

A second-last position clitic in Sm'algyax (Coast Tsimshian)

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1 Introduction

- This talk has two main goals:
 1. to argue that the interrogative clitic =*du* in Sm'algyax (Maritime Tsimshianic, ISO 639-3: *tsi*; VSO) is a genuine case of a **penultimate (“second-last position”) clitic**, which is so rare typologically that its very existence has been disputed (Klavans 1985; Marantz 1988; Billings 2002; Cysouw 2005).
 2. to show that a **two-step model of clitic linearization at spell-out** can account for its distribution and allomorphy.
 - Step 1 involves a **morphological clitic placement operation** read off a **linearized post-syntactic representation**.
 - Step 2 involves a **phonological operation** sensitive to **local allomorphy**.

1.1 The empirical challenge

- In Sm'algyax, content questions are characterized by a clause-initial *wh*-expression together with the clitic =*du*
- =*du* appears in three distinct positions: following an argument DP (1); following the predicate (2); or following the initial *wh*-expression (3).¹

(1) *Ndeł wilt gapda ts'u'utsdu laalt?*
nde=ł wil-t gap-t=a ts'u'uts=**du**=a laalt
where=IRR.CN COMP-3.I eat-3.II=CN bird=**Q**=CN worm

‘Where did the bird eat the worm?’

Argument placement

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¹Sm'algyax, also known as Coast Tsimshian or the Ts'msyen language, is spoken along the coast of Northern British Columbia, and on the island of Metlakatla, Alaska. All uncited examples come from elicitations with Velna Nelson, Ellen Mason (Txałgiiw/Hartley Bay), and Beatrice Robinson (Gitxaala/Kitkatla). Linguistic examples are given in a four-line format: the top line is given in the Sm'algyax community orthography (Dunn 1978), the second line is presented in the same orthography, but indicates morpheme breaks — word-level morphophonological processes such as obstruent voicing before vowels are not marked at this level. The third line provides grammatical category labels, and the final line provides an English translation. Abbreviations for linguistic glosses are as follows: 1 = first person, 2 = second person, 3 = third person, AX = agent extraction morpheme, CAUS = causative, CN = common noun connective, COMP = complementizer, I = series I clitic, II = series II suffix, III = series III pronoun, IRR = irrealis, PASS = passive, PFV = perfective, PL = plural, PN = proper noun connective, POSS = possessive, PREP = preposition, PROSP = prospective, Q = question particle, REAS = reason subordinator, REL = relative, SG = singular, SX = subject extraction morpheme, T = T voice suffix, TR = transitive, VER = verum.

- (2) *Goł gan dawłdut Dzon?*
 go=l gan dawł=**du**=t Dzon
 what=IRR.CN REAS leave=**Q**=PN John

‘Why did John leave?’

Predicate placement

- (3) *Naadu gu int yoyksa nool?*
 Naa=**du**=a gu in=t yoyks=a nool
 who=**Q**=CN REL AX=3.I wash=CN dish

‘Who washed the dishes?’

Wh-placement

The challenges:

1. Can we find a unified analysis for these placements?
2. What are the theoretical implications of such an analysis?

1.2 Analysis in a nutshell

- =*du* is base-generated in a high, clause-peripheral position.
- Phonologically, =*du* is an enclitic.
- Neither syntax nor phonology accounts for the linear position of =*du*.
- **We argue that =*du* linearization occurs post-syntactically but pre-phonologically.**
- =*du* linearization occurs, roughly, as follows:

– Step 1: the syntax generates a structure that is shipped off to the morphology

- (4) [[CP WH [TP V+T [vP DP_A [VP DP_O]]]] Q]

– Step 2: the hierarchical structure is read linearly: Q, a **morphological proclitic**, must appear to the left of the closest DP

- (5) [[CP WH * [TP V+T * [vP DP_A * [VP DP_O *]]]] Q=] →
 [[CP WH * [TP V+T * [vP DP_A * [VP Q= * DP_O]]]]]

– Step 3: Spellout of Lexical Items/allomorph selection, as =*du* is **phonologically enclitic**, it leans on whatever element that appears to its left.

