Multi-predicate constructions in Nuuchahnulth

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Contents

1 The Basic Clause

1.1 Syntactic Predication

Like many languages of the Pacific Northwest, Nuuchahnulth is predicate-initial and has a great deal of flexibility with respect to what parts of speech can be used predicatively. Because the term "predicate" (and associated derivations "predicative" and so on) is often ambiguous between syntactic and semantic concepts, I will use special vocabulary to distinguish syntactic and semantic phenomena.

I will reserve the word *predicate* to refer to the syntactic unit that connects other units like subject and object and other complements to one another. In English, a syntactic predicate must be verbal, as in (1,2). The verb 'barks' serves as the predicate of (1), connecting it to the subject 'the dog', and 'is' serves as the predicate of (2), connecting its subject 'the grass' and complement 'green.' I will show that in Nuuchahnulth, the syntactic predicate does not need to verbal, and can come from a wide variety of syntactic categories. I will refer also refer to the units that predicates connect as *participants*—this term encompasses both subject and complements. The sole participant of (1) is 'the dog', and the participants of (2) are 'the grass' and 'green'.

(1) The dog barks.

(2) The grass is green.

In contrast to *predicate* and *participant*, which are syntactic concepts, I will use *relation* and *argument* to refer to their correlates in compositional semantics. The *relation* is the atomic semantic unit that relates arguments to each other, typically represented with capital letters. For example, in (1), the English word *barks* has the relation BARK. Relations have some number of semantic *arguments*. For example, BARK can be modeled with two arguments: the event of barking, and the barker. This could be represented as BARK(e, x). Note that the predication itself (BARK) is at least conceptually separate from

the number and type of its arguments. When I find it important to draw out this separation between the semantic unit and the number of its arguments, I may also refer to the relation as a *predicate symbol*[1]. This representation is a simplification the fuller semantic modeling that I will use later, Minimal Recursion Semantics (Copestake et al. 2005).

As previously mentioned, this terminological divide was motivated by Nuuchahnulth's syntactic flexibility. While there are syntactic categories like verb, noun, and adjective, any of these may function as syntactic predicate or participant depending on where they fall in the sentence. The terms "verb phrase," "noun phrase," and "adjective phrase" are valid but not illuminating for predication, as any of these may be predicates.

In (3), the verb *ṅaacsiičiƛ* 'see' is serving as the clausal predicate, while the clause *hałmiiḥa quuʔas* 'drowining person' is serving as the participant. In (4), the adjective *qʷaćał* 'beautiful' is the predicate of the sentence, with the noun *ḥaakʷaaƛ* 'young girl' is the participant. In (5) the noun *pisatuwiɬ* 'gym' is the predicate and there are no participants. In this case, postposed *ʔaanaḥi* 'only' is a predicate-modifying adverb and not a fulfilling an argument role for the predicate's relation GYM.

(3) ṅaacsiičiƛʔiš hałmiiḥa quuʔas.
ṅaacs-i·čiƛ=ʔi·š hałmiiḥa quuʔas
see-IN=STRG.3SG drowning person
'He sees a drowning person.' (**N**, Fidelia Haiyupis)

(4) qʷaćałʔiš ḥaakʷaaƛʔi.
qʷaćał=ʔi·š ḥaakʷaaƛ=ʔi·
beautiful=STRG.3 young.girl=ART
'The young girl is beautiful.' (**C**, *tupaat* Julia Lucas)

(5) pisatuwiłma ʔaanaḥi.
pisatuwił=ma· ʔaanaḥi
gym=REAL.3 only
'It's only a gym.' (**B**, Marjorie Touchie)

