-e   sh-a'te-ho-tohtahrh-on
        Kor   COIN-NP-morning-STAT   COIN-DUPL-MsGP-clean-STAT
        Intended: 'Kor has been cleaning all morning/since the morning.'   (HAB Present)

· In Kanien'kéha, the continuative reading of the "perfect" is essentially the same as the on-going reading we talked about above.

· The other readings (experiential/result) require adverbials to make the meaning salient.

(12) **Context:** *We're at a karaoke bar. Someone asks: Ónkha nòn:wa entsiontennó:ten? 'Who's going to sing now?'*

    a.   Ó:nen   wakaterén:note'
        onen   wak-aterennot-e'
        already 1SGP-sing-STAT
        'I've already sung.'

    b. #Wakaterén:note'
        Wak-aterennot-e'
        1SGP-sing-STAT
        Intended: 'I've (already) sung.'

    c. #Wa'katerén:noten'
        Wa'-k-aterennot-en'
        FACT-1SGP-sing-PUNC
        Intended: 'I've (already) sung.'

(13) **Context:** *'Have you ever written a story book?'* (*Nonwén:ton ken sahiá:ton ne iawennahnotáhkhwa' kahiatónhsera'?*)

    a.   Iáh   nonwén:ton   **tewakhiá:ton.**
        iah   nonwenton   te-wak-hiaton
        NEG   ever   NEG-1SGP-write-STAT
        'I have never written a book.'

    b. #Iáh   tewakhiá:ton.
        iah   nonwenton
        NEG   NEG-1SGP-write-STAT
        Intended: 'I have never written a book.'
        Actual: 'I didn't write a book.'

Finally, state verbs *have* to be continuative. For a strictly anterior meaning, you need to mark it with the past suffix (more on these in the next section).

(14)   Context: *'Does Kó:r live in Montréal?'* (*Tiohtià:ke ken ranákere ne Kó:r?*)

a.   (Énska   ia'ká:ienhte)   Tiohtià:ke   **thanákerehkwe'**   ne   Kó:r
      enska   ia'kaienhte   Tiohtia'ke   t-ha-naker-e-hkwe'   ne   Kor
      one   be.times   Montreal   CIS-MSGA-reside-STAT-FOR.PST   NE   Kor

      nek tsi   nòn:wa   iah   tho   tha'tethanákere.
      nek tsi   nonwa   iah   tho   tha'-te-t-ha-naker-e
      but   now   NEG   there   CONTR-?-?MSGA-reside-STAT
      'Kó:r lived here in Montreal once, but he doesn't live here now.'

b.   #(Énska   ia'ká:ienhte)   Tiohtià:ke   **thanákere**   ne   Kó:r
      enska   ia'kaienhte   Tiohtia'ke   t-ha-naker-e   ne   Kor
      one   be.times   Montreal   CIS-MSGA-reside-STAT   NE   Kor

      nek tsi   nòn:wa   iah   tho   tha'tethanákere.
      nek tsi   nonwa   iah   tho   tha'-te-t-ha-naker-e
      but   now   NEG   there   CONTR-?-?MSGA-reside-STAT
      Intended: 'Kó:r lived here in Montreal once, but he doesn't live here now.'   (State verb)

Table 1: Readings of the Stative aspect

Root property	CONTINUATIVE	EXPERIENTIAL	RESULTATIVE	RECENT PAST
state	✓	✗	✗	✗
atelic event	✓	✓	✗	✓
telic event	✗	✓	✓	✓

Results so far

① The Stative aspect has a range of meanings

② The continuousness claim requires atelic verbs: it is basically an on-going reading.

③ The anteriority claim is always available for event verbs; for state verbs, you need to use the past tense.

4   Past tenses

Kanien'kéha (and other Northern Iroquoian languages) are optionally tensed, meaning the following things:

① Verbs do *not* have to be marked with tense (overtly; see Appendix A)

② The Former Past and Remote Past are tenses: they require the eventuality to have happened in the past

③ The two differ in whether they require the eventuality to have happened *strictly* in the past

Firstly, note that you don't always have to mark the verb with the past suffixes, even if the event did happen in the past. This differs from English (which is obligatorily tensed). **Note:** In the contexts below, the past form is sometimes preferred – what is important here is that it is not *ungrammatical* to use the bare form.

