

Tritropic clitics in Tsimshianic

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Abstract

This paper argues for a two-step model of spell-out in which morphological linearization precedes the insertion of phonological material. The empirical basis of our argument comes from a detailed examination of interrogative clitics in the Tsimshianic languages of northwest North America. In particular, we show that in Sm'algyax (Coast Tsimshian) interrogative clitics consistently linearize immediately to the left of the final DP in the root clause, thus constituting a typologically rare case of penultimate or “second-last position” clitics. We show that no combination of syntax and prosody can derive this pattern, since Sm'algyax clitics show tritropic behaviour: they are subject to distinct syntactic, morphological and phonological conditions. Instead, we propose that the observed distribution requires a linearization mechanism in which clitics come lexically specified with features that regulate their ordering relative to other constituents in a post-syntactic, pre-phonological component of the grammar. This modular approach allows us to maintain a strictly derivational model of spell-out while accounting for the distinctive linearization properties of “special” clitics.

Keywords: clitics, linearization, interrogatives, Tsimshianic, morphology, spell-out

1 Introduction

As interface phenomena *par excellence*, clitics can tell us a lot about the architecture of the grammar. It is well-established, for example, that so-called *ditropic* clitics show contradictory phonological and syntactic constituency, and must therefore have different syntactic and phonological selectional requirements (see [Klavans 1985, 1995](#) for an influential early attempt to formalize these requirements). By way of illustration, consider the behaviour of the common noun connective in Gitksan (ISO 639-3 git), a member of the Tsimshianic language family spoken in northwestern interior British Columbia, Canada. Connectives are determiner-like elements which form a syntactic

constituent with a following noun phrase but encliticize indiscriminately to the immediately preceding constituent, which can be the predicate, as in (1a) and the first instance in (1b) below, but also a preceding DP, as in the second instance in (1b):

- (1) Gitksan (Davis, 2018, 483)^{1,2}
- a. *Bax^{hl} hanak'*
 bax [=^{hl} hanak']
 run =CN woman
 'The/a woman ran.'
- b. *Ga'ahl hanak'^{hl} gat.*
 ga'a [=^{hl} hanak'] [=^{hl} gat]
 see[-3.II] =CN woman =CN man
 'The/a woman saw the/a man.'

See also S.R. Anderson (2005, Chapter 2) on ditropic determiners in the Northern Wakashan language Kwak'wala, which show similar behaviour.

In this paper, we show that clitics can be not only ditropic but also *tritropic*: in addition to differing phonological and syntactic requirements, they can also have conflicting *morphological* requirements. The idea that there is an irreducible morphological component to clitics is not new: for example, S.R. Anderson (2005, 83) claims clitics "...are not syntactic objects at all, but morphological ones: overt morphological markers of the morphosyntactic properties of phrases." However, Anderson effectively subsumes morphology (including clitics, qua phrasal affixes) to the phonology, employing a set of optimality theoretic constraints operating on the PF side of the grammar both to give clitics phonological shape and align them to their hosts. In contrast, we employ a two-step model of Spell-out (following Bye and Svenonius 2012), which allows us to separate the linearization of clitics from their phonological realization. We argue that this more modular approach allows us to accurately characterize clitics whose syntactic, morphological, and phonological behaviour all differ, without abandoning a strictly derivational approach to the architecture of Spell-out.

Empirical evidence for the model proposed here is drawn from a detailed examination of clitics in the Tsimshianic family, spoken in northwestern British Columbia and extreme southeastern Alaska. Tsimshianic languages provide an ideal laboratory for the investigation of clitics, partly because so many grammatical elements are realized in clitic form (including pronouns, connectives, modals, aspect markers, discourse

¹Glosses that deviate from the Leipzig Glossing Rules are as follows: AX = agent extraction morpheme, CN = common noun connective, I = Series I clitic, II = Series II suffix, III = Series III pronoun, INT = interrogative clitic, MANR = manner clause subordinator, PN = proper noun connective, SUB = subordinator, SX = intransitive subject extraction morpheme, T = T verbal suffix, TR = transitive verbal suffix, and VER = verum.

²For example sentences, we use the individual community orthographies of each Tsimshianic language. The orthographies are in fact relatively consistent across the family. Underlined consonants represent uvular consonants, the apostrophe <'> represents a glottal stop, and consonants modified by an apostrophe represent glottalized consonants. The orthographies differ in the following ways: <x> represents a voiceless *prevelar* fricative in Gitksan, Nisga'a, and Sgüüxs, but a *uvular* fricative in Sm'algyax; <hl> represents a voiceless lateral fricative in Gitksan and Nisga'a, while the same sound is written as <l> in Sm'algyax and Sgüüxs; voiced (post)alveolar affricates are written as <j> in Gitksan and Nisga'a and as <dz> in Sm'algyax and Sgüüxs; and preglottalized sonorants (including nasals, glides, and approximants) are indicated by an apostrophe *preceding* the consonant in Gitksan, Sm'algyax, and Sgüüxs (e.g., <'n>), but by an apostrophe *above* the consonant in Nisga'a (e.g., <ṇ>).

particles, and illocutionary force markers), but also because they show a complete range of variation in location (from initial and second position to final and second-last position) and in the direction of their phonological attachment (including proclitics, enclitics, and “flexi-clitics” which can lean either way). See [Mulder and Sellers \(2010\)](#) for a survey of clitic classes in Sm’algayax (Coast Tsimshian: ISO 639-3 tsi).

We focus here specifically on interrogative clitics in the four Tsimshianic languages: Gitksan and Nisga’a of the Interior Branch, and Sgüüxs (Southern Tsimshian) and Sm’algayax of the Maritime Branch. In three of the four languages—Gitksan, Nisga’a, and Sgüüxs—interrogative clitics always appear in clause-final position. (Gitksan and Nisga’a employ an interrogative clitic *Int* only in polar questions, while Sgüüxs uses its interrogative clitic in both polar and *wh*-questions.) However, Sm’algayax shows a unique pattern: its interrogative clitics occupy “second-last” (penultimate) position in a root clause. It is this pattern that is the principal preoccupation of this paper: we argue that it can neither be accounted for by the syntax (which is identical in relative respects across the family), nor by the phonology (since interrogative clitics are uniformly enclitic across the family). Since previous typological work (e.g., [Billings 2002](#); [Cysouw 2005](#)) casts doubt on the very existence of this class of clitics, an important secondary goal of the current paper is to establish its existence beyond a reasonable doubt.

The paper is structured as follows. In Section 2, we supply relevant background on the Tsimshianic languages, before turning in Section 3 to a comparison of interrogative clitics across the family, showing that in three out of the four languages, the syntax maps straightforwardly onto the phonology to derive sentence-final position: interrogative clitics are base-generated in an IntP projection high on the right periphery of root clauses, and are realized phonologically as enclitics. Section 4 undertakes a more detailed investigation of the Sm’algayax system, which differs crucially in the location of its interrogative clitics. We show that what appear to be four different locations all reduce to the same generalization: Sm’algayax interrogative clitics always occupy penultimate position, immediately before the final DP in a root clause.

In Section 5, we turn to our analysis of these facts. We argue that all four Tsimshianic languages have the same underlying syntax and phonology, with interrogative clitics being base-generated on the right periphery and attaching leftwards phonologically; however, Sm’algayax differs in being subject to an extra morphological condition which procliticizes them to the final DP in the root clause. We propose that this condition is lexically encoded on the clitic, and activated in a post-syntactic linearization component as part of the first step (L-match) of a two-step model of Spell-out, prior to Insert, where phonological material is added.

Section 6 concerns apparent exceptions to penultimate placement in Sm’algayax, where interrogative clitics show up in absolute final position. We show that these cases fall into two types. The first is where a null pronominal (*pro*) serves as the morphological host for the clitic: these cases can readily be subsumed under the second-last position generalization, and provide additional evidence that the relevant condition is morphological rather than phonological. The second is where there is no DP at all to serve as a morphological host, in which case the clitic defaults to final position.

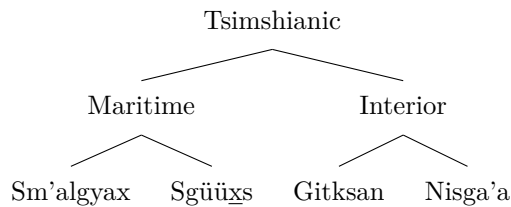
In Section 7, we briefly discuss the allomorphy associated with Sm'algyax interrogative clitics, arguing that allomorph choice takes place at Insert, following which allomorphs are subject to regular phonological processes in the phonology proper. Section 8 concludes.

2 Tsimshianic background and relevant morphosyntactic processes

This section provides a background to the Tsimshianic languages, including a brief description of several relevant morphosyntactic processes, with illustrative examples from Gitksan and Sm'algyax.

The Tsimshianic peoples and languages are indigenous to northwestern British Columbia, Canada. The family consists of two branches, each containing two mutually intelligible languages (Figure 1). The Interior branch of the family is made up of Gitksan and Nisga'a, while the Maritime branch is made up of Sm'algyax (a.k.a. Coast Tsimshian) and Sgüüxs, (a.k.a. Southern Tsimshian).

Fig. 1 Tsimshianic family (Forbes, 2023)



Tsimshianic languages are head-marking, with core arguments (subject and primary object) registered by agreement on the predicate. There are two agreement series: a set of pre-predicative clitics and a set of suffixes, plus a set of independent pronouns used in the absence of agreement. We term these Series I, II and III, respectively, following Rigsby (1986) on Gitksan. There are also two clause types, *independent* and *dependent* (Rigsby, 1986). In both types, morphological alignment is strictly ergative (see Forbes 2018 on “persistent ergativity”); in independent clauses, transitive subjects (A-arguments) are marked by a Series II suffix, and transitive objects (O-arguments) and intransitive subjects (S-arguments) are realized as an independent (Series III) pronoun or a full DP. In dependent clauses, A-arguments are marked by a Series I clitic and S- and O-arguments are marked by a Series II suffix. The third person Series II agreement suffix *-t* is often absent on the surface due to a pervasive morphophonological process whereby *-t* is deleted when immediately followed by an agreeing DP (Davis 2018 and references therein). We represent deleted *-t* in the third (gloss) line of the examples using square brackets [-3.II] (where II stands for ‘Series II’).

All Tsimshianic languages are predicate (Pred) initial, with transitive subjects strictly preceding objects. All core arguments precede non-core arguments and

adjuncts (X), which are introduced by an all-purpose preposition, *a* in Gitksan, Nisga'a and Sgüüxs, and *(d)a* in Sm'algyax. Examples of Pred-A-O-X sentences are given below for Gitksan (2), Nisga'a (3), Sm'algyax (4), and Sgüüxs (5).

- (2) Pred-A-O-X word order in Gitksan (Forbes, 2018, 21)
Gi'namis Henryhl wineex as Aidan.
 gi'nam-ə [=s Henry] [=hl wineex] a [=s Aidan]
 give-TR[-3.II] =PN Henry =CN food PREP[-3.II] =PN Aidan
 'Henry gave food to Aidan.'
- (3) Pred-A-O-X word order in Nisga'a (Tarpent, 1987, 276)
Giñamis Peterhl ts'iksna'aks as Mary.
 Giñam-ə [=s Peter] [=hl ts'iksna'aks] a [=s Mary]
 give-TR[-3.II] =PN Peter =CN bracelet PREP[-3.II] =PN Mary
 'Peter gave the/a bracelet to Mary.'
- (4) Pred-A-O-X word order in Sm'algyax
K'yilams Dzoon 'wäh das Meeli.
 k'yilam-ə [=s Dzoon] [=a 'wäh] da [=s Meeli]
 give-TR[-3.II] =PN John =CN oolichan PREP[-3.II] =PN Mary
 'John gave oolichans to Mary.'
- (5) Pred-A-O-X word order in Sgüüxs (Dunn, 1979b, 132)³
Nah dzakwdi oli xwanit ee lax likst'aa.
 nah dzakw-t-ə [=i ol] [=i xwan=it] a [=i lax
 PFV kill-T-TR[-3.II] =CN bear =CN deer-PN PREP[-3.II] =CN on
 likst'aa]
 island
 'The bear killed the deer on the island.'