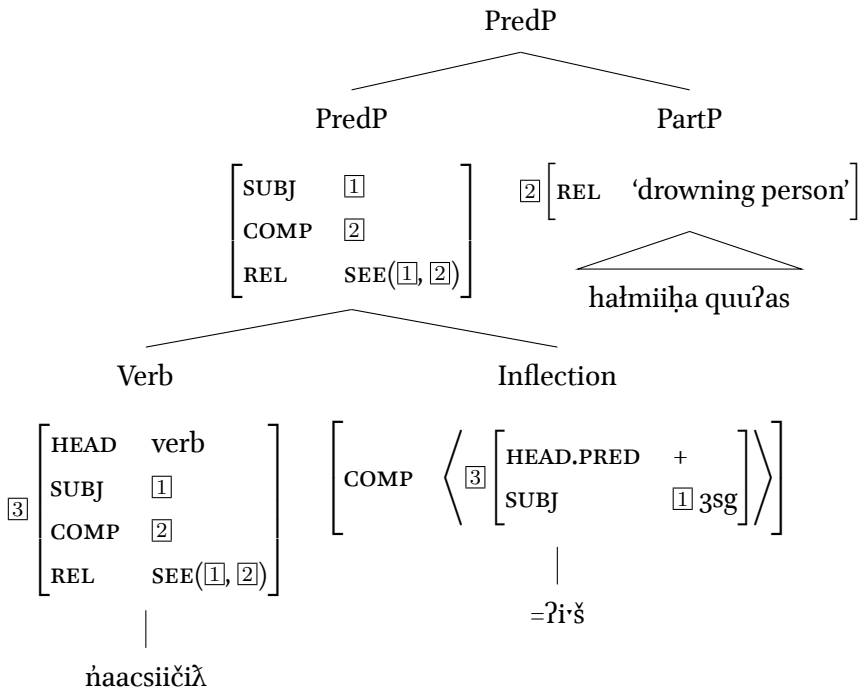
The way I model this predicate flexibility is by declaring that clauses are headed by their second-position inflection, which selects for a complement that is predicative, or in an HPSG model is [PRED +]. I define the syntactic categories of Noun, Verb, and Adjective in Nuuchahnulth as [PRED +], so they may all be the immediate complement of the second position clitic. Syntactic sketches in an HPSG style are given for (3, 4, 5) are given in (6, 7, 8) below.[2] In these cases there is no consequential difference between the categories of 'verb', 'adjective', and 'noun', and this is by design. When creating predicate phrases, this distinction becomes irrelevant. However, nouns differentiate themselves from adjectives and verbs when creating participant phrases (PartP) which I turn to now.[3]

[1]From terminology used by the DELPH-IN consortium. `http://moin.delph-in.net/ErgSemantics/Basics`

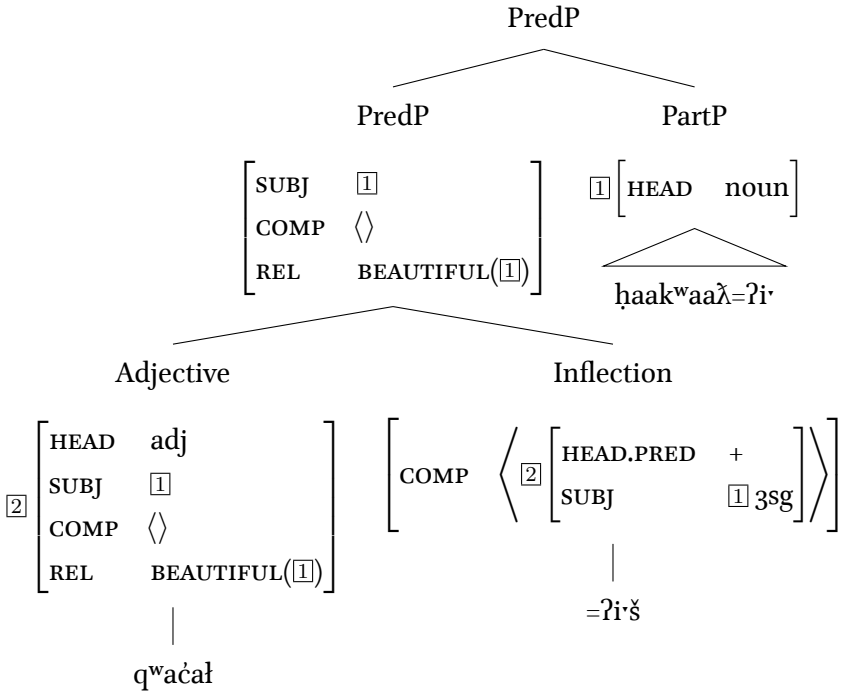
[2]Note that here I have used the symbol REL to refer to what I have defined as a semantic *relation*. In the implemented grammar, this is labeled PRED for 'predicate symbol'. This does not cause a problem with the PRED value on HEAD, because the two attributes lie on different paths.