(15) **Morphologically Tenseless Clause with Stative Aspect**

    a.   Shawátis **rotshókwen.**
            Shawatis ro-atshokw-en
            John   MsGP-smoke-STAT
            'John is smoking.'   (Present on-going)

    b.   Shawátis shahí:ken'   **rotshókwen.**
            Shawatis sh-a'-hi-ken-'   ro-atshokw-en
            John   COIN-FACT-1SG>MsG-see-PUNC MsGP-smoke-STAT
            'John was smoking when I saw him.'   (Past on-going)

(16) **Morphologically Tenseless Clause with Habitual Aspect**

    a.   Rató:rats.
            r-atorat-s
            MsGA-hunt-HAB
            'He is hunting.'   (Present on-going)

    b.   Oh na'kénhaton shahí:ken'   **rató:rats.**
            Oh na'kenhaton sh-a'-hi-ken-'   ra-atorat-s
            last.time   COIN-FACT-1SG>MsG-see-PUNC MsGA-hunt-HAB
            'When I saw him last, he was hunting.'   (Past on-going)

(17) **Optionality of Past with Decessive suffix**

    a.   Ake'nisten'kénha   iehnén:ies(kwe').
            ake-'nistenha-kenha   ie-hneni-es-kwe'
            FZsG>1SG-mother-DECESS FIsGA-be.tall-HAB-FOR.PST
            'My late mother was tall.'

    b.   Ake'nisten'kénha   athéhsa' niakononhkiwsero'tén(hne').
            ake-'nistenha-kenha   athehsa' ni-a-kon-onhkwi-ser-ot-en-hne'
            FZsG>1SG-mother-DECESS brown   PRT-FZsGA-hair-NMLZ-have.colour-STAT-REM.PST
            'My late mother had brown hair.'

Second, note that the use of the past tense (in both English and Kanien'kéha) gives rise to a special inference: that the eventuality is over (a *cessation* inference)

(18) a. How is Scotty doing?

   b. He was anxious.
      ⤳ He is not currently anxious.   (Altshuler and Schwarzchild 2013)

(19) a. Ohna'kénhaton shahí:ken'   ható:rats**kwe'**
         Ohna'kenhaton sh-a'-hi-ken-'   ra-atorat-s-kwe'
         last.time   COIN-FACT-1SG>MSG-see-PUNC   MSGA-hunt-HAB-FOR.PST
         'When I saw him last, he was hunting.'
         ⤳ She is not currently hunting.

   b. Shawátis shahí:ken'   **rotshokwèn:ne**.
      Shawatis sh-a'-hi-ken-'   ro-atshokw-en-hne
      John   COIN-FACT-1SG>MSG-see-PUNC   MSGP-smoke-STAT-REM.PST
      'John was smoking when I saw him.'
      ⤳ He is not currently smoking.

One important property is that the *strength* of the meanings differ.

① With the Former Past, the *cessation* meaning can be contradicted – you don't necessary have to mean that the event is over.

(20) **Cancellation of inference via explicit denial of cessation and ignorance statement**

   a. Shikekhsà:'a   **katá:wenskwe'**   tánon' shé:kon katá:wens.
      Shi-k-ekhsá'a ka-atawen-s-kwe'   tánon' shé:kon k-atawen-s
      COIN-1SGA-child 1SGA-swim-HAB-PAST and   still   1SGA-swim-HAB
      'When I was a child, I used to swim and I still do.'

   b. Ohna'kénhaton shahí:ken'   **rató:ratskwe'**   nek tsi iah
      Ohna'kénhaton sha'-hi-ken-'   r-atorat-s-kwe'   nek tsi iah
      last.time   COIN-1SG>MSG-see-PUNC   MSGA-hunt-HAB-FOR.PST   but   NEG
         tewakaterièn:tare'   tóka' shé:kon rató:rats.
         te-wak-aterientar-e'   toka' shekon   r-atorat-s
         NEG-1SGP-know-PUNC   if   still   MSGA-hunt-HAB
      'When I saw him last, he was hunting but I don't know if he's still hunting'

(21) **Cancellation of inference via explicit denial of cessation and ignorance statement**

   a. Shontakatáweia'te   rowennahnó:ta**hkwe'**
      Shon-ta-k-ataweia't-e   ro-wennahnot-a-hkwe'
      COIN-CIS.FACT-1SGA-enter-PUNC   MSGP-read-STAT-FOR.PST
         tánon shé:kon rowennà:note'   ó:nen'k
         tanon' shekon   ro-wennahnot-e'   onen'k
         and   still   MSGP-read-STAT   right.now
      'He was reading when I entered, and he is still reading right now.'

