An operator-particle approach to *again* doubling in Kanien'kéha*

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1. Introduction

The doubling of seemingly redundant morphemes has been documented extensively in constructions associated with quantification (e.g., Zanuttini 1991, Zeijlstra 2004 on negative concord; Zeijlstra 2007 on modal concord) and focus (e.g., Lee 2005, Barbiers 2014, Erlewine 2017, Sun 2021, Yip to appear on 'only' doubling; Quek and Hirsch 2017 on 'even' doubling), illustrated in (1) and (2), respectively.

(1) I **ain't never** lost a fight. (Double negative in AAVE; Labov 1972)

(2) **Maar** een boek ken ik **maar**.
only one book know I only
'I only know one book.' ('Only' doubling in Dutch; Barbiers 2014)

The most prominent account of doubling phenomena is the OPERATOR-PARTICLE ANALYSIS (Lee 2005, Quek and Hirsch 2017, Sun 2021, Hirsch 2022, *a.o*) in which the doubled morphemes represent two different heads: (i) a semantically active operator and (ii) a semantically vacuous concord marker. Within this bipartite structure, the operator is interpreted at its scope position while the concord marker has no semantic contribution, functioning merely as a morphological reflex of the operator. This approach explains why utterances with doubling have the same meaning as their monomorphemic counterparts (compare (1) with 'I **never** lost a fight').

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Drawing on data from Kanien'kéha (a.k.a. Mohawk; Iroquoian), this paper examines a novel doubling phenomenon in which another type of element – repetitive morphemes (akin to 'again') – are doubled, as shown in (3).[1]

(3) **Á:re' s**-k-ateweiénst-ha'.
REP REP-1sgA-study-HAB
'I'm studying again.'

Like with the doubling of quantifiers and focus particles, I argue that 'again' doubling in Kanien'kéha is best accounted for under the OPERATOR-PARTICLE ANALYSIS, providing evidence for the further broadening of the theory's application across the domain of propositional operators. Within this framework, I show that Kanien'kéha's two repetitive morphemes follow the distribution of past operator-particle accounts with one morpheme – *á:re'* – patterning like a scopal operator and the other morpheme – *s-* – patterning like a semantically vacuous concord marker. This claim is supported by evidence related to the relative distribution of these two elements as well as their interaction with scope.

The remainder of this paper is organized as follows. Section 2 introduces Kanien'kéha's two 'again' morphemes – the prefix *s-* and the free-standing *á:re'* – noting their distribution and semantic effect. Section 3 proposes an operator-particle analysis of Kanien'kéha's 'again' doubling which accurately predicts these properties. Section 4 further strengthens the central claim, providing additional evidence for *á:re'* as the sole semantically active repetitive morpheme. Section 5 concludes.

2. Empirical landscape: 'again' doubling in Kanien'kéha

This section provides relevant background on the Kanien'kéha language before documenting the phenomenon of 'again' doubling, focusing on the distribution of the two 'again' morphemes and their semantic contributions.

2.1 Background on Kanien'kéha

Kanien'kéha is spoken by ∼600 people in Quebec, Ontario, and New York state (DeCaire 2023). The vast majority of speakers are Elders who learned Kanien'kéha as their first language but there is also a growing number of fluent second-language speakers (Stacey 2016). All unattributed examples in this paper come from fieldwork conducted by the author in collaboration with four native speakers of Kanien'kéha and one advanced second-language speaker. This research adopts standard theoretically-driven fieldwork methodology (see, e.g., Matthewson 2004, Bowern 2008, and Bochnak and Matthewson 2020).

Like other Iroquoian languages, Kanien'kéha is polysynthetic, making use of a host of derivational and inflectional morphology, particularly in verbs. A standard verb form is

[1] Abbreviations follow Leipzig glossing conventions with the following additions from Iroquoianist literature: DUP = duplicative; FACT = factual; HAB = habitual; NMLZ = nominalizer; PUNC = punctual; REP = repetitive; and TRANS = translocative. Agreement prefixes belong to one of three categories: agentive/subjective (A); patientive/objective (P) or transitive (X>Y) where X is the agent and Y is the patient.

presented in (4). Minimally, the verb includes a pronominal prefix expressing agreement, a verb stem, and an aspectual suffix.

