Two Optional Past suffixes and their cessation inferences in Kanien'kéha*

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Abstract: Kanien'kéha has two Past suffixes, the Former Past and the Remote Past, which are described as each requiring the eventuality described by the verb to be strictly prior to the Utterance Time. Previous descriptions of the Northern Iroquoian family typically treat these suffixes as allomorphs. In this paper, I investigate these suffixes further revealing that they convey a cessation component, which claims that the eventuality has ceased by Utterance Time. I show that the inferences differ with respect to the strength of their cessation inference. I also show that the distribution of the Remote Past is more complex than previously described, further motivating distinct formal treatments of the two.

Keywords: Kanien'kéha, Iroquoian, tense, optional tense, cessation implicature

1 Introduction

This paper investigates the syntax and semantics of the two optional past suffixes in Kanien'kéha (Northern Iroquoian), referred to in the Iroquoianist literature as the Former Past *-(h)kwe'* and the Remote Past *-hne'*. These are illustrated in (1). Both suffixes are optional for past-referring sentences. When present, the truth-conditional contribution of either suffix requires that the event described by the predicate occurs strictly prior to the Utterance Time. Furthermore, the literature on Kanien'kéha and related languages notes that the use of these suffixes requires the event to have ceased by Utterance Time. That is, they trigger a CESSATION INFERENCE; these inferences will be noted in examples below the free translation following the ⇝ symbol throughout.[1]

(1) a. Ohna'kénhaton shahí:ken' rató: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.

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[1] Glossing abbreviations follow Leipzig conventions with the following additions: A, agent prefix; CIS, Cislocative; COIN, Coincidental; DU, dual; FACT, Factual mood; FI, feminine-indefinite; FZ, feminine-zoic; FOR.PST, Former Past; HAB, Habitual aspect; M, masculine; NMLZ, nominalizer; P, patient prefix; PRT, Partitive; PUNC, Punctual aspect; REM.PST, Remote Past; STAT, Stative aspect.

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.'
⇝ He is not currently smoking.

In this paper, I propose that, while the Former Past *-(h)kwe'* is best understood as a morphological exponent of a plain PAST tense, the Remote Past *-hne'* is rather more specialized in its function. The Remote Past will be analyzed here as a tense which lexically entails the endpoint of the eventuality described by its verbal complement, or a DISCONTINUOUS PAST tense following work by Plungian and van der Auwera (2006).

This analysis will be motivated on the basis of two novel empirical observations regarding the interpretation and distribution of these suffixes. Firstly, while both suffixes trigger a cessation inference, the inferences differ in their strength. The Former Past comes with a defeasible cessation inference similar to those arising in, for instance, English and Tlingit. The Remote Past, however, gives rise to a non-defeasible cessation inference. I take the former to be an implicature and the latter to be an entailment. This data is given in §3. Secondly, I will propose a clearer description of the distribution of the Remote Past. While there is some overlapping distribution between the two suffixes, there are a set of verb roots which do not seem to permit the use of the Remote Past. I discuss this observation in §4. Together, I argue that these two empirical facts taken together point to the distinct functions of the two Past suffixes. I sketch one implementation in §5, and end in §6 by noting the remaining desiderata in establishing a formal account of the Kanien'kéha past suffixes.

The examples in this paper, unless otherwise cited, come from my own elicitation with four speakers of Akwesáhsne and Kahnawà:ke Kanien'kéha. All crucial judgements have been checked with L1 speakers.

2 Optional pasts in Kanien'kéha

In this section, I describe the basic syntactic and semantic properties of the optional past suffixes in Kanien'kéha. I begin with an overview of the aspectual system in §2.1, and then turn to the past suffixes of interest. I establish firstly that bare non-perfective verbs are compatible with past or present temporal reference, and secondly that the two Past suffixes restrict the temporal reference to be past referring. I will establish this latter claim for both matrix clauses in §2.2 and embedded clauses in §2.3.