[3]Adjectives differ from verbs in their behavior when serving as a root for a suffix verb, and other morphological behavior. A full analysis of the distinction between syntactic categories in Nuuchahnulth is beyond the scope of this work.

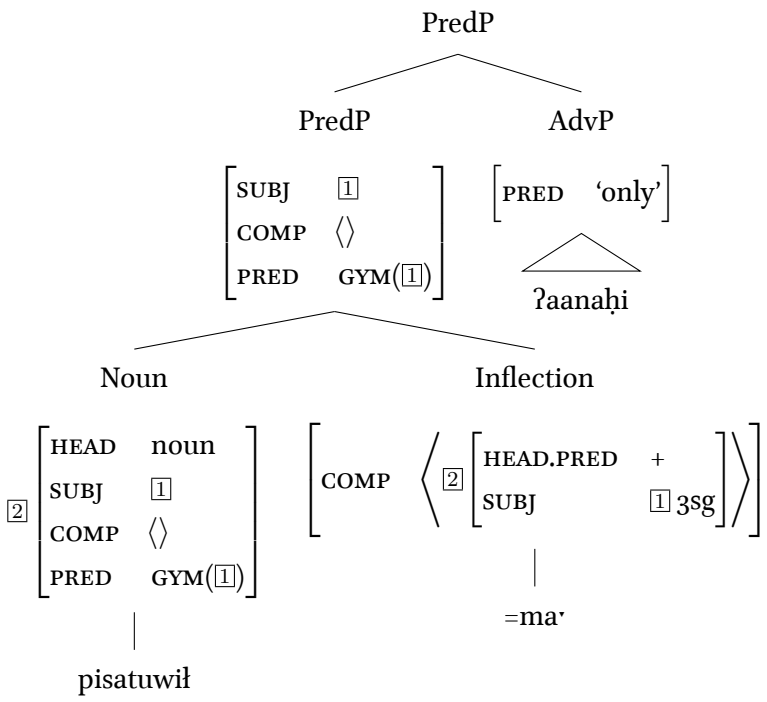
(6)


PredP
PredP
PartP
SUBJ 1
COMP 2
REL SEE(1, 2)
2 REL 'drowning person'
hałmiiḥa quuʔas
Verb
Inflection
3 HEAD verb
SUBJ 1
COMP 2
REL SEE(1, 2)
COMP ⟨ 3 HEAD.PRED +
SUBJ 1 3sg ⟩
=ʔi·š
ṅaacsiičiƛ̓

(7)


PredP
PredP
PartP
SUBJ 1
COMP ⟨⟩
REL BEAUTIFUL(1)
1 HEAD noun
ḥaakʷaaƛ̓=ʔi·
Adjective
Inflection
2 HEAD adj
SUBJ 1
COMP ⟨⟩
REL BEAUTIFUL(1)
COMP ⟨ 2 HEAD.PRED +
SUBJ 1 3sg ⟩
=ʔi·š
qʷaćał

(8)



1.2 Participant Phrase

Just as verbs, nouns, and adjectives may all be predicates, they may also all be participants. (4) has a straightforwardly nominal participant, the noun and article *ḥaakʷaaƛʔi* 'the young girl.' However, verbs (9) and adjectives (10) may also serve as participants.

(9) ʔuḥʔiiš ʕiḥak kamatqukʔi.
ʔuḥ=ʔiˑš ʕiḥak kamatq-uk=ʔiˑ
be=STRG.3 cry.DR run-DR=ART
'The running one is crying.' (**C**, *tupaat* Julia Lucas)

(10) wiƙiičʔaał ƛ̓iixćus ƛaƛuuʔi.
wik=ǃiˑč=ʔaał ƛ̓iixćus ƛaƛuu=ʔiˑ
NEG=CMMD.2PL=HABIT laugh.at.DR other.PL=ART
'Don't laugh at others.' (**C**, *tupaat* Julia Lucas)

TODO: confirm that (10) is okay for sharing permissions, from a version of the Only Teachings.