(4) (PRE-PRONOMINAL PREFIX –) PRONOMINAL PREFIX – [VERB STEM] – ASPECT

Often, verbs also include one or more pre-pronominal prefixes which contribute a wide array of information ranging from modality and negation to directionality and quantification. Verbs also often appear with free-standing, uninflected words called "particles" in the Iroquoianist tradition which also denote a wide range of meanings.

2.2 Two *again* morphemes

Kanien'kéha possesses two distinct morphemes associated with event repetition – the repetitive prefix *s-* and the repetitive particle *á:re'* – both of which are translated as 'again' in grammars of the language (e.g., Martin 2023). A sentence with the repetitive prefix is presented in (5a); a sentence with both the repetitive prefix and repetitive particle is presented in (5b).

(5) a. **S**-k-atawen-s.
REP-1sgA-swim-HAB
'I'm swimming again.'

b. **Á:re' s**-k-atá:wen-s.
REP **REP**-1sgA-swim-HAB
'I'm swimming again.'

Both sentences give rise to repetitive presuppositions. Like English 'again', the presence of Kanien'kéha's repetitive morphemes introduces a presupposition that a similar event occurs temporally prior to the event being asserted. Evidence for this presuppositional status comes from projection facts. When the repetitive occurs within the scope of a question, as in (6), the presupposed content still projects.

(6) a. **Áre'** ken **s**-h-atawen-s?
REP QP **REP**-MsgA-swim-HAB
'Is he swimming?' (*presupposes:* he was swimming before)

2.3 Properties of 'again' doubling

Though it may seem that Kanien'kéha's 'again' morphemes function similarly, they differ in two crucial ways. First, they differ in distribution. While the repetitive prefix *s-* often appears on its own to express repetition, the repetitive particle *á:re'* never can. *á:re'* can only appear with a verb if that verb is marked by the repetitive prefix, as shown in (7).

(7) **Á:re'** *(**s**)-katáwen-s.
REP **REP**-1sgA-swim-HAB
'I am swimming again.'

Second, the presence of the repetitive particle *á:re'* can have an effect on the repetitive presupposition introduced by the 'again' morphemes. Though *á:re'* has no effect on the interpretation of the sentence pair in (5), its interaction with sentential negation suggests a more complicated picture. As seen in (8a), a sentence with just the repetitive prefix can give rise to a presupposition that scopes below negation, presupposing a previous event of Mary making baskets. However, when *á:re'* is added, this reading is lost; only a high scope reading is available, in which a previous event of Mary *not* making baskets is presupposed (8b).[2]

(8) Context: Yesterday, Mary made baskets but today…

a. Iah te-**ts**-ako-'ther-ón:ni.
NEG NEG-**REP**-FI.A-basket-make.STAT
'She didn't [make baskets] again.' (NEG>REP)

b. #**Á:re'** iah te-**ts**-ako-'ther-ón:ni.
REP NEG NEG-**REP**-FI.A-basket-make.STAT
Can only mean: 'Again [she didn't make baskets].' (REP>NEG)

3. Proposal

In the spirit of Quek and Hirsch 2017 and others, I argue that the morphosyntactic and semantic properties of Kanien'kéha 'again' doubling are best accounted for under an OPERATOR-PARTICLE ANALYSIS, in which a repetitive operator, realized as *á:re'*, triggers the realization of the semantically vacuous concord marker *s*-.

3.1 The semantics

In line with past work (Dowty 1979, von Stechow 1996, Jäger and Blutner 2003, Beck and Johnson 2004, *a.o.*), I propose that the repetitive presuppositions generated in Kanien'kéha repetitive constructions are the result of a repetitive operator which shares the standard semantics of repetitive *again*. This operator is a modifier of properties of events ($\langle\langle v,t\rangle,\langle v,t\rangle\rangle$) which contributes a presupposition that a similar event (*e'*) to the asserted event (*e*) has already occurred. These semantics are formalized in (9).