Previous work on the two Past suffixes in Kanien'kéha is divided on whether these suffixes show differing syntactic or semantic properties. Whereas some work explicitly analyses the two suffixes as allomorphs of a single Past suffix (Bonvillain 1973:213–214, Ormston 1993:108), the non-complementary distribution of these suffixes has been noted by work as early as Hopkins (1988). In this section, we will see that the examples from embedded clauses provide initial motivation for the view that the Former Past and Remote Past are distinct suffixes.

2.1 Kanien'kéha Aspect and morphological tenselessness

Kanien'kéha is an optionally tensed language, in the sense of Bochnak (2016). That is, while many matrix clauses do not have an overt exponent for tense, the language does have tense morphemes

which may be used to restrict the reference time of the clause. Morphologically tenseless clauses obligatorily inflect for aspect and the aspectual suffix interacts with tense. We will begin, therefore, with a brief discussion of the aspectual system in Kanien'kéha.

Kanien'kéha event verbs inflect for one of three aspects. Verbs inflected in one of the two non-perfective aspects, labelled the Habitual and the Stative aspect in the Iroquoian literature (see Foster 1985, 1986), can be interpreted as a single event that is on-going at utterance time (hereafter PRESENT ON-GOING) or on-going at a past time relative to the utterance time (hereafter PAST ON-GOING). The choice of which aspect is determined by properties of the root (Chafe 1980; Cross, Gatchalian, Morgunova, Myers, and Norton 2023). In effect, this divides the class of eventive verb roots into complementary subclasses, depending on the aspect in which the on-going episodic reading is found. For example, the on-going interpretation of the verb *-atorat* 'hunt-HAB' in (2) is only found with the Habitual aspect; use of the Stative aspect results solely in a perfect interpretation. The two non-perfective forms are illustrated in (2) for the Habitual aspect and (3) for the Stative Aspect.

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

a. Ratóːrats.
r-atorat-s
MSGA-hunt-HAB
'He is hunting.' (Present on-going)

b. Oh na'kénhaton shahíːken' **ratóːrats**.
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)

(3) **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 shahíːken' **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)

The third aspectual form, the Punctual, is interpreted as a perfective (with an obligatory modal prefix).[2] As the Punctual is incompatible with the Past suffixes under discussion, I will set these aside here. I will refer to forms which include only the aspect suffix, e.g., (2a, 3a), as bare aspectual forms.

The on-going episodic readings illustrated above, however, are only a subset of the interpretations available in the Habitual and Stative aspect. In addition, the Habitual and Stative aspects each

[2] A further fourth aspectual form, the Intentive, is available for a small number of motion roots (Michelson, Michelson, and Deer 2024). Like the perfective, this is not compatible with the past suffixes but unlike the Punctual, it is interpreted as an on-going or expressing an intent to carry out the verb's event. As such, Martin (2023) and DeCaire (2023) call this the "present" or "intentional", and Baker (1996) labels it the "imperfective".

have an additional interpretations: the Habitual can also be interpreted habitually (4a); the Stative can be interpreted as a perfect (4b).

(4) a. Kén tho' **tehonttsihkwá'eks.**
ken tho te-hon-at-tshihkwa'-ek-s
this there DUPL-MPLP-SR-ball-strike-HAB
'They play lacrosse here (habitually)' (Present habit)

b. Ó:nen **wakakia'tawi'tshera'níkhon**.
onen wak-akia'tawi-'tsera-nikhon
already 1SGP-shirt-NMLZ-SEW.STAT
'I have already sewn a shirt' (Present perfect)

Having seen the interpretations of bare aspectual forms, we turn now to forms which are overtly marked with the Past tense suffix.

2.2 Two past suffixes in Kanien'kéha

While bare aspectual forms of the non-perfective aspects can have either past or present temporal reference, forms marked with one of the two past suffixes are obligatorily past referring. This is illustrated for the Former Past *-(h)kwe'* in (5a) and for the Remote Past *-hne'* in (5b).

(5) **Past suffixes**

a. ratό:rats**kwe'**
r-atorat-s-kwe'
MSGA-hunt-HAB-FOR.PST
'He *is/was hunting.' (Former Past *-(h)kwe'*)

b. Shawátis rotshokwèn**:ne'**.
Shawatis ro-atshokw-en-hne'
John MSGP-smoke-STAT-REM.PST
'John *is/was smoking.' (Remote Past *-hne'*)

The optionality of these suffixes can be seen clearly when the subject is marked with the decessive suffix, which express that the subject is deceased. In this case, both the Former Past and the Remote Past are preferred but not obligatory, as illustrated in (6).

