

# INFORMATION STRUCTURE AND WORD ORDER IN KANIEN'KÉHA\*

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## 1. Introduction

Free or “discourse-configurational” word order is a definitional property of so-called “polysynthetic” languages (Baker 1996). Kanien'kéha (or Mohawk), a Northern Iroquoian language, is an oft-cited example of a polysynthetic language. It is very morphologically complex with a high morpheme to word ratio, and it is robustly pro-drop, meaning that arguments are expressed through morphology on the verb and independent nominals are frequently dropped. This leads to complex verbs that can express meanings which would require a full sentence in English. However, when nominals are overt, they can appear in any order. Baker (1996) provides the following paradigm to show that all six logically possible word orders are grammatically acceptable in Kanien'kéha:<sup>1</sup>

- (1) a. **S V O**  
Sak ranòn:we's akoatiá'tawi.  
Sak ra-nonhwe'-s ako-atia'tawi  
Sak MSGA-like-HAB FI.P-dress
- b. **V S O**  
Ranòn:we's Sak akoatiá'tawi.

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<sup>1</sup>Glosses follow standard Leipzig conventions with the following additions: A = agent, C = complementizer, DIM = diminutive, DUP = duplicative, EMPH = emphatic, EPEN = epenthetic vowel, FACT = factual, FI = feminine indefinite, FZ = feminine zoic, HAB = habitual, INSTR = instrumental, JR = joiner, NE = ne, NSF = noun suffix, OPT = optative, P = patient, PART = partitive, PRO = independent pronoun, PUNC = punctual, PURP = purposive, Q = question particle, SRFL = semireflexive, STAT = stative. Orthography and glosses from original sources have been modified for consistency and to bring them in line with modern orthographic norms (Lazore 1993).

- c. **S O V**  
Sak akoatiá'tawi ranòn:we's.
- d. **V O S**  
Ranòn:we's akoatiá'tawi ne Sak.
- e. **O V S**  
Akoatiá'tawi ranòn:we's ne Sak.
- f. **O S V**  
Akoatiá'tawi Sak ranòn:we's.  
'Sak likes her dress.'

(Baker (1996):10, K.)

Baker (1996) argues that this free word order follows from the *Polysynthesis Parameter*, which requires all overt nouns freestanding nouns to be adjuncts in polysynthetic languages. For Baker, the true arguments of the verb are null *pros* which are indexed by morphology on the verb, and the fact that overt nouns are freely ordered can be explained by the fact that they are all adjoined high in the clause. Works such as Mithun (2015, 2020) have observed that word order is not entirely free, but rather is governed by “newsworthiness,” arguing that when a constituent is considered newsworthy by the speaker, that will be what comes first in the sentence. DeCaire et al. (2017) have refined this claim to propose that some of this apparently “free” word order in Kanien'kéha can be explained through information structural syntactic constraints. Specifically, they propose that there is a left-periphery focus position in Spec,CP for Kanien'kéha, and any constituent can appear in this initial position if it is focused.

In this paper, I build on and refine DeCaire et al.'s (2017) proposal even further, arguing that word order in Kanien'kéha is indeed governed by information structural factors. Specifically, I will propose that there is a left-periphery focus position, but that this is not the only aspect of information structure that can have an effect on word order; topics also play a role. In refining topic and focus positions in Kanien'kéha, I propose that foci are located not in Spec,CP but in Spec,TP, and that topics may occupy Spec,CP. I argue that the verb moves to T in Kanien'kéha, resulting in a base word order of VSO when nothing is topicalized or focused. Finally, constituents can also be right dislocated in Kanien'kéha, realized as a construction typically labeled ‘antitopic’ in Iroquoian literature (Chafe 1976; Mithun 2020). The following diagram represents the positions topics and foci in Kanien'kéha:

(2) [CP TOPIC [TP FOCUS [T VERB [VP DP<sub>SUBJ</sub> DP<sub>OBJ</sub> ]]]] [ ANTITOPIC ]