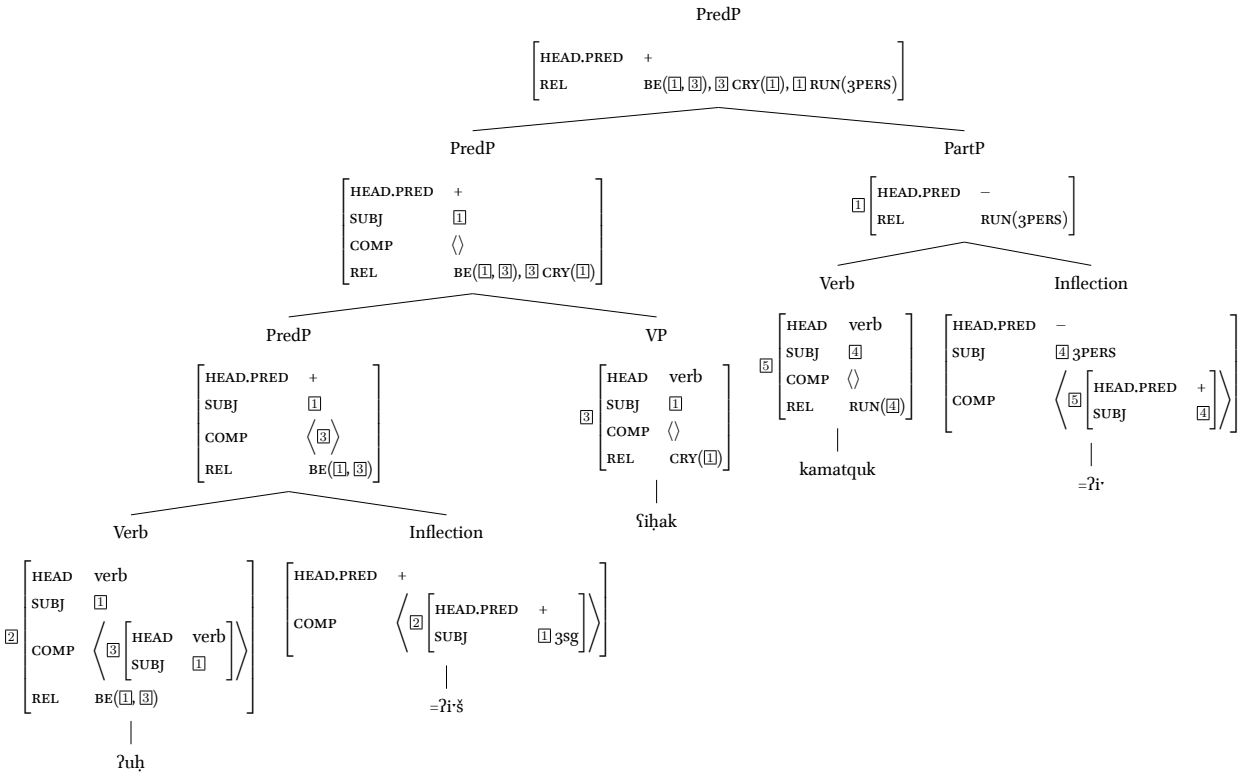
As detailed in Jacobsen (1979) and Wojdak (2001), when an adjective or verb is used as a participant, as in (9, 10), the article *=ʔiˑ* is required to make the sentence grammatical. When the participant is headed by a common noun, as in (3), the article is optional. Proper nouns differentiate themselves from common nouns in that they may never take the article (Inman 2018). They are also never in predicate position.

My analysis of these facts is to treat the article *=ʔiˑ* as a relativizer that creates a participant Inman

(2018).[4] Noun phrases may be relativized without the article, but other predicate phrases must be headed by the relativizing second position article *=ʔiˑ*. Like other second position inflection, I model the article as requiring its complement to be [PRED +], creating a structure that is [PRED −]. I model proper nouns as [PRED −], so that they do not unify with the article. I define participants (as opposed to predicates) as necessarily [PRED −].