(6) 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.'

As noted above, the past suffixes are also used when the aspect has a non-episodic interpretation. This is shown in (7a), where the Former Past marked Habitual aspect verb is interpreted as a past habitual, as indicated by the co-text *shikekhsá'a* 'when I was a child'. In (7b), the Stative aspect predicate is obligatorily interpreted as a past result perfect, with the interpretation that the result state no longer holds.

(7) a. Shikekhsá'a katá:wens**kwe'**.
Shi-k-ekhsá'a ka-atawen-s-kwe'.
COIN-1SGA-child 1SGA-swim-HAB-FOR.PST
'When I was a child, I used to swim' (Past habitual)

b. Sue rotiniakòn**:ne'**.
Sue roti-niak-on-hne'
Sue MDUP-marry-STAT-REM.PAST
'He had been married to Sue.' (Past perfect)

Finally, the use of either Past suffix requires absolute past reference. Anteriority relative to a future reference time is insufficient to license the use of either Past suffix, as can be seen in (8) for the Former Past and in (9) for the Remote Past.

(8) **No future perfects (*past-in-the-future*) with Former Past *-(h)kwe'***

a. * Nó:nen ó:ia' ientsóserate' tewáhsen nikahiatonhserá:ke
nonen oia ientsoserate' te-wahsen nikahiatonhsera-ke
now next it.will.be.new.year DUPL-ten PRT-book-COUNT
(en)wakewennahnó:tahkwe'.
en-wake-wennahnot-a-hkwe'
FUT-1SGP-read-STAT-FOR.PST
Intended: 'By this time next year, I will have read 20 books.'

b. Nó:nen ó:ia' ientsóserate' tewáhsen nikahiatonhserá:ke
nonen oia ientsoserate' te-wahsen nikahiatonhsera-ke
now next it.will.be.new.year DUPL-ten PRT-book-COUNT
enwakewennahnó:take'.
en-wake-wennahnot-a-k-e'
FUT-1SGP-read-STAT-CONT-PUNC
'By this time next year, I will have read 20 books.'

(9) **No future perfects (*past-in-the-future*) with Remote Past *-hne'***

a. * wísk mínit **enhotsokwèn:ne'**
wísk mínit en-ro-atsokwen-hne'
five minute FUT-MSGP-smoke-STAT-REM.PST
Intended: 'In five minutes, he will finish smoking/have smoked.'

b. Wísk mínit enhahsa' tsi rotshókwen
wisk minit en-ra-hs-a' tsi ro-atshokw-en
five minute FUT-MSGA-finish-PUNC that MSGP-smoke-STAT
'In five minutes, he will finish smoking.'

The observations in this section lead to the generalization in (10).

(10) **Generalization I:** Use of the Former Past or the Remote Past requires absolute past reference.

This generalization suggests a temporal character similar to tense in overtly and obligatorily tensed languages, modulo their optionality. So far, the two suffixes behave similarly, fitting claims that these suffixes make the same semantic contribution (Ormston 1993). The remainder of this paper will demonstrate contexts where the contribution of the two suffixes can be differentiated, turning first to their interpretations in embedded clauses.

2.3 Embedded Tenses

When the Past suffixes occur in the complement of a Factual-Punctual (past perfective) verb, the embedded Past-marked verb can in principle be temporally located as relative to the time of the matrix event or the time of the utterance. In fact, we see that the suffixes differ in whether the interpretation relative to the matrix event is obligatory.

The example in (11a) show that the Former Past cannot be understood as expressing an eventuality that is simultaneous with the speech event expressed by the matrix verb. On the other hand, the example in (11b) shows that the use of the Former Past is optional to attain this back-shifted interpretation.