(9) $[\![again_{\text{REP}}]\!]_{\langle\langle v,t\rangle,\langle v,t\rangle\rangle} = \lambda P_{\langle v,t\rangle}.\lambda e\text{: } \exists e' \text{ [e' } \prec \text{ e \& P(e')]. P(e)}$

Under this lexical entry, the repetitive operator can adjoin at different levels of the derivation as long as each level denotes a property of events. The scope of the resulting presupposition is uniquely determined by the adjunction site of the operator.

[2] As seen in (8), the co-occurrence of the repetitive prefix with other prefixes sometimes result in allomorphy or fused morphemes. This has no effect on the interpretation of the utterance and appears to be a purely morphophonological process.

3.2 The syntax

Inspired by Lee (2005), Quek and Hirsch (2017), Sun (2021), I propose that repetitive constructions in Kanien'kéha involve two underlying heads: one at a scope site and one more local to the verb root. In line with the operator-particle analysis of quantifier and 'only' doubling, I posit that the higher head is a semantically active operator (the repetitive operator defined above) while the lower head is a semantically inert functional head which establishes a concord relation with the operator.[3] As a result of concord, both the Op and Prefix heads are realized as REP morphemes, albeit with different spell-outs.The resulting syntax is represented in (10).

(10) [(**REP**$_{\textbf{Op}}$) [I [[**REP**$_{\textbf{Prefix}}$] swim]]]

3.3 Application to Kanien'kéha

In this bipartite structure, I propose that Op is realized as *á:re'* while Prefix is realized as *s-*. This aligns with past accounts in which the higher and lower heads differ in their realization (see, e.g., 'only' in Vietnamese; Erlewine 2017). I further propose that the lower head Prefix *must* always be realized but that the higher head Op can be null or realized as *á:re'*; this is also in line with past accounts (see, e.g., Yip to appear).

With these claims in place, the operator-particle analysis accurately accounts for the distribution and interpretation of the two repetitive morphemes in Kanien'kéha. Because event repetition requires bipartite syntax, the repetitive operator, spelled out as *á:re'*, can never appear without the repetitive concord marker, spelled out as *s-*. All repetitive constructions include the repetitive prefix *s-* because it realizes the lower head which is always spelled out. Only some repetitive constructions also include *á:re'* because the repetitive operator can be null.

Regardless of whether Op is null or overt, the semantic contribution – the introduction of a repetitive presupposition – is uniquely made at Op. This explains why the presence or absence of *á:re'* affects the content of the presupposition introduced by a given clause, as we saw with the negation examples in (8). When Op is null, as in (8a), its exact adjunction site, and the resulting scope of its presupposition, is unclear. However, based on the felicity of the sentence in the given context, we can surmise that repetition scopes below negation, reflecting a lower adjunction site for the null Op, as illustrated in (11a). On the other hand, when Op is overt and spelled out as *á:re'*, its syntactic position is clear. In the case of (8b), the realization of *á:re'* to the left of all negation morphology suggests that Op scopes above negation, in alignment with the presupposition it introduces, as illustrated in (11b).

[3] A number of options have been proposed for the syntactic dependency behind this concord, including Agree (Zeijlstra 2004, Quek and Hirsch 2017), covert movement (Lee 2005) and overt movement (Sun 2021). I do not take a stance on the specific mechanism at play in Kanien'kéha as the exact mechanics are not essential to the current discussion. What is most important is that the concord found here aligns with past instances of operator concord, such as negative concord and 'only' concord.

(11) a. [NEG [**REP$_{Op}$** [she made baskets]]]
Presupposes: 'She made baskets before.' (=(8a))
b. [**REP$_{Op}$** [NEG [she made baskets]]]
Presupposes: 'She didn't made baskets before.' (=(8b))

In this way, the operator-particle analysis again explains the Kanien'kéha facts with the two repetitive morphemes at hand representing one semantically active operator and one semantically inactive concord prefix.

4. Additional evidence

This section presents additional evidence for an OPERATOR-PARTICLE ANALYSIS of 'again' doubling in Kanien'kéha by examining other contexts in which *á:re'* functions like the realization of the repetitive operator while *s-* functions as dummy concord. The section builds off of related analyses of scope effects found with English *again* (see, e.g., Beck and Johnson 2004, Bale 2007).