- (6) /WH/ * /V+T/ * /DP_A/ * /=**du**/ * /DP_O/

Roadmap:

- §2 Background: two content question formation strategies
- §3 Syntax of =*du*
- §4 Phonology of =*du*
- §5 Analysis: =*du* is a second-last position clitic
- §6 Theoretical implications
- §7 Conclusion

2 Background: *wh*-questions in Tsimshianic

- Following Davis and Brown (2011); Davis and Nederveen (2021) on closely related Gitksan, we assume there are two types of *wh*-questions in Sm'algyax, characterized by “direct” versus “indirect” movement.²
- **Direct movement** proceeds as in English: a *wh*-expression undergoes \bar{A} -movement to the left periphery.



- **Indirect movement** structures feature a predicative *wh*-expression that is base generated in initial position and takes a DP as its argument (typically a headless relative clause).
- Though the surface realization of direct and indirect movement often looks identical, one construction in Sm'algyax unambiguously signals the indirect movement structure: content questions featuring the relative pronoun *gu*.³
- *Gu* optionally introduces relative clauses, both headed (8) and headless (9):

- (8) *Wilaayu hana'a gu sis'aaxsit.*
wilaay-i-u=a hana'a=a [**gu** sis'aaxs-it ___]
know-TR-1SG.II=CN woman=CN **REL** laugh-SX

'I know the woman that laughed.'

Headed relative clause

²See Brown (to appear) for an overview of core- vs. non-core-argument extraction morphology in Sm'algyax.

³*Gu* is historically a reduced form of the *wh*-expression *goo* 'what'; however, it is not synchronically a question word.

- (9) *Gabu gu nah dzabn.*
 gap-i-u=a [gu nah dzap-i-n ___]
 eat-TR-1SG.II REL PFV make-TR-2SG.II

‘I ate what you made.’

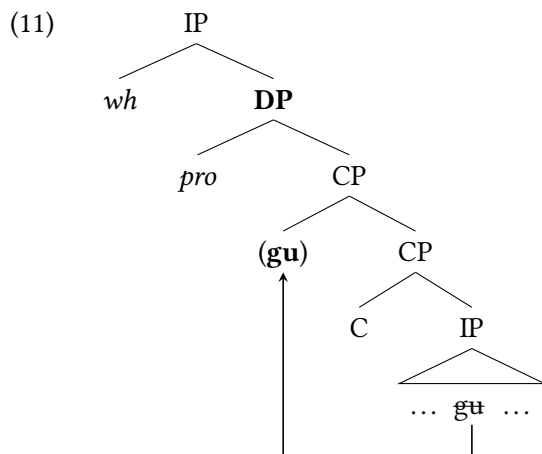
Headless relative clause

- *Gu* may also appear in *wh*-questions, as shown in (10) below.

- (10) *Godu gu yoyksis Meeli?*
 goo=du=a [gu yoyks-i[-t]=s Meeli ___]
 what=Q=CN REL wash-TR-3.II=PN Mary

‘What did Mary wash?’ Literally: ‘What is the [(thing) that Mary washed]?’

- We propose that a *gu*-question like (10) has an indirect movement structure as in (11), with *gu* functioning as a relative pronoun.



Indirect movement

- We now turn to the distribution of =*du*.

3 Syntax of =*du*

- In terms of its **syntax**, =*du* is restricted to root-level content questions such as (12); it cannot occur in embedded questions such as (13):

- (12) *Naadu sibaasis Dzon?*
 naa=**du**=a si-baas-i[-t]=s Dzon
 who=Q=CN CAUS-afraid-TR-3.II=PN John

‘Who did John scare?’

Root question

- (13) *Güüdagu naa limoom sm'ooygit.*
 güüdax-u=a [naa(*=du)=a limoom-i[-t]=a sm'ooygit ___]
 ask-1SG.II=CN who(*=Q)=CN help-TR-3.II=CN chief

'I asked who the chief helped.'