(11) a. **Context (simultaneous interpretation):** *I went out with with Willie, and Katya couldn't make it. Katya said she had other plans at the time. Willie told me what Katya was doing.*

Willie wahèn:ron' Katya Aquatic Centre kiontá:wens#(**kwe'**).
Willie wa-ha-ihron-' Katya Aquatic Centre k-ie-atawen-s-kwe'.
Wilie FACT-MSGA-say-PUNC Katya CIS-FI.A-swim-HAB-PAST
'Willie said Katya was swimming at the Aquatic Centre.'

b. **Context (backshifted interpretation):** *Katya didn't show up for a get-together last week. Willie told me yesterday why.*

Willie wahèn:ron' tiahia'khera tsi náhe Katya Aquatic Centre
Willie wa-ha-ihron-' tiahia'khera tsi náhe Katya Aquatic Centre
Willie FACT-MSGA-say-PUNC last.week Katya
kiontá:wens(**kwe'**)
t-ie-atawen-s-kwe'
CIS-FI.A-swim-HAB-PAST
'Willie said yesterday that Katya had been swimming at the Aquatic Centre last week.'

There are two relevant observations with embedded Remote Past-marked verbs which contrast with those made for the Former Past above. Firstly, the simultaneous interpretation is ruled out when the embedded verb is marked with the Remote Past, as seen in (12a). Secondly, in contrast to the Former Past, the use of the Remote Past is highly preferred to attain the back-shifted interpretation in (12b). This preference may be related to the predicate, as *atshokw* 'smoke' permits an on-going episodic interpretation in the Stative.

(12) a. **Context (simultaneous interpretation):** *Paul went out for a smoke break and is still out there. John tells me where Paul is and I report back.*
Shawátis wahèn:ron' Kó:r thotshokwèn#(**:ne**).
Shawatis wa-ha-ihron-' Kor t-ho-atshokw-en-hne
John FACT-MSGA-say-PUNC Paul CIS-MSGP-smoke-STAT-PAST
Intended: 'John said that Paul was smoking there.'
SPEAKER COMMENT: [with *-hne'*] *No, he's done smoking.*

b. **Context (backshifted reading):** *I come into the room and it's very smoky. No one is currently smoking, but John tells me why there's so much smoke in the air.*
Shawátis wahèn:ron' Kó:r rotshokwèn(?#**:ne**).
Shawatis wa-ha-ihron-' Kor ro-atshokw-en-hne
John FACT-MSGA-say-PUNC Paul MSGP-smoke-STAT-PAST
'John said that Paul was smoking.'

I have illustrated cases of embedded Past-marked verbs where the matrix predicate is construed as past-referring, albeit by a district morphosyntactic strategy. These examples give rise to the generalization stated in (13).

(13) **Generalization II:** When either the Former Past or the Remote Past suffix occurs on an embedded predicate under a past-construed morphologically tenseless clause, the embedded predicate is obligatorily back-shifted relative to the matrix predicate.

Across languages, it has been shown that the interpretation of structurally matching tenses in matrix and embedded clauses vary. These are known as sequence-of-tense (SOT) effects (Ogihara 1996, a.o.). A more detailed investigation of SOT effects in Kanien'kéha is beyond the scope of this paper and will be left for future work.

3 Cessation inference strength

Most work on the Northern Iroquoian languages has converged in describing a "cessation" component to the meaning contributed by Former and Remote pasts. For example, translations provided in learner-oriented descriptions of Kanien'kéha like Martin (2023) suggest English translations which explicitly convey cessation, and Deering and Delisle (2007:426) states that the suffix conveys "that an action or state is completed". This section clarifies the nature of each of this cessation meaning for Kanien'kéha, showing that the cessation inference is defeasible with the Former Past but not with the Remote Past.

3.1 The Former Past gives rise to a defeasible cessation inference

The central empirical generalization of this paper consists of two observations. Namely, the cessation inference that arises with the Former Past and Remote Past suffixes differ in their strength. This is given in (14).

(14) a. **Generalization IIIa.** The Former Past gives rise to a defeasible cessation inference.

b. **Generalization IIIb.** The Remote Past gives rise to a non-defeasible cessation inference.

In this section, I present the examples which illustrate one half of the central empirical generalization of this paper, given in (14) above. Firstly, the examples in (15) illustrates the cessation inference that arises with the Former Past suffix, which follows the Habitual aspect suffix. In (15a), we see an on-going episodic interpretation, and (15b) illustrates a habitual interpretation.