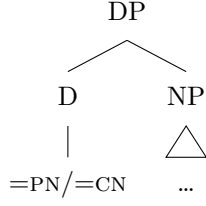
These examples additionally show that (argument) nominals are obligatorily introduced by a clitic determiner, known in the Tsimshianic literature (following Boas 1911) as a “connective”: see Davis 2018). Common nouns occur with a *common noun connective* (=CN', Gitksan/Nisga'a =hl, Sm'algyax =a/=l, and Sgüüxs =i), while proper nouns occur with a *proper noun connective* (“=PN”, =t or =s).⁴ As mentioned in the introduction, these are *ditropic* clitics, that is, they are syntactically associated with a nominal to their *right*, but phonologically encliticize to an XP to their *left*. We assume that connectives head a DP projection, see Davis (2018) among others.⁵

³The connective appearing on *xwan* ‘deer’ is an instance of the connective used to introduce a following oblique prepositional phrase, a process that is unique to Sgüüxs. We thank Clarissa Forbes (p.c.) for explaining this pattern.

⁴The PN connective is also used with demonstratives in the Interior branch and with independent (Series III) pronouns in the Maritime branch.

⁵The common noun connective =a in Sm'algyax deletes when it follows a vowel or sonorant (Mulder, 1994; M.S. Anderson & Ignace, 2008a).

(6) Connectives head DP



Wh-movement, focus fronting, and relativization all involve $\bar{A}$ -movement to a clause-initial position. $\bar{A}$ -configurations feature distinctive extraction morphology on or before the predicate, which is sensitive to the grammatical role of the moved XP. In addition, left-peripheral common-noun connective introduces the remnant clause. See, e.g., [Davis and Brown \(2011\)](#); [Brown \(2016\)](#); [Forbes \(2017, 2018\)](#) on Gitksan and [Brown 2024a, 2024b](#) on Sm'algyax. Below we see examples of focus movement of an S-argument in Gitksan and Sm'algyax. These examples feature a connective encliticized to the moved XP, and a special suffix *-ət* that appears when an S-argument has been $\bar{A}$ -moved.

(7) Focus movement of S-argument in Gitksan ([Forbes, 2017, 3](#))

Ansiip'insxwi'yhl'witxwit ky'oots.
 ansiip'insxw-y =hl'witxw-ət ____ ky'oots
 friend-1SG.II =CN arrive-SX yesterday
 'My friend came yesterday.' ('The one that came yesterday is my friend.')

(8) Focus movement of S-argument in Sm'algyax ([Brown, 2024a, 71](#))

Pada sisaaxsīt.
 Pat =a sisaaxs-ət ____
 Pat =CN laugh-SX
 'Pat laughed.' ('The one that laughed was Pat')

Following work on both Gitksan ([Davis & Brown, 2011](#); [Davis & Nederveen, 2021](#)), and Sm'algyax ([Brown & Davis, 2024a, 2024b](#); [Davis & Brown, 2024](#)), we adopt the hypothesis that across Tsimshianic there are two *wh*-question formation strategies, which we term *direct* and *indirect* movement. Direct movement proceeds much as in English: a *wh*-word undergoes successive-cyclic movement to the left periphery of the clause. Indirect movement structures, on the other hand, feature a predicative *wh*-word that is base generated in initial position and takes a DP as its argument (typically a headless relative clause; see [Aonuki 2021](#) on Gitksan headless relative clauses and [Davis and Brown to appear](#) on *wh*-predication in Sm'algyax). Although the two constructions are often morphologically indistinguishable, several syntactic diagnostics support the distinction. First, certain elements, such as independent pronouns and demonstratives, cannot be predicative but can appear in initial position via $\bar{A}$ -movement. Second, *wh*-predicates cannot be preceded by connectives or associative plural markers, whereas fronted *wh*-words can. Third, predicative *wh*-words

occur with headed relative clauses, which is impossible with direct ($\bar{A}$ -) movement (see Davis and Brown 2011; Davis and Nederveen 2021; Brown 2024a; Davis and Brown to appear for examples and argumentation).

A further diagnostic comes from a construction unique to Sm'algyax. *Wh*-questions may feature the relative pronoun *gu*, which unambiguously signals the indirect movement structure.⁶ The examples below show that *gu* introduces relative clauses, both headed (9) and headless (10):

- (9) Sm'algyax headed relative clause with *gu*
Wilaayu hana'a gu sis'aaxsit.
 wilaay-ə-u=a hana'a=a [**gu** sis'aaxs-ət ____]
 know-TR-1SG.II=CN woman=CN REL laugh-SX
 'I know the woman that laughed.'

- (10) Sm'algyax headless relative clause with *gu*
Gabu gu nah dzabn.
 gap-ə-u=a [**gu** nah dzap-ə-n ____]
 eat-TR-1SG.II=CN REL PFV make-TR-2SG.II
 'I ate what you made.'

Gu may also appear in *wh*-questions, as shown in (11) below.⁷

- (11) Sm'algyax *wh*-question with *gu*
Godu gu yoyksis Meeli?
 goo=du=a [**gu** yoyks-ə-t=s Meeli ____]
 what=INT=CN REL wash-TR-3.II=PN Mary
 'What did Mary wash?' Literally: 'What is [(the thing) that Mary washed]?'

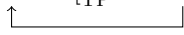
By hypothesis, (11) involves a *wh*-predicate with a relative clause argument. Direct and indirect movement structures are schematized below in (12) and (13), respectively. In (12), a *wh*-word $\bar{A}$ -moves to [Spec,CP], while (13) features a predicative *wh*-word and a headless relative clause complement, which is optionally marked by the presence of the relative pronoun *gu* in [Spec,CP].⁸

⁶ *Gu* is probably historically a reduced form of the *wh*-word *goo* 'what' (cf. Gitksan *(a)gu* 'what'); however, it is not synchronically a question word.

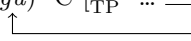
⁷ We gloss Sm'algyax's *wh*-interrogative clitic as *=(d)u*. It surfaces as *yu* immediately following vowel-final *wh*-words and as *du* elsewhere (including, optionally, following *wh*-words, where it is in free variation with *yu*). The realization of the clitic as *yu* can be accounted for by a regular glide insertion process that applies to avoid sequences of adjacent vowels. Some instances of *du* may similarly be analyzed as sequences of underlying *=u* following a word or affix ending in *t*, since non-glottalized stops and affricates undergo an obligatory process of prevocalic voicing throughout the family. Alternatively, these forms may reflect the combination of underlying *=du* with a preceding *t*-final element, with the resulting sequence undergoing degemination, whereby one of the adjacent coronal consonants is deleted. We return to the question of interrogative clitic allomorphy in §7.

⁸ We remain agnostic as to the internal structure of headless relative clauses in Sm'algyax. See Davis and Brown (to appear) for a recent discussion of these structures.

- (12) Direct movement:

$$[_{CP} \text{ } wh \text{ } C [_{TP} \text{ } \dots \text{ } \text{---} \text{ } \dots]]$$


- (13) Indirect movement:

$$[_{TP} \text{ } wh [_{DP} \text{ } pro [_{CP} \text{ } (gu) \text{ } C [_{TP} \text{ } \dots \text{ } \text{---} \text{ } \dots]]]]$$


As we will see in §4.3, the direct–indirect movement distinction is key to explaining variation in the placement of interrogative clitics, which may appear either clause-internally or following a *wh*-word.

3 Interrogative clitics in Tsimshianic

This section introduces interrogative clitics across the Tsimshianic language family. Across Tsimshianic, these clitics vary in terms of their linear positioning in the clause, and what kinds of questions they appear in (polar vs. *wh*-questions). We begin with the Interior languages, Gitksan and Nisga’a, before turning to the Maritime languages, Sgüüxs and Sm’algayax.

3.1 Interior Tsimshianic: Gitksan and Nisga’a

In Gitksan and Nisga’a, root-clause polar questions feature an interrogative clitic =*a*/=*aa*, which appears in clause-final position. Polar questions in both languages also often feature the negative marker *nee* (Gitksan) or *nii* (Nisga’a).⁹ An interrogative interpretation cannot be achieved solely through rising intonation (Hill & Matthewson, 2025; Matthewson, 2026).

- (14) Final-position =*aa* in Gitksan polar questions (Matthewson, 2026, 17)
Neehl baxhl bus ahl hiihluxwaa?
 nee =hl bax =hl bus a =hl hiihluxw=**aa**?
 NEG =CN run[-3.II] =CN bus PREP[-3.II] =CN morning=INT
 ‘Isn’t there a bus in the morning?’

- (15) Final-position =*aa* in Nisga’a polar questions (Tarpent, 1987, 363)
Nii mi ga’ahl andidaala’yaa?
 nii mi= ga’a =hl andi-daala-’y=**aa**
 NEG 2.I see[-3.II] =CN container-money-1SG.II=INT
 ‘Have you seen my purse?’

⁹Hill and Matthewson (2025) and Matthewson (2026) show that in Gitksan, questions marked with both *nee* and =*aa* are favoured in neutral or negative contexts with contextual evidence for the prejacent proposition *p*, while those marked only with =*aa* are favoured in contexts with contextual evidence for *p*. Though no parallel study has been carried out for Nisga’a, this characterization is consistent with the claim in Tarpent (1987, 362) that questions featuring the interrogative clitic alone in Nisga’a convey “a request for confirmation”. Sm’algayax polar questions, discussed below, are also introduced by a negative element *al*; however, Brown (2026) argues that its distribution is not associated with the same conversational effects as *nee* in Gitksan.

Unlike polar questions, *wh*-questions in Interior Tsimshianic do not feature interrogative clitics.

- (16) No interrogative clitic in Gitksan *wh*-questions (Rigsby, 1986, 303)
Naahl hlimooyin?
 naa =hl hlimoo-ə-n
 who =CN help-TR-2SG.II
 ‘Who did you help?’
- (17) No interrogative clitic in Nisga’a *wh*-questions (Tarpent, 1987, 444)¹⁰
Nda wilaa hookst?
 nda wilaa hooks-t
 how MANR use-3.II
 ‘How is it used?’

Interrogative clitics in Interior Tsimshianic are restricted to root clauses. Embedded polar questions instead feature the irrealis complementizer *ji*.¹¹

- (19) No embedded =*aa* in Gitksan (Matthewson, 2026, 7)
- a. *Gidaṣat ’nii’y ji wis(#aa).*
 Gidaṣ-a-t ’nii’y [**ji** wis(#=aa)]
 ask-TR-3.II 1SG.III IRR rain(#=INT)
 ‘She asked me if it’s raining.’
- b. # *Gidaṣat ’nii’y neehl wisaa.*
 Gidaṣ-a-t ’nii’y [nee =hl wis=aa]
 ask-TR-3.II 1SG.III NEG =CN rain=INT
 Intended: ‘She asked me if it’s raining.’
- (20) No embedded =*aa* in Nisga’a (Tarpent, 1994, 3)
Gidaṣat ’nii’y ji dimt di’axhlkw dim yuuxkwat as gun.
 gidaṣ-ə-t ’nii’y [**ji** dim=t di’axhlkw dim yuuxkw-t a
 ask-TR-3.II =3.III IRR PROSP=3.I able[-3.II] PROSP eat-3.II PREP[-3.II]
 =s gun]
 =PN this
 ‘Sara asked me whether she could eat here.’

¹⁰A restricted exception to the generalization that *wh*-questions in Nisga’a lack an interrogative clitic concerns questions ending in the demonstrative pronouns *gun/tgun* or *gus(t)/tgus(t)*. These are exceptionally marked with the clause-final interrogative clitic =*ii*, rather than the regular Nisga’a polar interrogative clitic =*aa*:

- (17) Nisga’a (Tarpent, 1987, 331)
Aguhl was guni?
 agu=hl wa =s gun=**ii**
 what=CN name[-3.II] =PN this=INT
 ‘What is this (called)?’