This proposal has important implications for the syntax of Kanien'kéha and polysynthetic languages in general. I argue that there is no need to appeal to a macroparameter in order to account for information-structural properties of Kanien'kéha, and in fact Baker's 1996 analysis cannot accurately describe these patterns. I therefore agree with Haspelmath's (2018) intuition that there is no need to use the term





- d. # Wa'thá:rihte' (ráonha) ne iontkahri'tákhwa'!  
 wa'-t-ra-riht-e' raonha ne ion-atkahri-'t-a-hkhw-a'  
 FACT-DUP-MSGA-break-PUNC MSG.PRO NE FI.A-play-CAUS-JR-INSTR-NSF  
 'He broke the toy!'
- e. # [Iontkahri'tákhwa']<sub>FOC</sub> wa'thá:rihte'!  
 ion-atkahri-'t-a-hkhw-a' wa'-t-ra-riht-e'  
 FI.A-play-CAUS-JR-INSTR-NSF FACT-DUP-MSGA-break-PUNC  
 'He broke the TOY!' (McDonald 2024)

As the examples in (4d) and (4e) show, it is infelicitous for a constituent other than the subject to appear first in an answer to the question in (4a). Note that the presence of the independent pronoun is not enough to improve the infelicitous reading in (4d). This suggests that the subject truly needs to be in initial position in order to be felicitously focused; the presence of an overt argument alone is not enough to express a focused reading. Despite the fact that independent pronouns are clearly used to express emphasis, the pronoun still must be fronted here.

As (4e) shows, answering the question in (4a) with the object in initial position instead sounds just as strange. However, if it is the object instead of the subject that is being questioned, it unsurprisingly is only felicitous to place the object in initial position, as shown in (5); alternative orders were judged infelicitous.

- (5) **Context:** You heard a crash and you know your son must have broken something, but you don't know what he broke.
- a. Nahò:ten wa'thá:rihte'?  
 nahoten wa'-t-ha-riht-e'  
 what FACT-DUP-MSGA-break-PUNC  
 'What did he break?'
- b. [Iontkahri'tákhwa']<sub>FOC</sub> wa'thá:rihte'!  
 ion-atkahri-'t-a-hkhw-a' wa'-t-ra-riht-e'  
 FI.A-play-CAUS-JR-INSTR-NSF FACT-DUP-MSGA-break-PUNC  
 'He broke the TOY!' (McDonald 2024)

These findings confirm DeCaire et al. (2017)'s proposal that information-focused elements will always appear in initial position. I will now turn to two other types of focus which DeCaire et al. (2017) did not mention in their paper, but which also confirm that no matter the type of focus, the focused element always ends up in the same left-periphery focus position.

### 3.2 Selective focus

Selective focus involves picking one option out of a set of contextually salient alternatives (Aissen 2023). The examples in (6) below show that selectively focused

elements also end up in the same initial focus position described above. Once again, it is judged infelicitous to put something that is not being questioned (such as the verb, as in (6c)) in initial position.

(6) **Context:** You know that it is either Chase or Sophia who is moving away soon, but you can't remember who.

- a. Chase katon Sophia ionhtenkiónhe'?
- Chase katon Sophia ion-ahtenti-on-h-e'
- Chase or Sophia FI.A-go.away-STAT-PURP-PUNC
- 'Is it Chase or Sophia that's moving away?'
- b. [Chase]<sub>FOC</sub> rahtenkiónhe'.
- Chase ra-ahtenti-on-h-e'.
- Chase MSGA-go.away-STAT-PURP-PUNC
- 'CHASE is moving away.' (McDonald 2024)
- c. # [Rahtenkiónhe']<sub>FOC</sub> ne Chase.
- ra-ahtenti-on-h-e' ne Chase.
- MSGA-go.away-STAT-PURP-PUNC NE Chase
- 'Chase is MOVING away.' (McDonald 2024)

### 3.3 Corrective focus

A second subcategory of focus is corrective focus. These constructions occur when a speaker corrects a previous utterance. In this context, the polar question in (7a) calls for the speaker to answer in the negative and follow up with a correction (Aissen 2023). The correction in (7b) confirms that correctively focused elements also must appear initially in Kanien'kéha. If another constituent is pronounced first instead, as in (7c), the intended meaning no longer arises; the sentence now means something completely different.