4.1 *á:re'* and ambiguity

It has widely been noted that *again*, and its cross-linguistic counterparts, give rise to ambiguity (Dowty 1979, von Stechow 1996, Jäger and Blutner 2000, Beck and Johnson 2004, among many others). One such ambiguity relates to the inclusion of the subject in the repetitive presupposition introduced by 'again'. As shown in (12), the same sentence can be used felicitously to presuppose a past event with the same (12a) or different subject (12b) as the asserted event. The availability of multiple readings is typically attributed to structural ambiguity, specifically in the adjunction site of the repetitive operator which can attach either above or below the subject in the derivation even though it appears in the same linear position in both cases.

(12) a. Context: Mary kicked the ball. Then...
[Mary kicked the ball] again.
Presupposes: 'Mary kicked the ball before.' (Full clause presupposition)
b. Context: John kicked the ball. Then...
Mary [kicked the ball] again.
Presupposes: 'The ball was kicked before.' (Subjectless presupposition)

Kanien'kéha exhibits the same ambiguity, as illustrated in (13a). However, this ambiguity is only possible in contexts without *á:re'*. If *á:re'* is present, ambiguity disappears and only one reading – the full clause reading – is possible, as seen in (13b).

(13) a. Kó:r **s**a-ha-rashéntho-'.
Paul **REP**.FACT-MsgA-kick-PUNC
✓'Again, [Paul kicked it].' (Full clause)
✓'Paul [kicked it] again.' (Subjectless)

b. **Á:re'** Kó:r **s**a-ha-rashéntho-'.
REP Paul **REP**.FACT-MsgA-kick-PUNC
✓'Again, [Paul kicked it].' (Full clause)
✗'Paul [kicked it] again.' (Subjectless)

This alternation is exactly what is predicted under the proposed analysis, in which one head (null or realized as *á:re'*) contributes repetitive semantics while the other is just a morphological reflex. When Op is null, its scope site is ambiguous, resulting in ambiguity between multiple readings. This is what we see in (13a); Op is present, as indicated by the concord prefix *s-*, but because it is null, it's not possible to determine whether it has adjoined above or below the subject, giving rise to a scopal ambiguity. When Op is overt, as in (13b), its scope site is clearly and uniquely defined, giving rise to only one possible reading, in which Op adjoins above the subject, in line with the position of *á:re'* on the left edge.

A similar effect occurs with the repetitive/restitutive ambiguity in Kanien'kéha. As has been documented in many languages, a single repetitive adverb can give rise to both repetitive readings, which express repetition of an event, and restitutive readings, which express repetition of a result state. One prominent analysis of this ambiguity posits that this ambiguity is also structural, with the restitutive reading resulting from modification of just the result state predicate of the verb (see, e.g., Stechow:1996; for further discussion of restitutive readings in Kanien'kéha, see Myers 2025, To appear). This same ambiguity is found in Kanien'kéha, as shown in (14). Just as before, the ambiguity is only possible when *á:re'* is absent, indicating a null Op (14a). When *á:re'* is present, marking the specific position of Op, only the higher-scope, repetitive reading is available (14b).

(14) a. Iontkahri:tha' **s**a-hí:i-on-'.
toy **REP**.FACT-1sg<Msg-give-PUNC
✓'Again, [I gave him the toy].' (Repetitive)
✓'I gave the toy back to him.' (=again, he has the toy) (Restitutive)
b. **Á:re'** iontkahri:tha' **s**a-hí:i-on-'.
REP toy **REP**.FACT-1sg<Msg-give-PUNC
✓'Again, [I gave him the toy].' (Repetitive)
✗'I gave the toy back to him.' (=again, he has the toy) (Restitutive)

Across a number of different contexts, repetitive constructions without *á:re'* gives rise to scopal ambiguity while constructions with *á:re'* lack ambiguity. This pattern supports the analysis of *á:re'* as the overt realization of the repetitive operator, with the repetitive prefix functioning merely as a concord marker.