¹¹For analysis of Gitksan *ji*, see Aonuki (to appear).

Phonologically, the Interior Tsimshianic interrogative clitics are *enclitic*. Evidence for this comes from obstruent voicing. Throughout the family, plain obstruents are voiceless in coda position but voiced before vowels and sonorants. The interrogative clitic triggers voicing of a preceding obstruent, indicating that it is phonologically integrated with the preceding word.

- (21) Gitksan =aa triggers obstruent voicing (Matthewson, 2026, 11)

Ap siipxw 'nidaa?
 ap siipxw 'nit=aa
 VER sick 3.III=INT
 'Is he really sick?'

- (22) Nisga'a =aa triggers obstruent voicing (Tarpent, 1986, 34)

Na_x'nayinhl tya'ytgwa?
 na_x'na-ə-n =hl tya'yt^{kw}=aa
 hear-TR-2SG.II =CN thunder=INT
 'Do you hear the thunder?'

3.2 Maritime Tsimshianic: Sgüüxs and Sm'algyax

The Maritime Tsimshianic languages differ from the Interior languages in that interrogative clitics may appear in both polar and *wh*-questions. At the same time, the two Maritime languages differ from one another in the linear position of their interrogative clitics. Sgüüxs patterns with the Interior languages in exhibiting clause-final interrogative clitics, while Sm'algyax does not.

The available documentation on Sgüüxs is limited, and few minimally contrasting examples are available.¹² Nonetheless, the available data show that the language employs an interrogative enclitic =*ii* in both polar and *wh*-questions, and that this clitic appears in clause-final position.

- (23) Final-position =*ii* in Sgüüxs polar questions (Tarpent, 1994, 1)

At mi wilaaxl waadii?
 ał mi wilaax =ł waa-t=ⁱⁱ
 Q 2.I know =CN name-3.II=INT
 'Do you know her name?'

- (24) Final-position =*ii* in Sgüüxs *wh*-questions (Tarpent, 1994, 1)

Ndał gasgool hasaganii?
 nda =ł gasgoo =ł hasaga-n=ⁱⁱ
 how =CN amount =CN want-2SG.II=INT
 'How much do you want?'

¹²Sgüüxs is now considered a *sleeping* language following the passing of its last remaining fluent speaker, Violet Neasloss, in 2013. We adopt the term sleeping in recognition of ongoing revitalization efforts involving the language.

Like the Interior languages, Sgüüxs interrogative clitics are apparently restricted to root clauses. Embedded questions instead employ the irrealis complementizer *dzi*, identical with Interior Tsimshianic *ji* (the difference is only orthographic).

- (25) No embedded *=ii* in Sgüüxs (Tarpent, 1994, 3)
Güüdaxa'nu t Sara d^{zi}t di'a^xkwł dim yaaw^xgit ai gwa'a.
 güüdax-^{'nu} =t Sara [**d^{zi}**=t di'a^xkwł =ł dim yaaw^xk-t a
 ask-1SG.III =PN Sara IRR=3.I able[-3.II] =CN PROSP eat-3.II PREP[-3.II]
 =i gwa'a]
 =CN this
 'Sara asked me whether she could eat here.'

Sm'algyax likewise employs interrogative clitics in both polar and *wh*-questions. Polar questions are marked with *=ii*, while *wh*-questions are marked with *=(d)u*.

- (26) Polar *=ii* in Sm'algyax
Nah k'odzis Lucyⁱⁱ hoon?
 nah k'ots-ə =s Lucky=**ii** =a hoon
 PFV cut-TR[-3SG.II] =PN Lucy=INT CN fish
 'Did Lucy cut the fish?'
- (27) *wh* *=(d)u* in Sm'algyax
Naay^u limoom sm'ooygit?
 naa=**(d)u** =a limoom-ə =a sm'ooygit ____
 who=INT =CN help-TR[-3.II] =CN chief
 'Who did the chief help?'

Unlike the interrogative clitics in Gitksan, Nisga'a, and Sgüüxs, Sm'algyax *=ii* and *=(d)u* do not consistently surface in clause-final position. We return to their linear placement in §4. Nonetheless, their syntactic distribution parallels that of interrogative clitics elsewhere in the family. Like the interrogative clitics in the other Tsimshianic languages, Sm'algyax *=ii* and *=(d)u* are restricted to root interrogative clauses and never appear in embedded questions (Brown, 2026). Embedded polar questions instead employ the irrealis complementizer *dzi*, while embedded *wh*-questions do not bear interrogative clitic marking.

- (28) No *=ii* in embedded polar questions
*Güüdagat *(d^{zi})t kotsdīt Lucy(*=**ii**) hoon.*
 güüdax-ə-t [***(d^{za})**=t kots-t =t Lucy(*=**ii**) =a hoon]
 ask-3.II IRR=3.I cut-3SG.II =PN Lucy(*=INT) =CN fish
 'He asked if Lucy cut the fish.'

- (29) No $=\langle d \rangle u$ in embedded *wh*-questions
*Güüdagu naa(*yu) limoom sm'ooygit.*
 güüdax-ə-u [naa($\ast=(d)u$) =a limoom-ə =a sm'ooygit ____]
 ask-TR-1SG.II who($\ast=INT$) =CN help-TR[-3.II] =CN chief
 'I asked who the chief helped.'

Coordinated questions in Sm'algyax further suggest that interrogative clitics occupy a high clausal position. A single occurrence of $=ii$ or $=\langle d \rangle u$ may scope over two coordinated interrogative clauses, surfacing only once, in the first conjunct.

- (30) Coordinated polar question with single $=ii$
Al kwidiinii ada su'naalan?
 ał kwidi-n= ii ada su'naal-n
 Q hungry-2SG.II= INT and tired-2SG.II
 'Are you hungry and (are you) tired?'

- (31) Coordinated *wh*-question with single $=\langle d \rangle u$
Goyu nah gabn ada naal nah int dzapt?
 [goo= $(d)u$ =a nah gap-ə-n ____] [ada naa =ł nah in=t
 what= INT =CN PFV eat-TR-2SG.II and who =IRR.CN PFV AX=3.I
 dzap-t ____]
 make-3.II
 'What did you eat and who made it?'

Phonologically, the Maritime interrogative clitics are enclitic, like those in the Interior languages. In Sgüüxs, $=ii$ triggers obstruent voicing.

- (32) Sgüüxs $=ii$ triggers obstruent voicing (Tarpent, 1994, 1)
Al mi wilaaxl waadii?
 ał mi wilaax =ł waa-t= ii
 Q 2.I know[-3.II] =CN name-3.II= INT
 'Do you know her name?'

Sm'algyax $=ii$ likewise triggers obstruent voicing when following a consonant-final host, and glide insertion when following a vowel-final host.

- (33) Sm'algyax $=ii$ triggers obstruent voicing
Al dm yeltgidii Betty?
 ał dm yeltk-t= ii =t Betty
 Q PROSP return-3.II= INT =PN Betty
 'Is Betty coming back?'

- (34) Sm'algyax =*ii* triggers glide insertion
Gaba hana'ayiił hoon?
 gab-ə =a hana'a=**ii** =ł hoon
 eat-TR[-3.II] =CN woman=INT = IRR.CN
 'Did the woman eat the fish?'

The same processes also apply to the *wh*-enclitic =(d)u, which, however, shows a more complex pattern of contextual allomorphy, depending on whether it encliticizes to a *wh*-word or to another host. When it attaches to *wh*-words (which are all vowel-final), =(d)u optionally either triggers glide-insertion (35a) or alternatively surfaces as =du (35b):

- (35) Allomorphy: [ju]/[du] optionality on *wh*-words
 a. *Naayu la dm tgi k'apaaytgít?*
 naa=(d)**u** la dm tgi k'apaaytk-ət ____
 who=INT PROX PROSP down fall-SX
 'Who fell?'
 b. *Naadu la dm tgi k'apaaytgít?*
 naa=(d)**u** la dm tgi k'apaaytk-ət ____
 who=INT PROX PROSP down fall-SX
 'Who fell?'

However, glide-insertion is not available elsewhere: when attaching to a vowel-final non-*wh* word, =(d)u always surfaces as =du, irrespective of the preceding phonological context.

- (36) Allomorphy: [du] elsewhere
 a. *Dzindel dmt dzapdit Meelidu ts'ikts'ik?*
 dzindel dm=t dzap-t =t Meeli=(d)**u** =a ts'ikts'ik
 IRR.when PROSP=3.I make-3.II =PN Mary=INT =CN car
 'When will Mary fix the car?'
 b. **Dzindel dmt dzapdit Meeliyu ts'ikts'ik?*
 dzindel dm=t dzap-t =t Meeli=(d)**u** =a ts'ikts'ik
 IRR.when PROSP=3.I make-3.II =PN Mary=INT =CN car
 'When will Mary fix the car?'

We return to the allomorphy of =(d)u in §7.

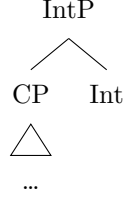
Having established that Tsimshianic interrogative clitics are syntactically right-peripheral and phonologically enclitic, we now turn to an analysis of the final position interrogative clitics in Gitksan, Nisga'a, and Sgüüxs.

3.3 Analysis: final position clitics in Gitksan, Nisga'a, and Sgüüxs

We provide an analysis of final-position clitic placement in Gitksan, Nisga'a, and Sgüüxs, which appeals only to the syntax and phonology.

We start with the syntax of interrogative clitics. As we saw in the previous section, in these three languages, (i) the interrogative clitics appear in clause-final position, following all core and non-core arguments/adjuncts (for instance, Gitksan *=aa* follows a time adverbial in example (14)), and (ii) they are restricted to main-clause questions. We argue that these facts point to the interrogative clitics (Int) being base-generated in a (right) peripheral position in the clause (IntP), and selecting a CP complement (as argued for Sm'algyax in Brown 2026). The absence of Int in embedded questions results from question-embedding predicates selecting CP complements and not IntP complements.¹³

(37) Interrogative clitic syntax



We will assume that this syntax also accounts for Sm'algyax interrogative clitics, following Brown (2026). That is, the structure in (37) accounts for the syntax of interrogative clitics across Tsimshianic, though in the case of Sm'algyax, the clitics undergo displacement from this final position, as we argue in §5.

In terms of their phonology, interrogative clitics are enclitic. We assume that a phonological enclitic feature forms part of the lexical entry for the interrogative clitic, as in (38).

- (38) a. Lexical entry for Gitksan/Nisga'a *=aa*:
 [Int] ↔ /*=aa*/
- b. Lexical entry for Sgüüxs *=ii*:
 [Int] ↔ /*=ii*/

Taken together, we have an element that is base-generated in a right-peripheral position, following its CP complement, and is enclitic. This accounts for the sentence-final linearization of interrogative particles in Gitksan, Nisga'a, and Sgüüxs, as schematized below.

¹³This [CP Int] order could also be derived without resorting to a right-headed IntP, by appealing to *heavy pied piping* of CP to [Spec,IntP] (cf. Nkemnji 1995) :

- (i) $[_{\text{IntP}} \text{CP} [_{\text{Int}'} \text{Int CP}]]$
- $$\begin{array}{c}
 \uparrow \\
 \text{CP}
 \end{array}$$

However, in the absence of any empirical evidence for this move (which would be motivated by purely theory-internal considerations) we opt for the simpler representation in (37).

- (39) a. Syntax: Int selects CP complement:
 [_{IntP} CP **Int**]
 b. Phonology: Int enclitizes to CP:
 [_{IntP} CP=**Int**]

According to Zwicky’s (1977) classification, these are *simple clitics*, in that they are not displaced from their base-generated syntactic position. In the remaining sections we turn to interrogative clitics in Sm’algyax, which we argue are *special clitics* (Zwicky, 1977), in that their linear position in the clause is not determined by their base-generated syntactic position, but is instead sensitive to other factors (which we argue in §5 to be *morphological*).