(7) **Context:** A storyboard shows a dog chasing a boy.

- a. Takó:s ken róhsere ne raksá:'a?
- takos ken ro-hsere ne ra-ksa-'a
- cat Q MSG>MSG-follow.STAT NE MSGA-child-DIM
- 'Is a cat following the boy?'
- b. Iah, [érhar]<sub>FOC</sub> róhsere ne raksá:'a.
- iah erhar ro-hsere ne ra-ksa-'a
- NEG dog MSG>MSG-follow.STAT NE MSGA-child-DIM
- 'No, the DOG is following the boy.'

- c. #Iah, [raksá:'a]<sub>FOC</sub> róhsere ne érhár.  
 iah, ra-ksa-'a ro-hsere ne erhar.  
 NEG MSGA-child-DIM MSG>MSG-follow.STAT NE dog  
 ‘No, the BOY is following the dog.’  
**cannot mean:** ‘No, the DOG is following the boy.’<sup>2</sup> (McDonald 2024)

The example in (8) shows that the word order changes again when corrective focus is placed on the object rather than the subject. Notice that the correction in (8b) is nearly identical to the infelicitous expression in (7c), and similarly, the most natural answer in (7b) is infelicitous as a response to (8a). These examples confirm that the correctively focused constituent consistently appears initially.

(8) **Context:** A storyboard shows a dog chasing a boy.

- a. Ieksá:'a ken shakóhsere ne érhár?  
 ie-ksa-'a ken shako-hsere ne erhar  
 FI.A-child-DIM Q MSG>FI-follow.STAT NE dog  
 ‘Is the dog following the girl?’
- b. Iah, [raksá:'a]<sub>FOC</sub> róhsere.  
 iah ra-ksa-'a ro-hsere.  
 NEG MSGA-child-DIM MSG>MSG-follow.STAT  
 ‘No, it’s following the BOY.’
- c. #Iah, [érhár]<sub>FOC</sub> róhsere ne raksá:'a.  
 iah erhar ro-hsere ne ra-ksa-'a.  
 NEG dog MSG>MSG-follow.STAT NE MSGA-child-DIM  
 ‘No, the DOG is following the boy.’ (McDonald 2024)

The above sections have shown that no matter the type of focus, any focused constituent must be in initial position in the sentence, motivating a focus position high in the clause.

#### 4. Topics

In this section, I will provide an overview of what topics can look like in Kanien’kéha, through an investigation of left-periphery topic shifts and right-periphery antitopics.

Topic, as opposed to focus, is slightly harder to define, although the basic understanding is that a topic is what a speaker is talking about (Aissen 2023; Krifka 2008). While focus is usually understood against a presupposition or background, topics are usually juxtaposed against a comment; the topic is identified before the speaker makes a comment about that topic. Aissen (2023) notes that left-dislocation is a common strategy among languages for marking a topic, although topics can also remain in-situ. She also states that languages often have multiple different ways for

managing topics; speakers need a way to first introduce the referent which can subsequently serve as a topic, establish that referent as a topic, indicate a persistence of that topic, and finally shift the topic to a new referent. As the following sections will show, speakers have several strategies for doing this in Kanien'kéha.

#### 4.1 Topic shift

Topics are also initial in Kanien'kéha, as some examples of topic shift from narratives written by first-language speakers will confirm. The example in (9) comes from a story in the book *Kanien'kéha Okara'shón:'a* (Williams 1976), a collection of Kanien'kéha narratives, about a mythical figure known as Tharonhiawá:kon. In the previous discourse in this narrative, a battle between a large group of people was being discussed, and in (9b), the topic shifts back to Tharonhiawá:kon, the main character.