(15) **Former Past on Habitual gives rise to a cessation inference**

a. Ohna'kénhaton shahí:ken' **ratό:ratskwe'**
Ohna'kénhaton sha'-hi-ken-' r-atorat-s-kwe'
last.time COIN-1SG>MSG-see-PUNC MSGA-hunt-HAB-PAST
'When I saw him last, he was hunting.'
⇝ He is no longer hunting.

b. Shikekhsà:'a **katá:wenskwe'**
Shi-k-ekhsá'a ka-atawen-s-kwe'
COIN-1SGA-child 1SGA-swim-HAB-PAST
'When I was a child, I used to swim.'
⇝ I no longer swim now.

The inference is defeasible for both past marked predicates, as seen in (16). In both cases, this is accomplished with a continuation explicitly denying the cessation of the event.

(16) **Cancellation of inference via explicit denial of cessation**

a. Ohna'kénhaton shahí:ken' **ratό:ratskwe'** nek tsi iah
Ohna'kénhaton sha'-k-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 ratό:rats.
te-wak-aterientar-e' toka' shekon r-atorat-s.
NEG-1SG.P-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'

b. 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.'

A further illustration of the defeasibility of this inference is the felicity of a discourse where the interlocutor questions whether the eventuality of a Former Past marked verb continues. This is shown in (17), where the Former Past marked verb *niiá:wenskwe'* 'used to happen' comes with the inference that the 'happening' has ceased. Speaker B may felicitously ask whether the 'happening' continues to the present, utterance context. If Speaker A commits herself to asserting the cessation of the event under discussion by the use of the Former Past, Speaker B's question should be infelicitous.

(17) **Defeating inference by felicitous questioning of cessation**
Context: *After explaining an old custom for burying the dead.*
Speaker A. Tho shes niiá:wens**kwe'**.
tho shes ni-ia-wen-s-kwe'.
that used.to PRT-FISGA-happen-HAB-FOR.PAST
'That's what used to happen.'

Speaker B. Shé:kon ken tho nihatiiéhrha'?
shekon ken tho ni-hati-iehr-ha'?
still Q that PRT-MPLA-do-HAB
'Do they still do that?'

As noted above, the cessation component of the meaning of the Former Past is typically central to how it is presented in descriptions. While the examples above accord with the centrality of the cessation component, I have shown here that the inference may be cancelled.

3.2 The Remote Past gives rise to a non-defeasible cessation inference

Turning now to the contribution of the Remote Past, I illustrate the second half of the central generalization of this paper, repeated in (18).

(18) **Generalization IIIb.** The Remote Past gives rise to a non-defeasible cessation inference.

To begin, we see that the use of the Remote Past also gives rise to a cessation inference, as illustrated in (19).

(19) **Remote Past on Stative gives rise to a cessation inference**

a. Shawátis **rotshokwèn:ne**.
Shawatis ro-atshokw-en-hne
John MSGP-smoke-STAT-REM.PAST
'John was smoking.'
⇝ John is not currently smoking

b. **Context:** *Paul and Sue got married in the 80s. Someone asks me whether I know Paul*
Hen riienté:ri'. Sue **rotiniakòn:ne'**.
Hen ri-ienteri-'. Sue roti-niak-on-hne
Yes 1SG>MSG-know-PUNC. Sue MDUP-marry-STAT-REM.PST
'Yes, I know him. He was married to Sue.'
⇝ They are not married anymore

However, unlike the case with the Former Past, the inference arising with the Remote Past is not defeasible. This is seen in the examples in (20). In (20a), the inference cannot be cancelled by an explicit denial of the cessation. Furthermore, in (20b), the inference cannot be cancelled by an ignorance statement.[3]

(20) **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 .'

[3] As a point of comparison, Cable (2017) notes for Tlingit that cessation inference arising with the "decessive epimode" is not defeasible by explicit cancellation but can nonetheless can be cancelled with statements of one's ignorance as to whether the event has ceased or not. The example in (20b) shows that this is not the case in Kanien'kéha; the cessation inference with the Remote Past cannot be cancelled in this way either.