4 Penultimate clitics in Sm’algyax

Having established that interrogative clitics throughout the Tsimshianic family share a common syntactic position and phonological profile, we now turn to a distinctive property of Sm’algyax: the linear position of its interrogative clitics. Unlike the interrogative clitics of Gitksan, Nisga’a, and Sgüüxs, which uniformly appear in clause-final position, Sm’algyax interrogative clitics surface in several different clause-internal positions.

This section outlines the basic placement of the Sm’algyax interrogative clitics.¹⁴ We show that both clitics can be placed in one of four positions, which we term *argument placement*, *predicate placement*, *focus placement*, and *final placement*. We discuss the first three in this section; however, since understanding final placement depends on our analysis of the first three positions, we delay discussing it until §6.

Argument placement, predicate placement, and focus placement are illustrated in (40a), (40b), and (40c), respectively, for the *wh*-interrogative clitic *=(d)u*.

- (40) The three core placements of Int:
- a. Argument placement
Ndel wilt gapda ts’u’utsdu laalt?
 nde =l wil=t gap-t =a ts’u’uts=**(d)u** =a laalt
 when =IRR.CN COMP=3.I eat-3.II =CN bird=INT =CN worm
 ‘When did the bird eat the worm?’
- b. Predicate placement
Naal int niisdu hana’a?
 naa =l in=t niis-t=**(d)u** =a hana’a
 who =IRR.CN INT=3.I see-3.II=INT =CN woman
 ‘Who saw the woman?’

¹⁴This section builds upon prior descriptive work in Dunn (1979a) and Sasama (2001), both of which briefly address interrogative clitic positioning. Dunn (1979a, 70–72) describes a subset of the configurations discussed here, focusing on polar interrogative *=ii*, showing that *=ii* either encliticizes to the predicate or the A-argument. Sasama (2001, 84–85) describes *=ii* as occurring before the S-argument or O-argument and *=(d)u* as being placed before the S- or O- argument, unless there is a first- or second-person argument, in which case *=(d)u* appears on the *wh*-word.

c. Focus placement

Ndedu wilt gapda ts'uuts'a laalt?

nde=(d)u =a wil=t gap-t =a ts'u'uts =a laalt
 when=INT =IRR.CN COMP=3.I eat-3.II =CN bird =CN worm
 ‘When did the bird eat the worm?’

The key generalization uniting these environments is that *the interrogative clitics must linearize to the left of the rightmost DP*, which, in the case of focus placement, can be a headless relative clause. We propose in §5 that this is because interrogative particles are *morphological proclitics* (though they are *phonological enclitics*): they must linearize to the immediate left of the final DP in the clause.

Before turning to each configuration in detail, we note that interrogative clitic placement is insensitive to pre-predicative functional material (e.g., aspect, negation, grammatical particles) as well as to phrasal material that follows core arguments, including PPs and CPs. For example, in (41), the presence of the aspectual marker *dm* and the verum particle *ap* does not affect clitic placement: the interrogative clitic still surfaces to the left of the rightmost DP.

(41) *Dzindal dm ap yaltgidut Norman?*

dzindaa =l **dm** **ap** yaltk-t=(d)u =t Norman
 IRR.when =IRR.CN PROSP VER return-3.II=INT =PN Norman
 ‘When is Norman really coming back?’ (Sasama, 2001, 64)

Examples (42) and (43) demonstrate that clitic linearization is unaffected by the presence of postpredicative PPs and CPs. In both cases, the interrogative clitic surfaces to the left of the rightmost DP in the main clause..

(42) *Naal nah habooltidut Dzon asda gits'iipda?*

naa=l nah habool-t-ə-t=(d)u =t Dzon [**asda gits'iipda**]
 who=IRR.CN PFV look.after-T-TR-3.II=INT =PN John PREP yesterday
 ‘Who did John look after yesterday?’

(43) *Ndel maldidut Betty gooys Meeli?*

nde=l mal-t-ə-t=(d)u =t Betty [**goo-ə-t=s** **Meeli** ____]
 where=IRR.CN say-T-TR=INT =PN Betty go-TR-3.II=PN Mary
 ‘Where did Betty say Mary went?’

In subsections 4.1, 4.2, and 4.3, we undertake a more detailed discussion of argument placement, predicate placement and focus placement, respectively.

4.1 Argument placement

Argument placement occurs in a root clause containing a contiguous Pred–A–O sequence, resulting in the placement of the interrogative clitic between the A-argument and the O-argument. In polar questions with =*ii*, this configuration occurs either when

the clause has an unmarked Pred-A-O order (44) or with a focused oblique/adjunct in the pre-predicative focus position (45): in both cases the clitic “tucks in” between the transitive subject and the object, encliticizing to the transitive subject.

- (44) a. *Nah dzakwdil olii haas?*
 nah dzakw-t-ə =l ol=i i =a haas
 PFV kill-T-TR[-3.II] =IRR.CN bear=INT =CN dog
 ‘Did the bear kill the dog?’ (Dunn, 1979a, 71)
- b. *Di ts’ima’ans Sarayii ts’its’ii?*
 di ts’imaa-’n =s Sarah=i i =a ts’its’ii
 FOC sweet-CAUS[-3.II] =PN Sarah=INT =CN marrow
 ‘Does Sarah like marrow?’ (Sasama, 2001, 84)
- (45) *Al gits’iip nah wilt yaakada ’yuutayii haas?*
 al gits’iip =l nah wil=t yaak-t =a ’yuuta=i i =l haas
 Q yesterday =IRR.CN PFV COMP=3.I walk-3.II =CN man=INT =IRR.CN dog
 ‘Did the man follow the dog yesterday?’

In *wh*-questions, the *wh*-clitic $= (d)u$ exhibits the same argument-placement pattern observed in polar questions. In clauses with a post-predicative A-O order, including oblique-argument or adjunct questions such as (46), $= (d)u$ surfaces in penultimate position between the subject and the object, phonologically encliticizing to the subject.

- (46) *Dzindel dmt dzapdit Meelidu ts’ikts’ik?*
 dzinde =l dm=t dzap-t =t Meeli=(d)u =a ts’ikts’ik
 IRR.when =IRR.CN PROSP=3.I make/fix-3.II =PN Mary=INT =CN car
 ‘When will Mary fix the car?’

Argument placement is schematized in (47).

- (47) *Argument placement*
- | | | |
|----|--|------|
| a. | [(FOC) Pred DP _A =i i DP _O] | PolQ |
| b. | [(WH Pred DP _A =(d)u DP _O] | WhQ |

4.2 Predicate placement

Predicate placement occurs when an interrogative clitic linearizes to the left of a DP that may be an intransitive subject, transitive subject, or object, as long as it is the last DP in the matrix clause. The interrogative clitic then phonologically encliticizes to the preceding predicate, hence the term *predicate placement*.

Starting with polar questions, the clitic $=i i$ exhibits predicate placement in questions with monovalent predicates and otherwise unmarked Predicate-Subject word order, as in the examples in (48), where the clitic linearizes to the left of the S-argument.

- (48) a. *Nah siipgiⁱⁱ 'yuuta?*
 nah siipk=ⁱⁱ =a 'yuuta
 PFV sick=INT =CN man
 'Was the man sick?' (Dunn, 1979a, 70)
- b. *Asgüüⁱⁱ ts'ali?*
 asgüü=ⁱⁱ =a ts'al-i
 funny=INT =CN face-IRR.1SG.II
 'Is my face funny?' (Sasama, 2001, 84)

The following examples involve focus movement of an argument to the left, leaving a single post-predicative DP; in these cases, the interrogative clitic precedes an A-argument when the O-argument is focused (50), and precedes the O-argument when the A-argument is focused (49).

- (49) *Xsoo wa'atidiⁱⁱ Clarence?*
 xsoo =a wa'at-ə-t=ⁱⁱ =t Clarence ____
 canoe =CN sell-TR-3.II=INT =PN Clarence
 'Did Clarence sell a canoe?' O-extraction

- (50) *Klalens int waat'adiⁱⁱ xsoo?*
 Klalens =a in=t wa'at-t=ⁱⁱ ____ =a xsoo
 Clarence =CN AX=3.I sell-3.II=INT =CN canoe
 'Did Clarence sell a canoe?' A-extraction

Predicate placement also occurs in adjunct focus configurations when the main predicate is monovalent, as in (51).

- (51) *Gits'iipda dawldiⁱⁱ Dzeen?*
 gits'iip=da =a dawł-t=ⁱⁱ =t Dzeen
 yesterday=PST =CN leave-3.II=INT =PN Jane
 'Did Jane leave yesterday?' Adjunct-extraction

We also observe predicate placement when one of the two core arguments is realized by a first- or second-person agreement marker rather than a full DP. When only a transitive object is realized as a full DP, =*ii* appears sandwiched between the predicate and the object (52a), and when only a transitive subject is realized as a full DP, =*ii* appears between the predicate and the transitive subject (52b).¹⁵

¹⁵When third-person arguments are realized as agreement without a full DP, final-placement occurs; we discuss these cases in §6.

- (52) a. Pred=**ii** DP_O
*Magan**ii** hoon?*
 mak-ə-n=**ii** =a hoon
 catch-TR-2SG.II=INT =CN fish
 ‘Did you catch the fish?’
- b. Pred=**ii** DP_A
*Naht huutgi’nu**wii** doktaa?*
 nah=t huutk-’nu=**ii** =a doktaa
 PFV=3.I call-1SG.III=INT =CN doctor
 ‘Did the doctor call me?’

We now turn to predicate placement with the *wh*-particle *=(d)u*. When all core arguments (S, O, and A) are spelled out as full DPs, predicate placement occurs in three cases: (i) an adjunct question with a monovalent predicate (53), (ii) a transitive subject question (54), and (iii) an object question (55). In these examples, *=(d)u* linearizes to the left of the S-argument, the O-argument, and the A-argument, respectively.

- (53) *Dzindal dm ’ap yaltgidut Norman?*
 dzindaa =l dm ’ap yaltk-t=**(d)u** =t Norman
 IRR.when =IRR.CN PROSP VER return-3.II=INT =PN Norman
 ‘When is Norman really coming back?’ (Sasama, 2001, 64) Adjunct extraction

- (54) *Naal int gapdu ts’ik’aaws?*
 naa =l in=t gap-t=**(d)u** =a ts’ik’aaws
 who =IRR.CN AX=3.I eat-3.II=INT =CN split.salmon
 ‘Who ate the split salmon?’ A-extraction

- (55) *Goł gabidu gyet?*
 goo =l gap-ə-t=**(d)u** =a gyet
 what =IRR.CN eat-TR-3.II=INT =CN person
 ‘What do the people eat?’ O-extraction

As we saw with polar *=ii* above, when one of the two post-verbal core arguments is first- or second-person and not realized as a full DP, *=(d)u* still linearizes to the left of the remaining full DP, appearing encliticized to the predicate.¹⁶

¹⁶The predicates *ky’ilam* and *giin* both correspond to the English verb ‘give’ (with the latter being restricted to giving food), but they differ in terms of their argument structure. For *ky’ilam*, the theme argument is grammatically realized as an (absolutive) direct object and the recipient is realized as a prepositional/oblique argument. For *giin*, this is reversed: the recipient is realized as the direct object and the theme is realized as an oblique. Examples (56) and (57) both feature extraction of an oblique argument.

- (56) WH Pred=(**d**)u DP_O
Naal nam wil ky'ilamdu 'wäh?
 naa =l nah=m wil ky'ilam-t=(**d**)u =a 'wäh
 who =IRR.CN PFV=2SG.I SUB give-3.II=INT =CN oolichan
 'Who did you give oolichans to?'¹⁷

- (57) WH Pred=(**d**)u DP_A
Goł naht giindut Meeli
 goo =l nah=t giin-n=(**d**)u =t Meeli
 what =IRR.CN PFV=3.I food.give-2SG.II=INT =PN Mary
 'What did Mary give you?'¹⁸

Predicate placement is schematized in (58).

- (58) *Predicate placement*
 a. [(FOC) Pred=**ii** DP_{A/S/O}] PolQ
 b. [WH Pred=(**d**)u DP_{A/S/O}] WhQ

Argument and predicate placement therefore fall under the same generalization: interrogative clitics are always placed immediately before the last DP in the sentence.