Embedded question

- =du likewise cannot occur in any non-interrogative *wh*-constructions including exclamatives (14), free relative clauses (15) or as a *wh*-indefinite pronoun (16).

- (14) *Goł waalt!*
goo(*=du)=ł waal-t ___
what(*=Q)=IRR.CN be-3SG.II

'What a thing!'

Wh-exclamative

- (15) *Waayu naa dmt in dzaba ts'ikts'igu.*
 Waa-i-u=a [naa(*=du) dm=t in dzap[-t]=a ___ ts'ikts'ik-u]
 find-TR-1SG.II=CN **who**(*=Q) PROSP=3.I AX do[-3.II]=CN car-1SG.II

'I found someone who will fix my car.' Lit. 'I found **who** will fix my car.'

Wh-free relative

- (16) *La'a ligi goo haasgu.*
 la'a=a ligi **goo**(*=du)=a haas-k-u
 bite=CN **what**(*=Q)=CN dog-PASS-1SG.II

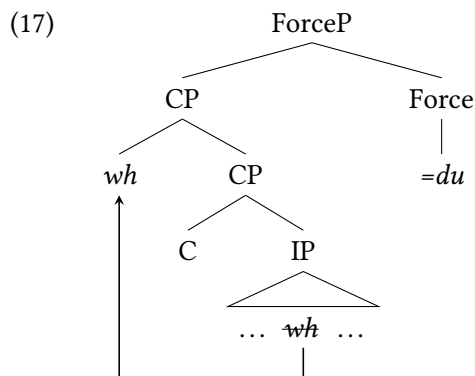
'Something bit my dog.'

Wh-indefinite

- Based on these examples, we conclude that =du is not a C-head, and likewise not a Q-particle (Beck 2006; Kratzer and Shimoyama. 2002; Cable 2010; Kotek 2014), since if it were, we would expect it to occur in both root and embedded content questions.⁴
- Given that =du is associated strictly with root-level content questions, we propose that it is base generated high in the clausal superstructure, heading a ForceP projection, and taking a CP complement.
- Based on the fact that interrogative clitics in every other Tsimshianic language categorically appear in the final-position of a root clause (Rigsby 1986 on Gitksan; Tarpent 1986 on Nisga'a; Tarpent 1994 on Sgüüx), and for reasons that will become clear in §5, we further propose that =du occupies the clausal *right* periphery:⁵

⁴=Du also freely co-occurs with complementizers such as *wil* (see example (1)).

⁵This example shows the ForceP projection taking a content question formed via direct movement as its complement (see §2). As we will discuss in detail in subsequent sections, questions formed via indirect movement are also possible complements to ForceP.



- Support for the high base-generation of =du comes from coordinated content questions, which commonly feature a single occurrence of =du scoping over two interrogative CPs:⁶

(18) *Ndeł nam wil 'waadu gwa'a adat naat nam wil*
 nde=ł na=m wil 'waa-t=**du**=a gwa'a ada=t naa=ł na=m wil
 where=IRR.CN PFV=2SG.I COMP find=3.II=**Q**=CN this and=PN who=IRR.CN PFV=2SG.I COMP
gwin niidznt?
gwin niidzn-t?
 CAUS see-3.II

'Where did you find this and to whom have you showed this?' (Beynon 1932–1939:vol.2 no.41 pg. 7)

4 Phonology of =du

- In terms of its **phonology**, =du is straightforwardly enclitic: it never appears in initial position:

(19) **U/Yu/Dunaa liimit?*
du=naa=a liimi-it?
Q=who=CN sing-sx

Intended: 'Who sang?'

- It may also be followed by other uncontroversially enclitic elements, such as the proper noun connective =t (n.b. "connectives" in Tsimshianic languages are syntactically associated with the nominal element to their *right*, but phonologically encliticize to an element to their *left*):

(20) *Naayut 'nüün? (not: *naa=t (d)u 'nüün)*
 naa=**du** [=t 'nüün]
 who=**Q** =**PN** 2SG.III

'Who are you?'