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

When the interpretation of the Stative aspect verb is a result perfect, the use of the Remote Past gives rise to a cancelled result. Example (20b) is also an illustration of this, but can be seen more clearly with the examples in (21). In this example the result state of the keys being lost is inferred to not hold at the time of utterance. Such cancelled result inferences are also non-defeasible.

(21) **No cancellation for result perfects**
wakatiòn:ne ne akehnhotónkwa tánon' shé:kon watiè:was
wak-ati-on-hne ne ake-hnhotonkwa tanon shekon w-at-iehwa-s
1SGP-lose-STAT-REM.PST NE 1SGP-keys and still NP-look.in.vain-HAB
'Intended: I had lost my keys and I still can't find them.'

Together, the examples in the last two sections have shown that the two Past suffixes are semantically differentiated by the strength of their cessation inferences.

4 Distributional differences

The final observation I would like to make in this paper is that the distribution of the Former and Remote Past suffixes is not fully predicted from currently available descriptions. These suffixes are typically described as being in complementary distribution, determined by the aspectual form of the verb. This claim is made implicitly in much of the work across the family beginning with Lounsbury (1953) on Oneida. Though he distinguishes between the two suffixes terminologically, he notes that the choice between the two past suffixes is conditioned by aspect.[4] More explicitly, Ormston (1993) argues that the two past suffixes are allomorphs. The semantic generalizations drawn above point to the opposite conclusion and in this section, I forward distributional evidence already alluded to above that these suffixes are not allomorphs. Specifically, we see that the aspectual form of the suffix does not completely determine which past suffix is used.

The distribution of the Past suffixes is traditionally described as conditioned by the aspectual suffix. Specifically, the Former Past is described as suffixing to Habitual forms whereas the Remote Past is described as suffixing onto Stative forms. While this description covers many of the uses of these forms, it is not the complete picture. As early as Hopkins (1988:157–8), it has been noted that the Former Past is possible on Stative forms. Hopkins provides the following examples:

[4] For work implicitly suggesting that these suffixes are related, see Michelson, Price, and Lickers (2011) for Seneca, Cayuga, and Kanien'kéha, Lukaniec (2018:322) for Wendat. In contrast, Woodbury (2018:166ff) notes the wider distribution of the Past suffixes with respect to the aspectual form in Onondaga, though still labels them the Habitual Past and Stative Past.

(22) a. thotaweià:tonhkwe'
t-ho-at-aweia't-on-hkwe'
CIS-MSGP-SR-enter-STAT-FOR.PST
'He had been coming in."

b. rohiákwenhkwe'
ro-ahi-a-kw-en-hkwe'
MSGP-fruit-JR-pick-STAT-FOR.PST
'He had been picking fruit."
(Hopkins 1988:p. 157–8)

There appears to be substantial variation in the acceptability of such forms. Ormston (1993:109) notes that the speaker she consulted does not accept forms reported by Postal (1962). Similarly, speakers with whom I work report that (22a) is ungrammatical, and that both the Former Past and the Remote Past are permissible with the predicate *ahiakw* 'pick fruit' in the Stative aspect (22b). Whether this variation reflects dialect differences, language change, or contextual factors needs further investigation. Nonetheless, we are able to draw one generalization, given in (23).

(23) **Generalization IV:** Stative aspect predicates which do not allow the Remote Past use the Former Past with Stative aspect verbs.

This can be seen in the examples in (24).

(24) a. * rowennanóte**hne'**
ro-wennahnot-e-hne'
MSGP-read-STAT-REM.PST
Intended: 'He was reading.'

b. rowannahnóta**hkwe'**
ro-wennahnot-a-hkwe'
MSGP-read-STAT-FOR.PST
'He was reading.'

In cases where the Former Past is used with the Stative aspect, note that the cessation inference is once more defeasible. This upholds Generalization III made in §3, and demonstrates that the defeasibility of the cessation is due to the suffix rather than the aspectual form.

(25) Shontakatáweia'te rowennahnó:tahkwe'
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.'

Given this, we see that the Remote Past appears to have a more limited distribution than the Former Past. The remaining question is which verbs are able to take the Remote Past. An important future research direction for the past suffix is to determine more precisely what the correct distribution of each past suffix is.