4.3 Focus placement

Unlike argument and predicate placement, focus placement does not appear to obey the generalization that interrogative clitics are placed immediately to the left of the rightmost DP in the clause. We argue, however, that this difference is only superficial.

Focus placement with the polar question clitic =*ii* is illustrated below. Example (59) shows a focused S-argument, (60) a focused O-argument, (61) a focused A-argument, and (62) a focused adjunct, all in polar questions.

- (59) *Dzeeni**ii** ksi dawlit?*
 Dzeen=**ii** =l ksi dawł-ət ____
 Jane=INT =IRR.CN out leave-SX
 'Did *Jane* leave?' S-extraction
- (60) *Xsooy**ii** wa'atis Clarence?*
 xsoo=**ii** =a wa'at-ə =s Clarence ____
 canoe=INT =CN sell-TR[-3.II] =PN Clarence
 'Was it a canoe that Clarence sold?' O-extraction

¹⁷Oolichans, also known as eulachons, candlefish, or saviour fish are small oily fish that may be smoked, sun-dried or rendered into "grease" (Simmons, 2022).

¹⁸The illicit *n+n* sequence at the morpheme boundary undergoes degimination, rather than being repaired by epenthesis.

- (61) *Clarensii int waat'a xsoo?*
 Clarence=**ii** =a in=t wa'at-t ____ =a xsoo
 Clarence=INT =CN AX=3.I sell-3.II =CN canoe
 'Was it Clarence who sold a canoe?' A-extraction

- (62) *Dzigits'iibiil dm dawls Dzeen?*
 dzigits'iip=**ii** =l dm dawł =s Dzeen
 tomorrow=INT =IRR.CN PROSP leave[-3.II] =PN Jane
 'Is Jane leaving tomorrow?' Adjunct-extraction

Note that (60) and (61) form minimal pairs with (49) and (50), respectively. Both clitic placements are equally acceptable in these cases.

Focus placement is also possible with the *wh*-clitic =(d)u, and often occurs in free variation with either argument placement or predicate placement. The examples below show focus placement with an intransitive subject, object, transitive subject, and adjunct *wh*-phrase:

- (63) *Naayu sis'aaxsit?*
 naa=(d)u =a sis'aaxs-ət ____
 who=INT =CN laugh-SX
 'Who laughed?' S-extraction

- (64) *Goyu gaba gyet?*
 goo=(d)u =a gap-ə =a gyet ____
 what=INT =CN eat-TR-3.II =CN person
 'What do the people eat?' O-extraction

- (65) *Naayu int gaba ts'ik'aaws?*
 naa=(d)u =a in=t gap ____ =a ts'ik'aaws
 who=INT =CN AX=3.I eat =CN split.salmon
 'Who eats split dried salmon?' A-extraction

- (66) *Ndeyu wil sa oksga lgwoomlk?*
 nde=(d)u =a wil sa oks-k =a lgwoomlk ____
 where=INT =CN COMP off fall-PASS =CN child
 'Where did the child fall?' Adjunct-extraction

Focus placement is schematized below.

- (67) *Focus placement*
- | | | |
|----|--------------------------------|------|
| a. | [FOC= ii ...] | PolQ |
| b. | [WH=(d) u ...] | WhQ |

To maintain the generalization that Int morphologically procliticizes to the right-most DP, we propose that focus placement arises when Int linearizes to the left of a DP *in the form of a headless relative clause*. As discussed in Section 2, this configuration is derived under indirect movement, one of two pathways to *wh*-question formation and focus fronting. Direct movement (schematized in (68), repeated from example (12)) involves movement of a *wh*-word or focused element to clause-initial position, whereas indirect movement (schematized in (69), repeated from example (13)) involves a predicative *wh*-word or nominal selecting a headless relative clause complement, optionally marked by the relative pronoun *gu*.

- (68) Direct movement:
- $$[_{CP} \text{ } wh/foc \text{ } C [_{TP} \text{ } \dots \text{ } \text{ } \text{ } \dots]]$$
-
- (69) Indirect movement:
- $$[_{PredP} \text{ } wh/foc [_{DP} \text{ } pro [_{CP} \text{ } (gu) \text{ } C [_{TP} \text{ } \dots \text{ } \text{ } \text{ } \dots]]]]$$
-

Support for the hypothesis that focus placement involves indirect movement comes from the distribution of *gu*. All focus constructions and *wh*-questions with focus placement optionally allow *gu*, whereas *gu* is excluded when the interrogative clitic exhibits argument or predicate placement. The examples in (70) illustrate this pattern for polar questions containing *gu*. Examples (70a) and (70b) show that in the absence of *gu*, focus placement alternates with predicate placement, reflecting an ambiguity between indirect and direct movement. In contrast, when *gu* is present—unambiguously signalling the indirect movement strategy—only focus placement is possible, as shown in (70c) and (70d).

- (70) a. *At Meeli**ii** dm liilgis Lisa?*
 at Meeli=**ii** =a dm liilk-ə =s Lisa ____
 Q Mary=INT =CN PROSP look.after-TR[-3.II] =PN Lisa
 ‘Is it Mary that Lisa will look after?’
- b. *At Meeli dm liilgidi**it** Lisa?*
 at Meeli =a dm liilk-ə-t=**ii** =t Lisa ____
 Q Mary =CN PROSP look.after-TR-3.II=INT =PN Lisa
 ‘Is it Mary that Lisa will look after?’
- c. *At Meeli**ii gu** dm liilgis Lisa?*
 at Meeli=**ii gu** dm liilk-ə =s Lisa ____
 Q Mary=INT REL PROSP look.after-TR[-3.II] =PN Lisa
 ‘Is it Mary that Lisa will look after?’

- d. **At Meeli gu dm liilgidiit Lisa?*
 ał Meeli **gu** dm liilk-ə-t=**ii** =t Lisa ____
 Q Mary REL PROSP look.after-TR-3.II=INT =PN Lisa
 Intended: ‘Is it Mary that Lisa will look after?’

The *wh*-questions in (71) show that the same generalization holds for the *wh*-clitic $= (d)u$. Without *gu*, $= (d)u$ can either attach to the *wh*-phrase (71a) or in penultimate position (71b), again reflecting ambiguity between direct and indirect movement; however, with overt *gu* only indirect movement is possible, and therefore $= (d)u$ must attach to the *wh*-phrase (71c). Attempts to attach $= (d)u$ to the predicate in penultimate position are ungrammatical, as shown in (71d).

- (71) a. *Godu yoyksis Meeli?*
 goo=**(d)u** =a yoyks-ə =s Meeli
 what=INT =CN wash-TR[-3.II] =PN Mary
 ‘What did Mary wash?’
 b. *Got yoyksidut Meeli?*
 goo =ł yoyks-ə-t=**(d)u** =t Meeli
 what =IRR.CN wash-TR-3.II=INT =PN Mary
 ‘What did Mary wash?’
 c. *Godu gu yoyksis Meeli?*
 goo=**(d)u** =a **gu** yoyks-ə =s Meeli
 what=INT =CN REL wash-TR[-3.II] =PN Mary
 ‘What did Mary wash?’
 d. **Got gu yoyksidut Meeli*
 goo =ł **gu** yoyks-ə-t=**(d)u** =t Meeli
 what =IRR.CN REL wash-TR-3.II=INT =PN Mary
 Intended: ‘What did Mary wash?’

Though the examples in (70) and (71) show O-extraction configurations, the generalization that the presence of *gu* forces focus-placement is also observed in A-argument extraction, as evidenced by the *wh*-questions below:

- (72) a. *Naadu gu int yoyksa nool?*
 naa=**(d)u** =a **gu** in=t yoyks[-t] =a nool
 who=INT =CN REL AX=3.I wash[-3.II] =CN dish
 ‘Who washed the dishes?’
 b. **Naat gu int yoyksdu nool?*
 naa =ł **gu** in=t yoyks-t=**(d)u** =a nool
 who =IRR.CN REL AX=3.I wash-3.II=INT =CN dish
 Intended: ‘Who washed the dishes?’

Having established that focus placement always involves a headless relative clause to the right of the interrogative clitic, we can now assimilate this pattern to argument

and predicate placement, *since the relative clause is the last DP in the sentence*. Note that crucially, the internal structure of the relative clause must be opaque to clitic placement under this account: we assume that DP constitutes a Spell-out domain (a *phase*, Chomsky 2000, 2001), and therefore that its internal structure is inaccessible to clitic linearization in a higher phase (the matrix CP).

We schematize focus-placement below.

- (73) Focus placement: rightmost DP (typically HRC) is preceded by predicative *wh*- or focus phrase

$$[\text{Pred}_{wh/foc} =\mathbf{Int} \text{ DP}_{S/HRC}]$$

The schema in (73) also covers copular questions with simple DP arguments, such as the following:

- (74) *Naadut Dzon?*

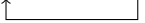
$$\begin{array}{ll} \text{naa}=(\mathbf{d})\mathbf{u} & [\text{DP} =\mathbf{t} \quad \text{Dzon}] \\ \text{who}=\mathbf{INT} & =\mathbf{PN} \quad \text{John} \\ \text{'Who is John?'} \end{array}$$

4.4 Interim conclusion

So far, we have established the following generalizations with respect to the interrogative clitics *=ii* and *=(d)u* in Sm'algyax:

- (a) The syntactic position of the interrogative clitics is high in a root clause (taking CP as its complement).
- (b) Phonologically, the interrogative clitics are enclitic: they are phonologically integrated with a phrase to their left.
- (c) Their linear position falls into four distributional patterns. We have termed the first three argument placement, predicate placement, and focus placement (this section), which are summarized below in (75).

- (75) a. Argument placement: rightmost DP is preceded by another DP

$$[\text{YP} \dots \text{DP}_A =\mathbf{Int} \text{ DP}_O \text{ Int}]$$

- b. Predicate placement: rightmost DP is preceded by predicate

$$[\text{YP} \dots \text{Pred} =\mathbf{Int} \text{ DP}_{A/S/O} \text{ Int}]$$

- c. Focus placement: rightmost DP (typically HRC) is preceded by predicative *wh*- or focus phrase

$$[\text{YP} \dots \text{Pred}_{wh/foc} =\mathbf{Int} \text{ DP}_{S/HRC} \text{ Int}]$$


All three placements reduce to the single generalization that interrogative clitics occupy second last position in the matrix clause, preceding the final DP.

Recall that in §§3–3.3 we argued that in all four Tsimshianic languages Int is base-generated in a right-peripheral syntactic position, and that it is phonologically enclitic. A linearization approach that is only sensitive to syntax and phonology would predict that, in Sm’algax, these clitics occur in final position as in the other three members of the family, rather than the penultimate position described here.

Furthermore, no attempt to derive the surface positions of Int from its base position via syntactic movement is viable: such an operation would have to involve movement out of, or lowering into, syntactic islands—for example, the coordinate structures from §3.2, repeated below.

- (76) *At kwdiinii ada su’naalan?*
 ał kwdii-n=**ii** ada su’naal-n
 Q hungry-2SG.II=INT and tired-2SG.II
 ‘Are you hungry and (are you) tired?’

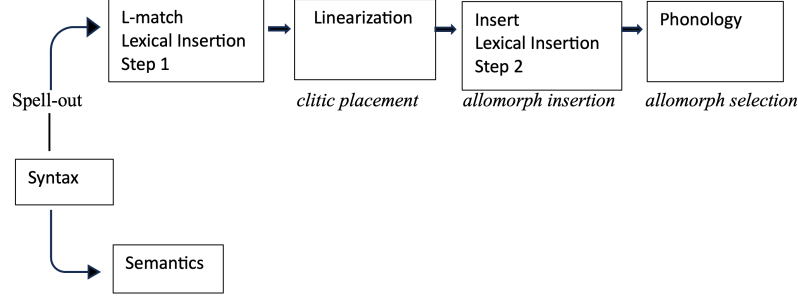
- (77) Context: You’re talking to a friend who returned from a baking exchange:
Goyu nah gabn ada naal nah int dzapt?
 [goo=(**d**)u nah gap-i-n _____] [ada naa =ł nah in=t
 what=INT PFV eat-TR-2SG.II and who =IRR.CN PFV AX=3.I
 dzap-t _____]
 make-3.II
 ‘What did you eat and who made it?’