⁶Our analysis in §5 accounts for the positioning of =du in the first conjunct.

- =*du* exhibits contextual allomorphy effects that are conditioned by a host to the left: when =*du* immediately follows a *wh*-word, it optionally surfaces as either [ju] or [du] ((21) and (22) respectively).

(21) *Naayu baat?*
 naa=**du**=a baa-it
 who=**Q**=CN run-SX
 ‘Who ran?’

(22) *Naadu baat?*
 naa=**du**=a baa-it
 who=**Q**=CN run-SX
 ‘Who ran?’

- However, when it follows a non-*wh* word, it obligatorily surfaces as [du]:

(23) *Goł wils liimidu dm yaatm?* (not: **goł wils liimiyu*)
 goo=ł wils liimi=**du**=a dm yaat-m
 what=IRR.CN kind song=**Q**=CN PROSP tell/sing-1PL.II
 ‘What kind of song will we sing?’ (SLLTD)

- The ban on =*du* appearing in initial position, as well as the contextual allomorphy facts conditioned by the element to its left, point to the same conclusion: =*du* is phonologically an enclitic.

4.1 Interim conclusion

- So far we have shown the following:

Syntactic takeaways:

- =*Du* only appears in root content questions.
- It is absent from embedded questions and incompatible with non-interrogative uses of *wh*-expressions.
- Based on this distribution, we suggested that =*du* heads a ForceP above CP and selects an interrogative CP complement.

Phonological takeaway:

- =*du* is an enclitic.

- Given its clause-peripheral syntactic position and its phonological enclitic status, we would predict =*du* to surface in the clausal final-position. This is not borne out: =*du* never occurs in final position:⁷

⁷Interrogative clitics do, however, occur in final position in every other Tsimshianic language (Rigsby 1986; Tarpent 1987, 1994).

(24) a. *Naayu sa oksgit?*
 naa=**du**=a sa oksk-it ___
 who=**Q**=CN down fall-sx

‘Who fell?’

b. **Naat sa oksgitdu?*
 naa=l sa oksk-it=**du** ___
 who=IRR.CN down fall-sx=**Q**

Intended ‘Who fell?’

- Furthermore, any attempt to derive the various positions of =*du* from its base position via syntactic movement is not viable: such movement would involve, e.g., phrasal movement out of, or lowering into syntactic islands – see for example the coordinated structure in (18).
- **We conclude that the linear positions of =*du* can not be derived syntactically, or phonologically (or by a combination of the two).**

5 Linearization of =*du*

- Recall the three placements of =*du* (*Argument*, *Predicate*, and *wh*).
- Our claims:
 1. all three placements can be reduced to a **single penultimate position** (meaning =*du* is a second-last position clitic)
 2. we can account for the linear position of =*du* by a lexically encoded, morphological proclitic feature: more specifically, =***du* must linearize to the left of the closest DP**.

5.1 Three placements of =*du*

- *Argument placement*: =*du* linearizes to the left of an argument in O function in a WH-V-A-O configuration (phonologically encliticizing to A):⁸

(25) *Dzindel dmt dzapdit Meelidu ts'ikts'ik?*
 dzindeh=l dm=t dzap-t=t Meeli=**du**=a **ts'ikts'ik**
 IRR.when=IRR.CN PROSP=3.I make/fix-3.II=PN Mary=**Q**=CN **car**

‘When will Mary fix the car?’

- Argument placement proceeds as in (26): *Q* (=du), base generated in the right periphery, and bearing a morphological proclitic feature, must appear to the left of the closest accessible DP.