4.2 *á:re'* and adjuncts

Another area in which *á:re'* patterns like the spell-out of Op is its interaction with adjuncts. Like the repetitive operator expressed as *again* in English (Bale 2007), Kanien'kéha's Op

can scope above or below clausal adjuncts and this scopal hierarchy is apparent in the word order. When *á:re'* appears *before* an adjunct linearly, the adjunct is included in the resulting presupposition; when *á:re'* appears *after* the adjunct, the adjunct is *not* included in the resulting presupposition. This is illustrated in (15) with the temporal adjunct 'in the afternoon'. When *á:re'* precedes the adjunct, the resulting sentence is infelicitous in the given context because the repetitive presupposition it triggers must include the temporal adjunct (15a). However, when the word order is reversed and the adjunct precedes *á:re'*, the sentence is felicitous, reflecting the fact that the adjunct is excluded from the repetitive presupposition (15b).

(15) Context: Mary is a basket maker. She makes one basket each day. Yesterday, she made a basket in the morning. Then today…

a. #**Á:re'** iotohétston néntie **s**a-ion-'ther-ón:ni-'.
REP afternoon REP.FACT-FI.A-basket-make-PUNC
Intended: 'In the afternoon, [she made a basket] again.'
Can only mean: 'Again, [she made a basket in the afternoon].'

b. Iotohétston néntie **á:re'** **s**a-ion-'ther-ón:ni-'.
afternoon **REP** REP.FACT-FI.A-basket-make-PUNC
'In the afternoon, [she made a basket] again.

The same thing is seen with manner adjuncts. In (16), the Op scopes above and below the adjunct 'slowly' in line with the relative word order of *á:re'* and the adjunct.

(16) Context: for my New Year's resolution, I said I would swim once every day. The first day, I swam fast. The second day…

a. #**Á:re'** skena'shòn:'a **s**a-k-atá:wen-'.
BF REP slow REP.FACT-1sgA-swim-PUNC
Intended: [I swam] again slowly.'
Can only mean: 'Again [I swam slowly].'

b. Skena'shòn:'a **á:re'** **s**a-k-atá:wen-'.
slow **REP** REP.FACT-1sgA-swim-PUNC
'[I swam] again slowly.'

Taken together, these examples further support the bipartite analysis of repetitive particle *á:re'* as Op, with all the properties of a standard repetitive operator, while the repetitive prefix *s-* functions as a vacuous concord marker.

5. Conclusion

This paper described the heretofore undocumented phenomenon of Kanien'kéha 'again' doubling. To account for the distribution of Kanien'kéha's two, co-occurring repetitive morphemes, I argued for the extension of the OPERATOR-PARTICLE ANALYSIS to event repetition. In line with past accounts, I proposed that repetition in Kanien'kéha has a bipar-

tite structure comprised of two functional heads in a syntactic dependency: (i) the repetitive operator Op, realized as *á:re'* and contributing the same standard semantics as English 'again', and (ii) a semantically vacuous concord marker Prefix, realized as *s-*. This proposal accounts for both the doubling of repetitive morphemes in the language as well as the range of readings available with repetitive constructions which vary depending on the presence and linear position of *á:re'*.

This analysis has a number of implications for the relationship between morphology, syntax, and semantics both cross-linguistically and within Kanien'kéha. While past work has applied the operator-particle analysis to the doubling of quantifiers and focus operators, this paper represents its first extension to a repetitive operator, indicating that the extent of this phenomenon is wider than previously thought. Early research into other apparent doubling patterns in Kanien'kéha suggests that a bipartite/concord approach may be extendable to other operators and propositional modifiers, as shown in (17), suggesting that further research may continue to expand the applicability of this analysis across languages.

(17) a. **Tho** *(**i**)a'-k-atá:wen-'.
there **TRANS**.FACT-1sgA-swim-PUNC
'I swam there.' (Locative modifier + translocative prefix)

b. **Tékeni** wà:-*(**t**)-k-ek-e'.
two FACT-**DUP**-1sgA-eat-PUNC
'I ate two.' (Two + duplicative prefix)

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