We conclude that the linear positions of Int cannot be derived solely by the syntax, the phonology, or a combination of the two. We instead argue that the core placements of Int fall out from the generalization that Int exhibits *a mismatch between its phonological and morphological host*: morphologically, Int must have a DP to its *right*, and phonologically, it must encliticize to some XP to its *left*. In the following section, we develop an analysis that accounts for this generalization.

5 Analysis: clitic linearization in the morphology

This section develops an analysis of penultimate clitic placement as a morphological process. The first thing we need to do is to come up with a grammatical architecture which allows clitics to be linearized at Spell-out in a post-syntactic, pre-phonological module. Accordingly, we adopt a two-step model of lexical insertion from [Bye and Svenonius \(2012\)](#). Under this view, the first stage, termed L(exical)-match, operates at the output of the syntax and inserts morphosyntactic feature bundles under terminal nodes; at the second stage, termed Insert, phonological content is added. The architecture we assume is given in (78) (from [Davis to appear](#)).

(78) The architecture of Spell-out



Next, we assume (following [Huijsmans 2023](#); [Davis and Huijsmans 2024](#); [Davis to appear](#)) that clitics are lexically equipped with morphological *linearization features* which specify their direction of attachment: [enclitic] for leftward attachment, [proclitic] for rightward attachment.¹⁹ In order to distinguish phonological from morphological cliticization, we retain the standard equals sign (=) for the former, and employ arrows for the latter, as in [Davis \(to appear\)](#).

(79) Linearization features

Enclitic $\Leftarrow$
Proclitic $\Rightarrow$

Two further pieces of information are required to complete the morphological specification of a clitic.²⁰ First, clitics must be specified as to whether they attach to the head or the edge of a phrase (see [Klavans 1985, 1995](#)). Additionally, there may be categorial restrictions on the host. For Sm’algyax interrogative clitics, attachment is phrasal and restricted to D: therefore, they are always positioned at the right edge of DP.

Second, there may be restrictions on the domain in which the clitic is realized. Here we assume that the relevant domain is the phase, and more generally, that a Spell-out domain corresponds to a phase. For present purposes, both CP and DP count as phases and *v*P does not, since *v*P-internal constituents (in particular, the object DP) can be targeted.

Given these assumptions, the featural specification of an interrogative clitic in Sm’algyax can be represented roughly as in (80). Taken together, Int attaches to the left of DP within the CP domain. We take IntP to be part of the extended projection of CP, that is restricted to root clauses.

(80) The featural specification of Sm’algyax Int:
 $\{ \Rightarrow, \text{DP}, \text{CP} \}$

¹⁹Tsimshianic languages are also notable for having clitics that may attach either leftward or rightward, termed “flexiclitics” ([Mulder & Sellers, 2010](#); [Forbes, 2023](#)).

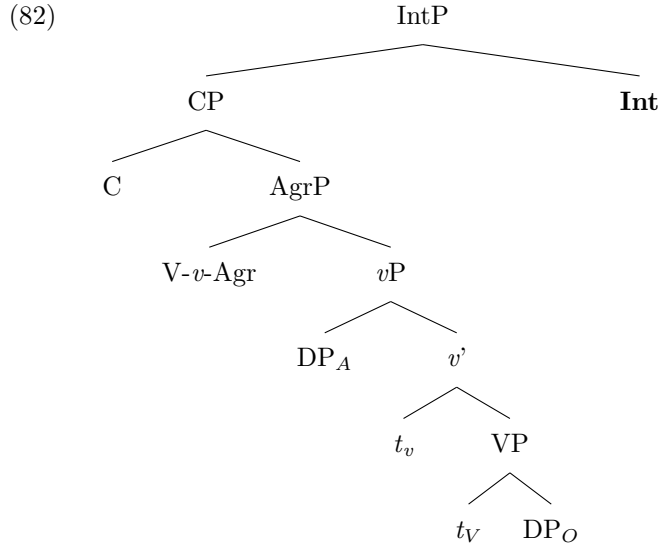
²⁰The approach adopted here is inspired by the pioneering model of clitic placement developed by [Klavans \(1985, 1995\)](#), in which clitic placement is determined by three independent parameters governing the position of the clitic within its domain, its orientation relative to its host, and its proclitic or enclitic status. Our implementation follows the feature-based formalization of [Huijsmans \(2023\)](#); [Davis and Huijsmans \(2024\)](#); [Davis \(to appear\)](#).

These features are activated after insertion at L-match, and therefore they participate in the linearization operation that takes place between Steps 1 and 2 of lexical insertion, as illustrated in (78). More generally, we assume that the linear order of constituents is partially determined in the syntax via a general linearization algorithm which converts asymmetric c-command to precedence. However, since not all constituents stand in asymmetric c-command relations, constraints in the linearization component must determine precedence relations between sisters, contrary to approaches such as Kayne (1994).

For concreteness, we adopt the asterisk notation for ‘left adjacent to’ from Marantz (1988) and Embick and Noyer (2001), as used in Brown and Davis (2024b); Davis (to appear). This notation represents the default linear order derived via a bottom-up linearization algorithm.

We can now consider how Int is linearized, using the polar interrogative clitic =*ii* for the purpose of illustration (= (*d*)*u* linearization proceeds identically). The syntactic structure of a sentence such as (81) is given in (82).

- (81) *Di ts'ima'ans Sarayⁱⁱ ts'its'ii?*
 di ts'imaa-'n =s Sarah=ⁱⁱ =a ts'its'ii
 FOC sweet-CAUS[-3.II] =PN Sarah=INT =CN marrow
 ‘Does Sarah like marrow?’ (Sasama, 2001, 84)



Following L-match, default linearization creates the string in (83a). However, the linearization instructions encoded in the lexical entries of the clitics overrules default linearization, as in (83b).

- (83) a. $[_{CP} \ C * V * DP_A * DP_O * \mathbf{Int}_{\{\Rightarrow, DP, CP\}}]$
 b. $[_{CP} \ C * V * DP_A * \mathbf{Int} * DP_O]$

At Step two of the model, *Insert*, the phonological matrices associated with the two interrogative clitics are inserted, including the three allomorphs of the *wh*-clitic $= (d)u$. As these are phonological *enclitics* (as indicated by the equals sign), they will be integrated into the morphological word to their *left*, despite being morphologically associated with the DP to their *right*. We address allomorphy in §7.

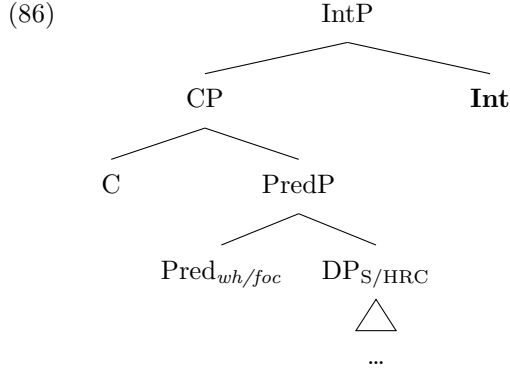
This system accounts for the insensitivity of interrogative clitic placement to oblique phrases, adjuncts, (PPs) and complement clauses (CPs), all of which follow core arguments. Example (84), repeated from (42), shows that in spite of the PP following the A-argument DP, $= (d)u$ is still placed to the left of the DP, in accordance with the linearization instructions encoded in its lexical entry in (80). This placement to the left of the final DP, skipping over an intervening PP/CP, is schematized in (85b).²¹

- (84) *Naal nah habooltidut Dzon asda gits'iipda?*
 naa=l nah habool-t-ə-t=**(d)**u =t Dzon [**asda gits'iipda**]
 who=IRR.CN PFV look.after-T-TR-3.II=Q =PN John PREP yesterday
 'Who did John look after yesterday?'

- (85) a. $[_{CP} \ WH * C * V * DP_A * PP/CP * \mathbf{Int}_{\{\Rightarrow, DP, CP\}}]$
 b. $[_{CP} \ WH * C * V * \mathbf{Int} * DP_A * PP/CP]$

In addition, focus placement follows directly from the linearization features in (80), given our analysis that these constructions involve a predicative *wh*-expression or nominal that selects a DP argument. In this configuration, the syntax generates the structure in (86), where the *wh*-predicate or nominal heads a PredP projection and selects a DP complement, typically realized as a headless relative clause.

²¹There is evidence that clausal “coordination” in Sm'algyax actually involves subordination, since the introductory element *ada* ‘and then’ induces dependent (subordinate) agreement morphology. See also Brown (2025) for similar observations on Gitksan. We further assume here that clauses introduced by *ada* are merged as adjuncts rather than as complements: as adjunct CPs, they will not be visible for $(d)u$ -placement, accounting for its penultimate position in the matrix clause in examples such as (31) above. Moreover, because *ada*-clauses are adjuncts, operations that would require movement out of, or lowering into, the second clause are independently excluded by the Adjunct Island Constraint, rather than by the Coordinate Structure Constraint.



Default linearization will again place *Int* at the right edge of the CP domain, yielding the order in (87a). However, the linearization features associated with *Int* require it to attach immediately to the left of a DP within the CP domain. As a result, the linearization feature places the clitic in the position immediately preceding the DP complement of the predicate, as shown in (87b).

- (87) a. $[_{CP} \text{ Pred}_{wh/foc} * \text{DP}_{S/HRC} * \mathbf{Int}_{\{\Rightarrow, DP, CP\}}]$
 b. $[_{CP} \text{ Pred}_{wh/foc} * \mathbf{Int} * \text{DP}_{S/HRC}]$

The result is precisely the surface pattern observed under focus placement: the interrogative clitic appears immediately to the right of the predicate and immediately to the left of the DP argument. Crucially, this placement follows from the same featural specification given in (80); no additional rules are required for focus or *wh*-predication structures.

More generally, the analysis predicts that interrogative clitics will consistently appear immediately to the left of the final DP within the CP phase, regardless of whether that DP is an A-/S- or O-argument of a verbal predicate, or the (complex) S-argument of a non-verbal predicate. Because the linearization features refer specifically to DPs, other constituents such as adjunct PPs or CPs do not affect clitic placement, accounting for the apparent “skipping” behaviour illustrated above. The model successfully accounts for all clitic positions discussed in §4, but only by adopting the independent morphological requirement that interrogative clitics must be placed immediately before the final DP in the root clause.

6 Final placement in Sm’algyax

This section examines the fourth pattern of interrogative clitic placement in Sm’algyax: cases in which the interrogative clitics appear in absolute clause-final position. We have postponed discussion of this pattern until now because it appears to contradict the core generalization that interrogative clitics always appear in penultimate position in Sm’algyax.

We argue that final placement takes place under two distinct conditions. The first is when the clitic precedes a phonologically null third person argument (*pro*), which

acts as its morphological host. This case then falls under the second-last position generalization. The other is when there is no viable morphological host for the clitic: we argue that in this case final position placement occurs as a last resort.

6.1 *pro* as a morphological host

In Tsimshianic languages, overt DPs may be replaced by empty pronominals (*pro*) when licensed by agreement morphology. We argue that *pro* can serve as a morphological host for interrogative clitics, giving rise to the appearance of clause-final placement. We propose that these examples nevertheless conform to the generalization that Int linearizes immediately to the left of a sentence-final DP argument; the only difference is that the relevant argument is phonologically null (*pro*).

Apparent clause-final placement is observed either when the sole argument of a mono-argumental predicate or both arguments of a bi-argumental predicate are not phonologically realized. These cases are shown in (88) and (89), respectively, with the polar-interrogative clitic *=ii*.