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b. ... nek tsi iah tewakateriéntare'   tóka shé:kon rowennà:note'
    ... nek tsi iah te-wak-aterientar-e'   toka shekon   ro-wennahnot-e'
    ... but   NEG NEG-1SGP-know-STAT if   still   MsGP-read-STAT
    'He was reading when I entered, but I don't know if he's still reading.'

② With the Remote Past, the *cessation* meaning cannot be contradicted – you definitely mean that the event is over.

(22) **Remote Past cessation inference cannot be cancelled**

a. #Shawátis **rotshokwèn:ne**   {tánon'/nek tsi} shé:kon rotshókwen.
    Shawatis ro-atshokw-en-hne   tanon'/nek tsi   shekon   ro-atshokw-en
    John   MsGP-smoke-STAT-REM.PAST and/but   still   MsGP-smoke-STAT
    Intended: 'John was smoking and/but he is still smoking .'

b. #Sue rotiniakòn:ne'   nek tsi iah tesewaterièn:tare'   tóka' shé:kon
    Sue   roti-niak-on-hne   nek tsi iah te-se-wak-aterien:tar-e' toka' shekon
    Sue   MDUP-marry-STAT-REM.PAST but   NEG NEG-REP-1SGP-know-PUNC if   still
       rotiniá:ken
       roti-niak-en
       MDUP-marry-STAT
    Intended: 'He was married to Sue, but I don't know if they're still married.'

A   Tenseless?

A more theoretical claim: Kanien'kéha is tensed, but the tenses are *covert*. There are two arguments.

① Some languages allow tenseless forms to refer to a large non-future interval. Tlingit and St'át'imcets are examples. Kanien'kéha, on the other hand, do not allow this.

(23) **Reference to non-future interval in Tlingit**
      CONTEXT: *You are watching two kids, Tom and Anne. Your friend Linda is downstairs reading. First, Tom starts jumping around the room. You tell him to stop, and he does. Soon, though, Anne starts jumping around the room. At this point, Linda opens the door and asks "What is all the noise up here?"*
      Táam ḵa   Anne át has wujik'éin.
      Tom and Anne PFV.3PLS.jump.around
      'Tom and Anne jumped around/are jumping around.'   ([Cable 2017](): p. 657)

(24) CONTEXT: *Kó:r was reading a book up until a few minutes ago. Sá:k then started to read and is currently reading.*

a. Kó:r wahawennahnó:ton'   tánon' Sá:k (ó:nen) rowennà:note'
    Kó:r wa'-ra-wennahot-on'   tanon' Sá:k onen   ro-wennahnot-e'
    Kor FACT-MSGA-read-PUNC and   Sak   now   MSGP-read-STAT
    'Kó:r read a book and Sá:k is reading a book (now).'

b. #Kó:r tánon' Sá:k rotiwennà:note'
    Kó:r tánon' Sá:k roti-wennahnot-e'
    Kor and   Sak MDUP-read-STAT
    Intended: 'Kó:r and Sá:k were and are reading.'
    'Kó:r and Sá:k are reading (right now).'

c. #Kó:r tánon' Sá:k wahniwennahnó:ton'
    Kó:r tánon' Sá:k wa'-hni-wennahnot-on'
    Kor and   Sak FACT-MDUA-read-PUNC
    Intended: 'Kó:r and Sá:k did and are reading.'
    'Kó:r and Sá:k did read (they're both done).'

② Ellipsis tests show that tenseless verbs in Kanien'kéha are not vague (like St'át'imcets) but rather *ambiguous* – they can mean either one of two things, but never both.

(25)   **Strict temporal co-reference under ellipsis.**
       CONTEXT: *Everyone has been swimming recently to make the most of the final days of summer weather.*
       Tiahià:khsera tsi náhe', Kó:r ratáwens...
       Tiahià:khsera tsi náhe', Kó:r ra-atawen-s
       last.week   Kor MSGA-swim-HAB
       'Last week, Kor was swimming...'

   a.   ... tánon' (thetén:re) Sák ò:ni'
             tanon' thetenre   Sak o'ni'
             and   yesterday   Sak also
         '...and (yesterday) Sak was <swimming> too.'

   b. #... tánon' òn:wa Sák ò:ni'
             tanon' onwa Sak o'ni'
             and   now   Sak also
         '...and Sak is <swimming> now too.'

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