- (9) a. Akte' nonsakaié:ra'te' tsi ronaterí:io, wahontkwé:ni'.  
 'The battle turned and they were victorious.'
- b. [Tharonhiawá:kon]<sub>TOP</sub>, wahshako'nikonhráta'  
 Tharonhiawakon wa-hshako-'nikonhr-a-t-a'  
 Tharonhiawakon FACT-MSG>MPL-mind-JR-be.in-PUNC  
 ne Tekanawíta, tánon' Aié:wate'  
 ne Tekanawita tanon' Aiewate'  
 NE Tekanawi:ta and Hiawatha  
 nahianitiohkón:ni' ne Kaianere'kó:wa.  
 n-a-hi-an-itiohk-onni-' ne Ka-ianere-'kowa  
 PART-FACT-MDUA-SRFL-group-make-PUNC NE N.A-good-big  
 'Tharonhiawa:kon, he inspired Tekanawi:ta, who was the founder of the  
 League of Peace (League of the Iroquois).' (Kaieríthon 1976b)

The example in (10), from the same story, shows a near identical construction. Here, the previous lines of the narrative had been discussing another character, Tekanawí:ta. In (10b), the topic has switched to a third character already mentioned at the start of the story, Aié:wate'. Notice that in both (9b) and (10b), there is a comma after the shifted topic, strongly suggesting a pause after that element, a characteristic feature of topics (Aissen 2023).

- (10) a. Wahní:ron', tsi nikarí:wes enkahwatsiratátie' tánon' entkarahwinekénhseke',  
 óhente' entkahnióhseke' tánon' ohné:kanos kón:ne's é' thó nikarí:wes  
 enkatátie' ne Kaianere'kó:wa.  
 'He (Tekanawí:ta) said that this confederacy would last from generation  
 unto generation, as long as the sun shines, the grass grows, and the waters  
 run.'



Antitopics have proven difficult to elicit in Kanien’kéha, given that they tend to appear more frequently in conversational discourse than in narratives or elicited speech (Mithun 2020), and because they can be hard to distinguish from regular, *ne*-marked in-situ arguments. Future work analyzing natural discourse is needed to better understand antitopics.

## 5. Building out CP and TP

Now that I have provided an overview of the ways that information structure can affect word order in Kanien’kéha (in the form of left-periphery foci, left-periphery topics, and right-periphery antitopics), I will propose a structure for where these constituents belong in the clause.

### 5.1 Topic precedes focus

First, I will establish that although both topics and foci clearly belong in the left periphery of the clause, topics consistently precede foci.

In her descriptions of topics, Aissen (2023) lists contrastive topics as a subtype of topic constructions. These are two topics that are understood in opposition to each other, often expressed within the same sentence or in immediately adjacent sentences. They can share properties with both noncontrastive topics and contrastive foci, making them sometimes difficult to distinguish from another focused element.

Like a non-contrastive shifted topic, contrastive topics establish a new discourse topic, in this case selected from a plural set introduced in the preceding conversation. They are like contrastive focus in that they evoke reference to alternatives, but they are usually non-exhaustive, and can be followed by a pause, unlike focus. Below is an example of contrastive topics in Kanien’kéha.

- (13) a. Nahò:ten ninòn:wes ne sheién:’a tánon’  
 nahoten ni-nonwe-s ne she-ien-’a tanon’  
 what MDUA-like-HAB NE 2SG>FZSG-child-DIM and  
 tsién:’a?  
 ts-ien-’a?  
 2SG>MSG-child-DIM  
 ‘What do your daughter and son like?’

- b. [Riién:’a]<sub>TOP</sub> raon’wéskwani ahá:raste,  
 ri-ien-’a ra-on’weskwani a-ha-rast-e’,  
 1SG>MSG-child-DIM MSGP-enjoy.STAT OPT-MSGA-draw-PUNC  
 [kheién:’a]<sub>TOP</sub> iakaon’wéskwani ne aióntswa’té’  
 khe-ien-’a iaka-on’weskwani ne a-ion-tswa’t-e’  
 1SG>FI-child-DIM FI.P-enjoy.STAT NE OPT-FI.A-play-PUNC  
 tewa’á:raton.  
 tewa’araton.  
 lacrosse  
 ‘My son, he likes to draw; my daughter, she likes lacrosse.’  
 (McDonald 2024)

As the following examples show, contrastive topics and foci can also co-occur in the same sentence, with the contrastive topic always to the left of the focus, which is itself to the left of the verb. Other orders were judged infelicitous in this context.