5 Towards an account

In this section, I propose that the differing strength of the inferences arising with the Past suffixes is due to the lexical content of the suffixes. In other words, I propose that the Former Past is a plain PAST tense, which triggers a cessation implicature. On the other hand, the Remote Past is a DISCONTINUOUS PAST in the sense of Plungian and van der Auwera (2006), where the cessation component is entailed by the lexical contribution of the suffix. I briefly sketch the resulting analysis.

The central analytical point I would like to propose here is that the two suffixes differ in their truth-conditional contributions. Whereas the contribution of the Former Past is solely to express the anteriority of the reference time, as in (26a), the Remote Past expresses anteriority and further expresses the cessation. I implement the cessation directly in the denotation of the Remote Past as an assertion that there exists a time interval between the past reference interval and the evaluation time where the predicate does not hold, stated in (26b).

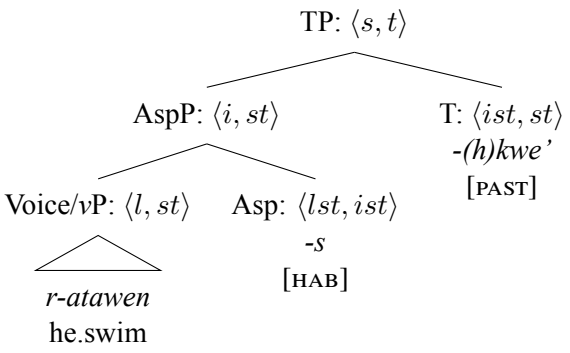
(26) a. *-(h)kwe'* $\rightsquigarrow$ $[\![\text{PAST}]\!] = \lambda\varphi_{\langle i,st\rangle}\lambda w\exists t.\ \boxed{t < t_0}\ \wedge\varphi(t,w)$

b. *-hne'* $\rightsquigarrow$ $[\![\text{DISCONT.PAST}]\!] = \lambda\varphi_{\langle i,st\rangle}\lambda w\exists t\exists t'.\varphi(t,w) \wedge \boxed{t < t' < t_0 \wedge \neg[t' \subseteq \tau(e)]}$

I will sketch one implementation of this here. This account rests on the assumption that the tense suffixes are both exponents of the T-head. I will further assume the composition illustrated in (27b). The event variable of Voice/*v*P is a closed off by Asp, which also introduces the reference time interval and relates it to the runtime of the event. Finally, T relates this reference interval to the evaluation time, which is the utterance time in matrix contexts. I show these as right-headed to reflect the surface morpheme order.

(27) a. r-atawen-s-kwe'
MsgA-swim-HAB-FOR.PST
'He was swimming.' (episodic)

b.



In this section, I will focus on the on-going episodic interpretation of the Habitual and Stative aspect. That is, I assume that these two aspects express that the runtime of (a component of) the eventuality contains the reference time. I assume that deriving the habitual and perfect interpretations are orthogonal to their interaction with tense.[5] Given this caveat, the denotations of the aspects I assume for concreteness is given in (28).

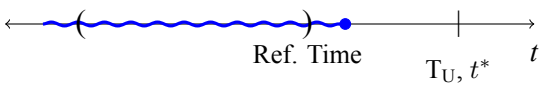
(28) **Aspect denotations**
$[\![\text{STAT}]\!]^g = [\![\text{HAB}]\!]^g = \lambda\varphi_{\langle l,st\rangle}\lambda t\lambda w\exists e.\ \boxed{t \subseteq \tau(e)}\ \wedge\varphi(e,w)$

[5] A possible analysis for the episodic and habitual interpretations of the Habitual aspect along these lines follows Ferreira (2016). In the perfect interpretation of the Stative aspect, the on-going eventuality is the result state of the predicate, rather than the dynamic portion of the event.

The contribution of the Former Past and Remote Past suffixes, assumed to be exponents of T, is to place this reference time past relative to the utterance time. In the case of the Former Past, this results in the meaning where there is a past time interval over which a swimming event took place. The denotation is given in (29a). Note that this meaning underdetermines the situations is being expressed. Because of the imperfective denotation given to the aspect, the meaning in (29b) is compatible with situations where the event has ceased (29c) and with situations where the event continues. This underdetermination permits the defeasibility of the cessation inference.