(26) [WH V DP_A DP_O Q] → [WH V DP_A Q DP_O] *Argument placement*

⁸A = subject of a transitive, S = subject of an intransitive, O = object

- *Predicate placement*: =du linearizes to the left of an argument DP in any of S, A, or O function (encliticizing to the inflected predicate):

(27) =du precedes S:

Dzindał dm 'ap yaltgidut Norman?
 dzindaa=ł dm 'ap yaltk-t=**du=t** Norman
 IRR.when=IRR.CN PROSP VER return-3.II=**Q=PN** Norman

‘When is Norman really coming back?’

(Sasama 2001:64)

(28) =du precedes A:

Goł gabidu gyet?
 goo=ł gap-i-t=**du=a** gyet
 what=IRR.CN eat-TR-3.II=**Q=CN** person

‘What do the people eat?’

(29) =du precedes O:

Naal int gapdu ts'ik'aaws?
 naa=ł in=t gap-t=**du=a** ts'ik'aaws
 who=IRR.CN AX=3.I eat-3.II=**Q=CN** split.salmon

‘Who ate the split salmon?’

(30) =du precedes O:

Ndał mi wil giikdu ngwüda'atsn?
 ndaa=ł mi wil giik-t=**du=a** n-gwüda'ats-n
 where=IRR.CN 2SG.II COMP buy-3.II=**Q=CN** POSS-coat-2SG.II

‘Where did you buy your coat?’

- Just like in *Argument placement*, Q shifts from its peripheral position to a clause-internal position to the left of a DP.

(31) [WH V **DP**_{A/S/O} Q] → [WH V Q **DP**_{A/S/O}]

Predicate placement

- *Wh-placement* presents an apparent problem: while =du procliticizes to a DP in (32), it appears to procliticize to a *verb* in (33) and (34) and to a *complementizer-like element* in (35)

(32) Naadut Dzon?

naa=**du=t** Dzon
 who=**Q=PN** John

‘Who is John?’

(33) *Naayu ksüüt?*
 naa=**du**=a **ksüü-it**
 who=**Q**=CN **leave-sx**

‘Who left?’

(34) *Naayu sibaasu?*
 naa=**du**=a **sibaas-u**
 who=**Q**=CN **scare-1SG.II**

‘Who did I scare?’

(35) *Naayu int gaba ts'ik'aaws?*
 naa=**du**=a **in=t gap[-t]=a ts'ik'aaws**
 who=**Q**=CN **AX=3.I eat[-3.II]=CN split.salmon**

‘Who eats split dried salmon?’

- Solution: **wh-placement always involves indirect movement**: therefore =*du* is actually precitizing to a relative clause (a DP) in these cases. Recall from §2:
 - Direct movement parallels *wh*-movement in English: the *wh*-phrase moves to a position on the left periphery of CP.
 - Indirect movement, on the other hand, involves a base-generated *wh*-predicate followed by its DP argument, which usually takes the form of a headless relative clause.
 - The (optional) appearance of the relative pronoun *gu* signals the indirect movement construction.
- Supporting evidence: **all wh-questions with wh-placement optionally allow the relative pronoun *gu*; no wh-questions with argument-placement or predicate placement do.**
- The examples in (36) show that only *wh-placement* is available for =*du* in questions containing *gu*:

(36) a. *Naadu gu int yoyksa nool?*
 naa=**du**=a **gu in=t yoyks[-t]=a nool**
 who=**Q**=CN **REL AX=3.I wash[-3.II]=CN dish**

‘Who washed the dishes?’

b. **naa=t gu in=t yoyks-t=du=a nool*
 who=**IRR**.CN **REL AX=3.I wash-3.II=**Q**=CN dish**

- The object questions in (37) make the same point: without *gu*, =*du* can either attach to the *wh*-phrase (37a) or in penultimate position (37b), reflecting ambiguity between direct and indirect movement.

- With overt *gu*, however, only indirect movement is possible, and therefore =*du* must attach to the *wh*-phrase (37c); attempts to attach it to the predicate in penultimate position are ungrammatical, as shown in (37d).