- (14) a. Q: What are you going to buy for your son and daughter for Christmas?  
 b. [Riién:’a]<sub>TOP</sub> [okón:tshera’]<sub>FOC</sub> enhihnínon’sé’,  
 ri-ien-’a okon-tsher-a en-hi-hninon-’s-e’,  
 1SG>MSG-child-DIM paint FUT-1SG>MSG-buy-BEN-PUNC  
 tánon [kheién:’a]<sub>TOP</sub> [soccer ahthé:non]<sub>FOC</sub>  
 tánon khe-ien-’a soccer ahtenon  
 and 1SG>FI-child-DIM soccer ball  
 enkhehnínonse’  
 en-khe-hninon-’s-e’  
 FUT-1SG>FI-buy-BEN-PUNC  
 ‘For my son, I’ll buy paint for him, and for my daughter, I’ll buy a soccer ball for her.’  
 (McDonald 2024)

(15) **Context:** The only food Sak eats is fish.

- a. [Sak]<sub>TOP</sub> [kéntsion]<sub>FOC</sub> khok ì:ra’ks.  
 Sak kentsion khok i-ra-’k-s  
 Sak fish only EPEN-MSGA-eat-HAB  
 ‘Sak only eats fish.’  
 (McDonald 2025)

The second example makes it especially clear that the first constituent must be a topic, while the second is clearly in focus position. In this case, *kéntsion* is not only incorporated, but is also followed by the exhaustive focus operator *khok* (‘only’). These examples show that topics and foci are not in the same position, and that in

fact, counter to DeCaire et al. (2017), there is more than one preverbal position in Kanien'kéha.

## 5.2 Embedded topics

Now that we have established that there are two left-periphery information structural positions in Kanien'kéha, and that topic precedes focus, the data thus far aligns with Rizzi's (1997; 2004) structure of the left periphery. Rizzi's structure includes not only CP (or ForceP) at the top, but also additional projections: TopP, FocP, and FinP. But applying this structure to Kanien'kéha leads to some complications, as the behavior of embedded topics will show.

In addition, there still remains the question of whether left-periphery topics are external or internal to the clause in Kanien'kéha. Some languages distinguish between internal and external topics, as described by Aissen (1992). External topics are base-generated high, adjoined to CP, while internal topics occupy Spec,CP and move to that position, binding a trace. She claims that there are crucial differences between topics in Mayan languages, arguing that Popti' (formerly Jakaltek) and Tsotsil allow only "external" topics, while Tz'utujil allows both internal external topics.

External topics have also been referred to by the name Hanging Topic Left Dislocation (HTLD). López (2014) provides an overview of what HTLD looks like across languages, noting that left dislocated elements are often set off from the rest of the sentence by an intonational break and include a resumptive element within the main clause. He notes that reconstruction effects (such as quantifier-variable relations and Binding Theory violations) and island effects can be used to distinguish HTLD constructions from other dislocation which forms a syntactic dependency with a head in the core clause structure ("internal topics" in Aissen (1992)'s terminology). Importantly, however, López (2014) draws a distinction between polysynthetic and non-polysynthetic languages, using the argument in Baker (1996) that all overt nouns in polysynthetic languages are dislocated. Some evidence from Kanien'kéha suggests that some nouns can indeed be dislocated, as Baker suggests is true of all nouns, but most do belong in argument positions and can be moved to clause-internal topic and focus positions, not base-generated there.

One of the several diagnostics that Aissen (1992) uses to distinguish external topics from internal topics is that external topics cannot be embedded. In Kanien'kéha, topics actually are able to be embedded. This suggests that topics are not external in Kanien'kéha, because embedding verbs should not be able to take an external topic phrase as a complement. However, topics are not able to be embedded in the standard way; the particle *ne* must be used instead of the usual complementizer *tsi*.<sup>3</sup>

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<sup>3</sup>This is true when embedding both of the contrastive topic examples (14) and (15); for space purposes, only one is provided below.