- (88) Null third-person S-argument; final *=ii*
Aamii?
 aam=**ii**
 good-3.II=INT
 ‘Is she/he/it okay?’ (Sasama, 2001, 84)

- (89) Null third-person A- and O-arguments; final *=ii*
Nah niidzidi?
 nah niits-ə-t=**ii**
 PFV see-TR-3.II=INT
 ‘Did s/he see her/him?’

We observe the same apparent final positioning with the *wh*-interrogative clitic. However, when there is no overt following DP, the *wh*-interrogative clitic surfaces not as *=(d)u* but as a distinct allomorph, *=(d)a*, with variants *=ya* and *=da* parallel to the *=yu* and *=du* variants of *=(d)u*, described earlier in §3.2.

Example (90) shows that when the S-argument of a monovalent predicate in a *wh*-question is phonologically null, final placement of *=(d)a* occurs. Example (91) shows that the same pattern occurs when both arguments of a bivalent predicate are null.

- (90) Null third-person S-argument; final *=(d)a*
Ndel wil hadiksda?
 nde =l wil hadiks-t=**(d)a**
 where =IRR.CN COMP swim-3.II=INT
 ‘Where did s/he swim?’

- (91) Null third-person A- and O-arguments; final $= (d)a$
Ndel wilt gapda?
nde =l wil=t gap-t=**(d)a**
where =IRR.CN COMP=3.I eat-3.II=INT
‘Where did s/he eat it?’

Likewise, in *wh*-question configurations with transitive predicates, if an A-argument is extracted, final $= (d)a$ is possible if there is a null third-person O-argument, as shown in (92a). The inverse is also true: if an O-argument is extracted, final $= (d)a$ occurs if there is a null third-person A-argument, as shown in (92b).²²

- (92) a. O-argument question with null third-person A-argument; final $= (d)a$
Naal di limooyda?
naa =l di limoo-i-t=**(d)a**
who =CN FOC help-TR-3.II=INT
‘Who did she/he help?’
- b. A-argument question with null third-person O-argument; final $= (d)a$
Naal int gabida?
naa =l in=t gap-t=**(d)a**
who=INT =CN AX=3.I eat-3.II=INT
‘Who ate it?’

Interestingly, morphological clitic placement is not only sensitive to phonologically empty elements, but distinguishes between different types of empty category. In particular, while *pro* is visible for clitic placement, $\bar{A}$ -traces/deleted copies are not. This is shown by cases of S-extraction, as in (93) where the only grammatical option involves focus placement.

- (93) S-argument *wh*-question: only focus placement possible
- a. *Naayu ksi dawlit?*
naa=**(d)u** =a ksi= dawl-ət
who=INT =CN out= leave-SX
‘Who left?’

²²Focus placement is always possible as an optional alternative to final placement, as shown in (i).

- (i) a. *Naadu di limooyt?*
naa=**(d)u** =a di limoo-i-t _____
who=INT =CN FOC help-TR-3.II
‘Who did she/he help?’
- b. *Naayu int gapt?*
naa=**(d)u** =a in=t gap-t _____
who=INT =CN AX=3.I eat-3.II
‘Who ate it?’

- b. **Naat ksi dawlida?*
 naa =l ksi= dawl-ət=(d)a
 who =IRR.CN out= leave-SX=INT
 Intended: ‘Who left?’

Similarly, copular questions, which consist of a predicative *wh*-word selecting a nominal complement, do not allow final placement, since they do not contain *pro*; therefore only focus placement is possible:

- (94) Copular *wh*-question: only focus placement possible
 a. *Naayut Dzon?*
 naa=(d)u =t Dzon
 who=INT =PN John
 ‘Who is John?’
 b. **Naat Dzon(d)a?*
 naa =t Dzon=(d)a
 who =PN John=INT
 Intended: ‘Who is John?’

The examples in (93) and (94) strongly suggest that final placement for the *wh*-clitic is contingent on the presence of *pro* in an argument position.

The morphological linearization of Int in a question like (90) above is given below in (95). The output from the syntax generates the linearized string in (95a) where the null third-person S argument *pro*_S is visible to the morphology. In (95b), Int relinearizes to the left of *pro*_S, before phonologically encliticizing to the predicate.

- (95) a. [CP WH * C * V * *pro*_S * Int_{⇒, DP, CP}]
 b. [CP WH * C * V * Int * *pro*_S]

Crucially, $\bar{A}$ -traces are not viable hosts for morphological cliticization, which rules out final placement in S-argument questions such as (93).²³ The output from the syntax is schematized for S-argument questions in (96).

- (96) [CP WH * C * V * Int_{⇒, DP, CP}]

In (96) there is no DP host, overt or null, for Int to morphologically procliticize to. In such configurations, the only available option is the indirect movement strategy, which yields focus placement. We therefore conclude that null (third-person) DP arguments (i.e., *pro*) constitute viable morphological hosts for cliticization; when no such host is available, focus placement is forced. The configurations discussed in this section thus follow from the analysis presented in §5.

²³The invisibility of $\bar{A}$ -traces for linearization purposes is surprising, because many “copy-and-delete” versions of $\bar{A}$ -movement assume that the deletion of a copied phrase is a PF operation, in which case the copy should still be present at spellout. The evidence presented here that movement copies do not count for clitic placement indicates either both copy and delete must take place in the syntax prior to spellout, or alternatively that copies are invisible to the morphology in ways yet to be specified.

We further predict that if *pro* able to act as a morphological host, interrogative clitics should be able to appear on bare *wh*-words or focused phrases in configurations where their DP/HRC complement has been realized as *pro*. This prediction is borne out. As long as there is a suitable context or discourse antecedent, both $=\langle d \rangle a$ and $=ii$ may appear directly on a *wh*-word or focused phrase, as shown in (97) and schematized in (98).

- (97) [You show me a photo but I can't make out who it is]
- a. *Naada?* / *Naaya?*
 $naa=(d)a/(*)=(d)u$
 $who=INT$
 'Who (is it)?'
 - b. *'Nüüyuwii?*
 $'nüüyu=ii$
 $1SG.III=INT$
 'Is it me?'

- (98) a. $[_{CP} \text{ Pred}_{wh/foc} * pro_{S/HRC} * \mathbf{Int}_{\{\Rightarrow, DP, CP\}}]$
 b. $[_{CP} \text{ Pred}_{wh/foc} * \mathbf{Int} * pro_{S/HRC}]$

The generalization that *pro* can host a clitic provides additional strong evidence against a purely phonological account of clitic placement, since there is no phonological material for the clitic to attach to. Clitic linearization must therefore occur in the morphological component of spellout, and clitic placement must be sensitive to some types of null DPs (*pro*) but not others (the traces/copies of $\bar{A}$ -movement).

6.2 The ordering of null and overt DPs

Building on the proposal that null third-person DPs (*pro*) serve as morphological hosts for *Int*, we now consider more complex configurations in which null and overt DPs co-occur. As predicted under the analysis developed thus far, clause-final placement remains possible whenever a *pro* is present in the structure.

However, these configurations also reveal an important asymmetry between morphological host selection and phonological encliticization. In particular, clause-final placement is attested even when an overt DP argument is present, provided that the other argument is *pro*. In such configurations, the interrogative clitic encliticizes to the overt DP, rather than the predicate. This is illustrated in (99) for the polar interrogative clitic $=ii$ and in (100) for the clause-final allomorph $=\langle d \rangle a$ of the *wh*-interrogative clitic.²⁴

²⁴One example in Dunn (1979a, 71) shows a different pattern, featuring one overt DP, one null DP, and *Int* in penultimate position, contra the final-position cases discussed here:

- (i) *Nat ts'alaawdiił 'yuuta?*
 $nah=t \quad ts'alaaw-t=ii \quad =l \quad 'yuuta$
 $PFV=3.I \quad visit-3.II=INT \quad =IRR.CN \quad man$
 'Did the man visit them?' (Dunn, 1979a, 71)

- (99) Pred DP_A=**ii** pro_O
- a. *Nah limooml doktaayii?*
 nah limoom =l doktaa=**ii**
 PFV help[-3.II] =IRR.CN doctor=INT
 ‘Did the doctor help her/him?’
- b. **Nah limoomdiil doktaa?*
 nah limoom-t=**ii** =l doktaa
 PFV help=3.II=INT =IRR.CN doctor
 Intended: ‘Did the doctor help her/him?’
- (100) Pred DP_A=(**d**)a pro_O
- a. *Ndel wilt niisdit Meelida?*
 nde =l wil=t niis-t =t Meeli=(**d**)a
 where =IRR.CN COMP=3.I see-3.II =PN Mary=INT
 ‘Where did Mary see him?’
- b. **Ndel wilt niisdut Meeli?*
 nde =l wil=t niis-t=(**d**)u =t Meeli
 where =IRR.CN COMP=3.I see-3.II=INT =PN Mary
 Intended: ‘Where did Mary see him?’

In both (99) and (100) the interrogative clitic has linearized to the left of the null O-argument and phonologically encliticized to the overt A-argument. Perhaps unexpectedly, given the language’s normally rigid VSO order, the same final-position pattern also appears in configurations in which the A-argument is null and the O-argument is overt, as we see in (101) and (102).

- (101) Pred pro_A DP_O=**ii**
- a. *Nah yoyksadil ts’ikts’igii?*
 nah yoyks-ə-t =l ts’ikts’ik=**ii**
 PFV clean-TR-3.II =IRR.CN car=INT
 ‘Did s/he clean the car?’
- b. **Nah yoyksadiil ts’ikts’ik?*
 nah yoyks-ə-t=**ii** =l ts’ikts’ik
 PFV clean-3.II=INT =IRR.CN car
 Intended: ‘Did s/he clean the car?’

This placement would follow from the analysis in §5 if null DPs did not count for Int linearization. However, we have not been able to replicate this configuration with our consultants, who instead consistently produce the final-position structures in (99) and (100). Additionally, the example in (99) exhibits an atypical person-marking configuration: Series I ergative clitics such as =t typically occur either in dependent clauses or in independent clauses with marked person configurations involving a first- or second-person S- or O-argument (Sasama, 2001; M.S. Anderson & Ignace, 2008b; Forbes, 2018). Since (99) is neither subordinate nor associated with a dependent-clause trigger, and its O-argument is third person, it is unclear what licenses Series I marking in this example. We therefore set it aside.

- (102) Pred pro_A $DP_O = (d)a$
- a. *Ndel wilt giikl bootda?*
nde =l wil=t giik =l boot=(d)a
where =IRR.CN COMP=3.I buy[-3.II] =IRR.CN boat=INT
‘Where did he buy the boat?’
- b. **Ndel wilt giikdu boot?*
nde =l wil=t giik-t=(d)u =a boot
where =IRR.CN COMP=3.I buy-3.II=INT =CN boat
Intended: ‘Where did he buy the boat?’

These patterns can be accounted for if null third-person DPs participate in post-syntactic linearization, but are always ordered to the *right* of overt DPs at spell-out. We formalize this requirement as in (103).²⁵

- (103) Postsyntactic ordering: overt DP * pro

This ordering requirement in (103), together with the already established requirements that (i) Int morphologically linearizes relative to the rightmost DP in its domain and that (ii) Int is phonologically enclitic and requires an overt phonological host, derive the otherwise unexpected final-position patterns. Consider (101), schematized below, in which the A-argument is null and the O-argument is overt.

- (104) a. Morphological input: $[_{CP} \dots V * DP_O * pro_A * \mathbf{Int}_{\{\Rightarrow, DP, CP\}}]$
b. Morphological linearization: $[_{CP} \dots V * DP_O * \mathbf{Int} * pro_A]$
c. Phonological encliticization: $DP_O = \mathbf{Int} pro_A$

Because pro_A is the rightmost DP in the morphological representation (via (103)), Int linearizes immediately to its left in (104b). The same derivation extends to configurations with overt A-arguments and null O-arguments, as in (99) and (100). In all such cases, Int linearizes to the left of final-position pro , and phonologically encliticizes to the overt argument.

In sum, these configurations provide further support for the conclusion reached in the previous subsection: null third-person DPs actively participate in morphological linearization. At the same time, they provide independent evidence that morphological host selection and phonological encliticization are distinct processes. A null DP may serve as a morphological host for Int while failing to provide a phonological host for encliticization.