- (37) a. *Godu* *yoyksis* *Meeli?*
 goo=**du**=a yoyks-i[-t]=s Meeli
 what=**Q**=CN wash-TR-3.II=PN Mary
- b. *Got* *yoyksadut* *Meeli?*
 goo=ł yoyks-i-t=**du**=t Meeli
 what=IRR.CN wash-TR-3.II=**Q**=PN Mary
- c. *Godu* *gu* *yoyksis* *Meeli?*
 goo=**du**=a **gu** yoyks-i[-t]=s Meeli
 what=**Q**=CN **REL** wash-TR-3.II=PN Mary
- ‘Who washed the dishes?’
- d. **goo=ł* **gu** *yoyks-i-t=**du**=t* *Meeli*
 what=IRR.CN **REL** wash-TR-3.II=**Q**=PN Mary

- Crucially, we assume that **DPs (including headless relative clauses) constitute *phases*** (Chomsky 2000, 2001) and therefore their internal structure is impenetrable to =*du* linearization.
- We schematize *wh*-placement below; =*du* linearizes to the left of a DP/headless relative clause:

(38) [WH **DP_S** **Q**] → [WH **Q** **DP_S**] *Wh-placement*

5.2 What linearization is *not* sensitive to

- Since linearization is only sensitive to the category DP, =*du* placement is insensitive to all other elements of the clause, including: prepredicative functional elements (39),⁹ and adjuncts and non-core arguments, which follow the core arguments ((40) and (41))
- In spite of this ‘extra’ linguistic material, =*du* categorically appears to the left of the final DP argument.

- (39) *Ndeł* *nam* *wil* *niisdu* *ol?*
 ndeh=ł **nah=m** **wil** niis-t=**du**=a ol
 where=IRR.CN **PFV=2.I** **COMP** see-3.II=**Q**=CN bear

‘Where did you see the bear?’

⁹Except, of course, relative *gu*.

(40) *Goł ky'ilamdu 'yuuta da haas?*
 goo=l ky'ilam-i-t=**du**=a 'yuuta [da=a haas]
 what=IRR.CN give-TR-3.II=Q=CN man PREP=CN dog

'What did the man give the dog?'

(41) *Naal nah habooltidut Dzon asda gits'iipda?*
 naa=l nah habool-t-i-t=**du**=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?'

- The same is true of argument CPs, as illustrated by the long-range *wh*-dependency in (42):

(42) *Ndeł maldidut Betty gooys Meeli?*
 ndeh=l mał-t-i-t=**du**=t Betty [goo-i[-t]=s Meeli]
 where=IRR.CN say-T-TR=Q=PN Betty go-TR-3.II=PN Mary

'Where did Betty say Mary went?'

- Not only is the bracketed/embedded CP unavailable for =*du* placement, but its internal DP constituents are also unavailable. This indicates that CP is opaque for clitic placement, and therefore constitutes a phase.

Conclusions:

- =*Du* may surface in one of three linear positions in the clause: *Argument placement*, *Predicate placement*, or *Wh-placement*.
- These three surface placements of =*du* instantiate a single, penultimate position, if we assume that =*du* post-syntactically procliticizes to the closest accessible DP (which, in the case of *wh-placement*, may be a headless relative clause).

(43) [WH V DP_A **DP_O** Q] → [WH V DP_A Q **DP_O**] *Argument placement*

(44) [WH V **DP_{A/S/O}** Q] → [WH V Q **DP_{A/S/O}**] *Predicate placement*

(45) [WH **DP_S** Q] → [WH Q **DP_S**] *Wh-placement*

- Functional elements, adjuncts, and CP complements do not affect the placement of =*du*.

6 Theoretical implications

- We have now established the following:
 - (i) In order to account for the distribution of =*du*, clitic placement must occur in a post-syntactic, pre-phonological component of the grammar: i.e., **the morphology**.