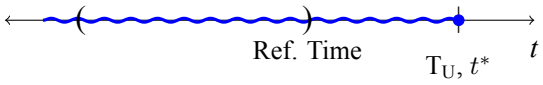
(29) a. $[\![$ r-atawen-HAB-PAST $]\!] = \lambda w \exists t \exists e.\text{he.swim}(e, w) \wedge t \subseteq \tau(e) \wedge \boxed{t < t^*}$

b. Past reference time interval, ceased eventuality



(Situation 1)

c. Past reference time interval, continuing eventuality



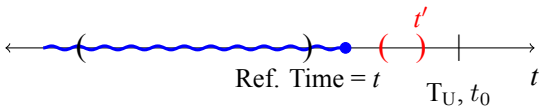
(Situation 2)

In the case of the Remote Past, the resulting meaning is subject to a stronger condition. In the example in (30a), we see that in addition to there being a past time interval over which a smoking event took place, there is an assertion that there exists some other time interval between the reference interval and the utterance time where this smoking event does not hold. This is stated in (30b) and illustrated in the diagram in (30c).

(30) a. ro-atshokw-en-hne'
MSGP-smoke-STAT-REM.PST
'He was smoking (and is not currently smoking).' (episodic)

b. $[\![$ ro-atshokw-STAT-DISCONT.PAST $]\!]$
$= \lambda w \exists t \exists t' \exists e.\text{he.smoke}(e, w) \wedge t \subseteq \tau(e) \wedge \boxed{t < t' < t_0 \wedge \neg[t' \subseteq \tau(e)]}$

c.



This section has sketched one implementation of the differing truth conditional contributions of the two past suffixes. In doing so, I have claimed that the differing strengths of the cessation inference comes about from the meanings lexically associated with the past suffixes. The Former Past is a past tense, and its cessation inference is implicated. In the case of the Remote Past, the cessation inference is entailed and encoded in the meaning of the suffix.

6 Further questions and future directions

In this paper, I have forwarded two novel empirical observations. Firstly, I have shown that the Former Past and Remote Past suffixes differ in their semantic contribution. While both suffixes restrict the reference time of the clause to the past and come with cessation inferences, this inference

arising with the Former Past is defeasible whereas the inference arising with the Remote Past is not. Secondly, I have shown that the distribution of the Remote Past is restricted to a subset of Stative aspect predicates, which has not been explicitly described in prior work. Both these observations point towards the conclusion that these suffixes are syntactically and semantically distinct, in contrast to earlier analyses of these suffixes. To end, I discuss two further questions for how to make sense of these observations within the overall picture of Kanien'kéha's temporal system.

Firstly, while the cessation inference of the Remote Past was taken to be part of the conventional meaning of the suffix, the cessation inference of the Former Past was noted to be defeasible. I took this to be an implicature, but did not spell out the pragmatic reasoning taken to draw this implicature. There are two notable proposals for deriving cessation implicatures, which are directly relevant for the picture of Kanien'kéha's optional tenses presented here. Altshuler and Schwarzchild (2013) discuss similar cessation inferences (and their absence) for English stative predicates, and derive it as an implicature arising from competition between past and present alternatives. Cable (2017) provides an alternative account for Tlingit, a language with an optional past and a covert non-future tense. This particular tense inventory prevents the application of an analysis like the one given by Altshuler and Schwarzchild. Determining the suitability of these proposals in accounting for the Kanien'kéha facts above, however, rests on the resolution of the second further question which was beyond the scope of this short paper.

This further question relates to the logical form of morphologically tenseless clauses. In deriving the inference strength pragmatically like Altshuler and Schwarzchild (2013), it is crucial to understand the status of the bare aspectual forms of verbs. While Kanien'kéha's morphologically tenseless clauses bear some similarity to those previously discussed, such as St'át'imcets (Matthewson 2006) and Washo (Bochnak 2016), whether the Kanien'kéha data evidence a covert non-future tense remains for future work.

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