6.3 First- and second-person arguments are pronouns

All of the cases discussed so far in this section involve a null third-person DP (pro) associated with agreement morphology. Under the analysis developed above, these

²⁵The requirement that overt DPs linearize to the left of pro follows from Davis’s (2018) analysis of the morphological conditioning of the proper noun connective $=s$. Specifically, the default proper noun connective $=t$ is realized as $=s$ when the DP is immediately adjacent to a coindexed third-person Series II suffix. We suggest that this ordering requirement does not reflect an inherent property of null arguments, but rather follows from a broader morphological requirement for adjacency between overt DPs and the predicate.

null DPs act as morphological hosts for Int, making final placement possible. This analysis makes a clear prediction: if final placement depends on the presence of a null DP acting as a morphological host, then it should be unavailable in configurations where no such null DP is present.

Interestingly, configurations involving first or second person arguments do *not* allow final placement. When the relevant argument is first- or second-person—realized as preverbal (Series I) or verbal (Series II) morphology—only focus placement is possible, as shown in (105a) and (106a), and final placement is systematically excluded, as in (105b) and (106b).²⁶

(105) O-argument question with 1st/2nd-person A-argument; **no** final $=(d)a$

- a. *Goyu* 'nax'nuuyn?
 goo=(d)u =a 'nax'nuu-i-n
 what=INT =CN hear-TR-2SG.II
 'What did you hear?'
 b. **Gol* 'nax'nuuyn(d)a?
 goo =l 'nax'nuu-i-n=(d)a
 what =IRR.CN hear-TR-2SG.II=INT
 Intended: 'What did you hear?'

(106) A-argument question with 1st/2nd-person O-argument; **no** final $=(d)a$

- a. *Naayu int* 'nax'nuun?
 naa=(d)u =a in=t 'nax'nuu-n
 who=INT =CN AX=3.I hear-2SG.II
 'Who heard you?'
 b. **Naal int* 'nax'nuun(d)a?
 naa =l in=t 'nax'nuu-n=(d)a
 who =IRR.CN AX=3.I hear-2SG.II=INT
 Intended: 'Who heard you?'

By hypothesis, it follows that first- and second-person arguments do not involve *pro* at all. We therefore propose that, unlike third-person agreement, first- and second-person morphology realizes pronominal arguments directly. On this view, there is no null DP present in the morphology that could serve as a host for Int.

The output for configurations involving only first- or second-person arguments is schematized in (107).

²⁶This restriction is not (morpho-)phonological. For instance, the *wh*-interrogative clitic $=(d)u$ may encliticize to a second-person Series II suffix provided that there is another viable morphological host for it to precede, as shown below:

- (i) *Gol naht giindut Meeli*
 goo =l nah=t giin-n=(d)u =t Meeli
 what =IRR.CN PFV=3.I food.give-2SG.II=INT =PN Mary
 'What did Mary give you?'

(107) [CP WH * C * {1/2.I}V-1/2.II * Int_{⇒, DP, CP}]

In (107) there is no DP host, overt or null, for Int to morphologically procliticize to, and focus placement is therefore required to salvage the derivation. The distribution of interrogative clitics thus follows from the availability of a DP host in the morphology: when a third-person DP is present, including a null *pro*, final placement is possible; when no such DP is available, focus placement is forced. Independent support for the lack of *pro* with first or second person agreement comes from the fact that it can never be doubled by an overt independent (Series III) pronoun. As pointed out by Belvin (1985) and Jelinek (1986) for Nisga'a, this follows if first and second person agreement morphemes are actually themselves pronominal arguments (as opposed to third person agreement, which can be doubled by an overt DP and is non-argumental).

6.4 Final placement as a last-resort strategy

Finally, we turn to cases of true final positioning in Sm'algyax. These occur in configurations in which there is no overt or null DP to act as a host for Int. Since there will always be at least one DP present in *wh*-questions, the last resort strategy is confined to the polar-interrogative clitic =*ii*.

An especially informative case involves weather predicates. These predicates lack arguments altogether (M.S. Anderson & Ignace, 2008b) (for instance, unlike monoargumental predicates, they never bear agreement markers), however they may host a polar interrogative clitic, as shown in (108).

(108) *Waasii?*
 waas=**ii**
 rain=INT
 'Is it raining?'

Non-focused clauses with only first- or second-person arguments also show final placement of =*ii*, as in (109).²⁷

(109) a. *Nam dawłnii?*
 nah=m dawł-n=**ii**
 PFV=2SG.I leave-2SG.II=INT
 'Did you leave?'
 b. *Nam 'nax'nuuywii?*
 nah=m 'nax'nuu-u=**ii**
 PFV=2SG.I hear-1SG.II=INT
 'Did you hear me?'

The morphological representations for these two cases are given in (110).

²⁷This follows from the argument in the previous section that first- and second-person arguments do not license *pro*.

- (110) a. Single overt element: $[_{CP} \text{ Pred} * \mathbf{Int}_{\{\Rightarrow, DP, CP\}}]$
 b. 1/2-person arguments only: $[_{CP} \{1/2.I\}V-1/2.II * \mathbf{Int}_{\{\Rightarrow, DP, CP\}}]$

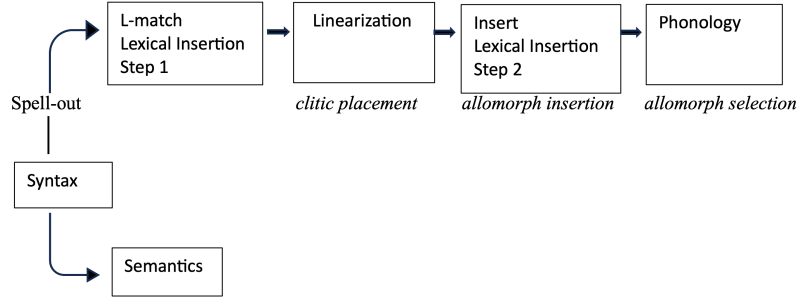
We therefore propose that final positioning as a last resort occurs when the linearization features of the clitic cannot be satisfied.

7 On allomorph selection

In this section we turn to the allomorphy of interrogative clitics. There are two types of alternation to consider. The first involves the alternation between vowel-initial ($=u \sim =a$) and stop-initial ($=du \sim =da$) forms; the second concerns the vowel alternation between [u] and [a] forms.

In the model of spell-out adopted here, and schematized in (78), repeated in (111) below, only morphosyntactic features are present during the linearization stage following L-match and preceding Insert. Consequently, allomorph selection must take place at Insert.

- (111) The architecture of Spell-out (repeated from (78))



We further assume that, just as the morphosyntax is phonology-blind, the morphophonology is syntax-blind (see Mellesmoen 2025 for a recent implementation). The input to Insert is therefore a linearized string in which clitics have already been positioned relative to their morphological hosts, but where no phonological information has yet been introduced.

We propose that allomorph selection proceeds in two stages. The first stage is morphologically conditioned and takes place at Insert itself. The second stage consists of regular phonological processes applying after vocabulary insertion, including glide insertion and consonant deletion.²⁸ The first stage determines whether the interrogative clitic is inserted with a d-initial allomorph or a vowel-initial allomorph. The d-initial allomorphs are realized as an elsewhere form, while the vowel-initial allomorphs are restricted to contexts immediately following a *wh*-phrase.

²⁸We treat the glide-initial and vowel-initial realizations of the polar interrogative clitic *=ii* not as products of Vocabulary Insertion, but rather as the output of regular phonological processes applying after insertion.

- (112) Morphologically conditioned allomorph insertion
- a. following a *wh*-phrase: {/u/, /du/, /a/, /da/}
 - b. elsewhere: {/du/, /da/}

Thus, when the interrogative clitic is linearly adjacent to a *wh*-phrase, Insert supplies both a vowel-initial and a d-initial candidate. In all other environments, only the d-initial allomorphs are available.

The second stage of allomorph selection concerns the vowel quality of the clitic. We propose that the alternation between high-vowel allomorphs (=u/=du) and low-vowel allomorphs (=a/=da) is conditioned by the presence of a following connective (CN). High-vowel allomorphs occur when the interrogative clitic is immediately adjacent to a connective, while low-vowel allomorphs appear elsewhere.

- (113) Contextual allomorphy conditioned by following CN
- a. before CN: {/u/, /du/}
 - b. elsewhere: {/a/, /da/}

After Insert, ordinary phonological processes apply. In particular, vowel-initial allomorphs following vowel-final *wh*-words undergo glide insertion, yielding the *yu* and *ya* forms. Additionally, d-initial allomorphs may undergo deletion when encliticized to a host ending in /t/, yielding apparent vowel-initial forms such as *u* and *a*.

- (114) Post-insertion phonological rules
- a. Glide insertion
 - /u/ → [yu] / V__
 - /a/ → [ya] / V__
 - b. /d/ deletion
 - /d/ → ∅ / t__

Under this analysis, forms traditionally described as =*u* and =*a* are not independent vocabulary items, but rather surface realizations of underlying =*du* and =*da* after consonant deletion. This accounts for the ambiguity observed with Series II third-person and suffix-final hosts, where surface forms such as *t=u* may reflect underlying /t=du/.

The derivation of representative forms is illustrated in (115).

- (115) a. [+*wh*] ____ [+CN]
 Insert: {/u/, /du/} → =*u* or =*du*
 Phonology: =*u* → =*yu* following vowel-final *wh*-words
- b. [−*wh*] ____ [+CN]
 Insert: {/du/} → =*du*
- c. [+*wh*] ____ [−CN]
 Insert: {/a/, /da/} → =*a* or =*da*
 Phonology: =*a* → =*ya* following vowel-final *wh*-words

- d. $[-wh] \text{ — } [-CN]$
 Insert: $\{/da/\} \rightarrow =da$

Crucially, this analysis derives the distribution of the various allomorphs without reference to syntactic structure, after linearization has taken place. Morphologically conditioned allomorphy is determined at Insert on the basis of adjacency relations in the linearized string, while subsequent phonological alternations apply over the resulting phonological representation.

8 Conclusion

This paper has argued for a model of the grammar in which lexical insertion takes places at two distinct points in the Spell-out component of the grammar. The first, termed L-match following [Bye and Svenonius \(2012\)](#), applies at the output of the syntax. Lexical features inserted at L-match are purely morphological: they operate phase by phase in tandem with a default algorithm to convert a hierarchical representation into a linearized string. This then serves as input to the second stage, Insert, where phonological representations (including allomorphs) are made available, and are then subject to the phonological grammar.

This model is particularly well-suited to handling clitics, which, as we have demonstrated, can show differing syntactic, morphological, and phonological behaviour. In particular, following the insights of [S.R. Anderson \(2005\)](#), and building on earlier work by [Klavans \(1985, 1995\)](#), we consider the placement of “special” clitics to be a matter of morphology, not syntax; but rather than treating morphology as part of an expanded phonological component, like Anderson, we treat it as part of an independent linearization component.²⁹

Our approach is empirically motivated by the grammar of interrogative clitics in the Tsimshianic language family. While interrogative clitics in Gitksan, Nisga’a, and Sgüüxs consistently surface clause-finally, in Sm’algayax they occupy four different positions. We show that this variation, however, reduces to a single generalization: interrogative clitics in Sm’algayax are placed immediately to the left of the final DP in the clause, thus representing a typologically rare case of penultimate or second-last position placement.

We show further that penultimate clitic placement in Sm’algayax cannot be reduced to syntactic movement, since the relevant rule would have to involve movement out of, or lowering into, syntactic islands; and it cannot be accounted for by the phonology since interrogative clitics are phonologically enclitic. Instead, we have proposed that the interrogative clitics are specified with morphological linearization features that apply following L-match, providing direct support for the grammatical architecture adopted here.

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²⁹A fuller account of linearization will consider at least two other subcases: the linearization of affixes, driven by lexical features such as [prefix] and [suffix], parallel to the linearization features we have proposed here for clitics: and syntactic linearization, governing linear order between words and phrases.

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