- (ii) Clitic placement is partially sensitive to syntactic information: in particular, =*du* only “sees” DPs, which means it is sensitive to (a) categorial information; (b) the distinction between heads and phrases.
 - (iii) However, it is *insensitive* to depth of embedding: =*du* always procliticizes to the linearly closest DP to its left, even when another DP is hierarchically closer.
 - (iv) The domain of clitic placement is local, as defined by phases: only DPs within the same phase are accessible, while spelled-out phases (DPs and CPs are impenetrable.¹⁰)
- Given this, we need a model of the morphological component which provides a partial linearization of syntactic structure, relativized to the lexical properties of individual clitics.

6.1 Implementation

- First of all, we adopt from Davis and Huijsmans (to appear); Huijsmans (2023) the idea that clitics come lexically equipped with linearization features. These specify:
 - (a) The direction of cliticization (pro- vs. en-cliticization)
 - (b) The category of the host: DP, in the case of =*du* (which may be further broken down into [+D, -head])
- A lexical entry for =*du* will look like that in (46):

$$(46) \quad \text{Lexical entry for } =du: [Q] \leftrightarrow \left\{ \begin{array}{l} /du/ \\ \text{---}=[DP] \end{array} \right\}$$

- Second, we need a partially linearized syntactic representation.
- For present purposes, we modify the standard linearization operation of Marantz (1988); Embick and Noyer (2001), which converts hierarchical structures such as (47) to linearized structures such as (48)

$$(47) \quad [_{XP} X [_{YP} [_{ZP} Z] Y]]$$

$$(48) \quad [X * [Z * Y]]$$

(The notation $a * b$ indicates that a is left adjacent to b .)

- However, crucially, we **do not delete all hierarchical structure** when linearization takes place. In particular, we keep structure intact in the current phase, as in (49):

$$(49) \quad [_{XP} X * [_{YP} [_{ZP} Z] * Y]]$$

- We do, however, delete internal bracketing of completed phases, meaning they are automatically inaccessible for clitic placement, as desired.

¹⁰We assume that clauses introduced by the subordinating conjunction element *ada* ‘and’, such as those in (18), also constitute a CP phase and are likewise impenetrable for =*du* linearization. As a result, =*du* occurs in the first (i.e. the matrix) conjunct.

- This means that at the first (morphological) stage of spell-out for the expanded CP phase containing =du, the following representations will act as input for clitic linearization for *Argument placement* (51a), *Predicate placement* (51b), and *Wh-placement* (51c).

- (50) a. [[CP WH * [TP V+T * [vP DP_A * [vP DP_O *]]]]] Q= [WH V DP_A DP_O Q]
 b. [[CP WH * [TP V+T * [vVP DP_{A/S/O} *]]]] Q= [WH V DP_{A/S/O} Q]
 c. [[[TP WH_{PRED}+T * [vP DP_S *]]]] Q= [WH_{PRED} DP_S Q]

- As required, =du will pick out the rightmost DP, leading to the intermediate representations in (51):

- (51) a. [[CP WH * [TP V+T * [vP DP_A * [vP Q= * DP_O]]]]] [WH V DP_A Q DP_O]
 b. [[CP WH * [TP V+T * [vVP Q= * DP_{A/S/O}]]]] [WH V Q DP_{A/S/O}]
 c. [[[TP WH_{PRED}+T * [vP Q= * DP_S]]]] [WH_{PRED} Q DP_S]

- At the second stage of spell-out, we assume bracket erasure as input to the phonological component, as in (52):

- (52) a. /WH/ * /V+T/ * /DP_A/ * /=du/ * /DP_O/ WH V A=du DP_O
 b. /WH/ * /V+T/ * /=du/ * /DP_{S/A/O}/ WH V=du DP_{A/S/O}
 c. /WH_{PRED}+T/ * /=du/ * /DP_S/ WH=du DP_S

7 Conclusion

- Sm'algayax has a second-last position clitic.
- Its position in the clause cannot be handled by the syntax, phonology, or a combination of the two.
- Therefore, it provides evidence for a two-step spell out process, in which the first step involves morphological linearization.
- Linearization should be handled via a phase based analysis, which allows the clitic to attach only to DP constituents in its phasal complement.

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