- (16) Wakaterién:tare (ne) (\*tsi) [Sak]<sub>TOP</sub> [kéntsion]<sub>FOC</sub> khok í:raks.  
 wak-aterientare (ne) tsi Sak kentsion khok i-ra-k-s  
 1SGP-know.STAT NE C Sak fish only EPEN  
 ‘I know for a fact that Sak only eats fish.’ (McDonald 2025)

There is something else interesting about these examples that provides a clue that not only are topics internal in Kanien’kéha, they specifically belong in the CP layer, not in a separate topic projection as Rizzi proposes. Although the complementizer *tsi* cannot occur before the topic, it can occur after, as in the following examples:

- (17) Wakaterién:tare [Sak]<sub>TOP</sub> **tsi** [kéntsion]<sub>FOC</sub> khok í:raks.  
 wak-aterientare Sak tsi kentsion khok i-ra-k-s  
 1SGP-know.STAT Sak C fish only EPEN  
 ‘I know for a fact that Sak only eats fish.’ (McDonald 2025)

If topics belonged in a dedicated TopP position, then the following structure should be grammatical, since the complementizer in C should be able to precede the topic in TopP.

- (18) \*[<sub>TP</sub> Wakaterién:tare [<sub>CP</sub> tsi [<sub>TopP</sub> Sak [<sub>FocP</sub> kéntsion khok [<sub>TP</sub> í:raks. ]]]]]

However, as (16) shows, this is ungrammatical. On the other hand, as (17) shows, it *is* grammatical to put *tsi* after the topic, indicating that topics belong in Spec,CP rather than in TopP.

- (19) [<sub>TP</sub> Wakaterién:tare [<sub>CP</sub> Sak [<sub>C</sub> tsi [<sub>TP</sub> kéntsion khok [<sub>T</sub> í:raks. ]]]]]

### 5.3 Where is focus?

Now that we have established that topics belong in Spec,CP, the question remains of where focus fits in the clause. Thus far, this data is compatible with focus in Kanien’kéha belonging in a dedicated FocP position. However, I propose that focus is instead located in TP based on several independent linguistic factors.

First of all, Kanien’kéha lacks processes associated with subject movement to Spec,TP: there are no raising verbs, no evidence that unaccusative or passive subjects are A-moved, and no evidence for EPP movement (Baker 1996; Koenig and Michelson 2015). Additionally, Baker (1985) describes the Mirror Principle effects of the morphology of Kanien’kéha: derivational morphology is all suffixal, indicating that the verb starts low and moves up the clausal spine. Finally, more recent work (Gatchalian 2025) has proposed that the T head is always present in Kanien’kéha, even if it is null. Tense suffixes in Kanien’kéha, while optional, are at the very end of the verb

(after the derivational suffixes). It therefore follows that the verb consistently moves to T.

This leaves the position in Spec,TP empty, as the verb lands in T and there is no evidence for EPP movement. Since we have established that topics belong in Spec,CP, it is logical to posit that Spec,TP is where focused constituents belong.

## 6. Conclusion

I have shown that information structure plays an undeniable role in determining the order of constituents in a Kanien'kéha sentence. I have argued, contra Baker (1996)'s Polysynthesis Parameter, that there are two information structurally motivated positions in the left periphery: one for topics in Spec,CP, and one for foci in Spec,TP. My proposal is incompatible with Baker's, as a parameter which forces all overt nouns to be adjoined high in the clause cannot account for the structural differences that are plainly evident between topics and foci.

Combining aspects of the data presented above reveal a few more facts about the nature of word order in Kanien'kéha. If it is true that verbs consistently start low in the clausal spine and always move up to T, and that Spec,TP and Spec,CP remain empty barring further information structural movement, this would mean that the base word order in Kanien'kéha is VSO. Verb-initial word order is relatively rare in conversational Kanien'kéha and in narratives (Baker 1996), but this perhaps speaks to the frequency with which other constituents are topicalized and/or focused in the language. Additionally, the possibility of right-dislocation in the form of antitopics provides a way of deriving VOS word order, an analysis corroborated by the fact that antitopics are almost always subjects (Mithun 2020).

Finally, this analysis also has potential implications for teachers and learners of Kanien'kéha. Second-language learners are not often taught directly about word order, but rather told that whatever is most important in the sentence should come first. However, as this paper has shown, there are multiple possible ways for a constituent to be important.

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