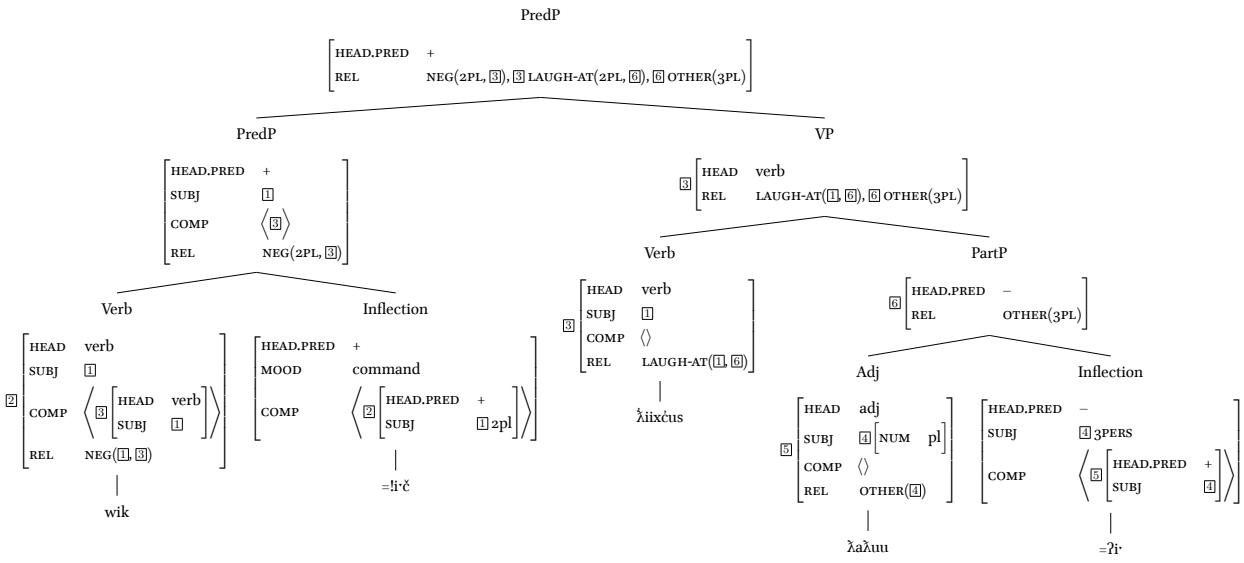
The sketch trees (11, 12) below demonstrate the syntax of the verbal and adjectival participants of (9, 10). In (12) a PartP is filling a complement of the predicate through a head-complement rule (Bender et al. 2002, TODO:P&S94?) while in (11), the PartP is filling a subject role through a head-subject rule (*ibid*). Importantly, both of these rules are selecting for a non-head-daughter that is [PRED −]. This guarantees that either the article will appear on the participant, or the participant will be of a category that is non-predicative.

(11)



[4]This ultimately is original to Werle, *p.c.*, who has also documented that *=ʔiˑ* is morphologically in the same position as mood portmanteaus, and has supplanted the third person definite mood in some dialects. TODO: Ask Adam if there is some way I can cite him for this.

(12)



To account for nouns ambiguously functioning as both predicates and participants, I use a unary (non-branching) rule that relativizes nominal components. My initial model was to underspecify the PRED value on common nouns, but this generates the wrong semantics. The semantic modeling I have used for nouns such as *pisatuwiɬ* 'gym' looks like this:

(13) $\textsc{gym}(e, x)$

The event variable e is there for sentential tense, aspect, mood, and evidentiality values (TAME), as well as adverbial modification, as in (5). However, it is the first argument (x) that is needed by the semantics when nouns are used as participants. That is, on this model nouns need to be relativized the same way that adjectives and verbs need to be. The only distinction is that nouns may be relativized without the article =ʔɪ· present.

1.3 Participant Ordering

There is a strong tendency in Nuuchahnulth for each clause to have one overtly-expressed participant,[5] but if there are two participants expressed, they can come in any order. There is a preference in the southernmost dialects (Barkley sound and Central) for VSO ordering, and a preference in the northern dialects (Northern and Kyuquot) for VOS ordering.[6] This preference is not absolute, and to make the sentence unambiguous, speakers can use *ʔuukʷiɬ* to mark any non-highest argument (Woo 2007).

It is possible for speakers to move a participant in front of the predicate for focus. This left-dislocated participant is outside the calculation for second position inflection.

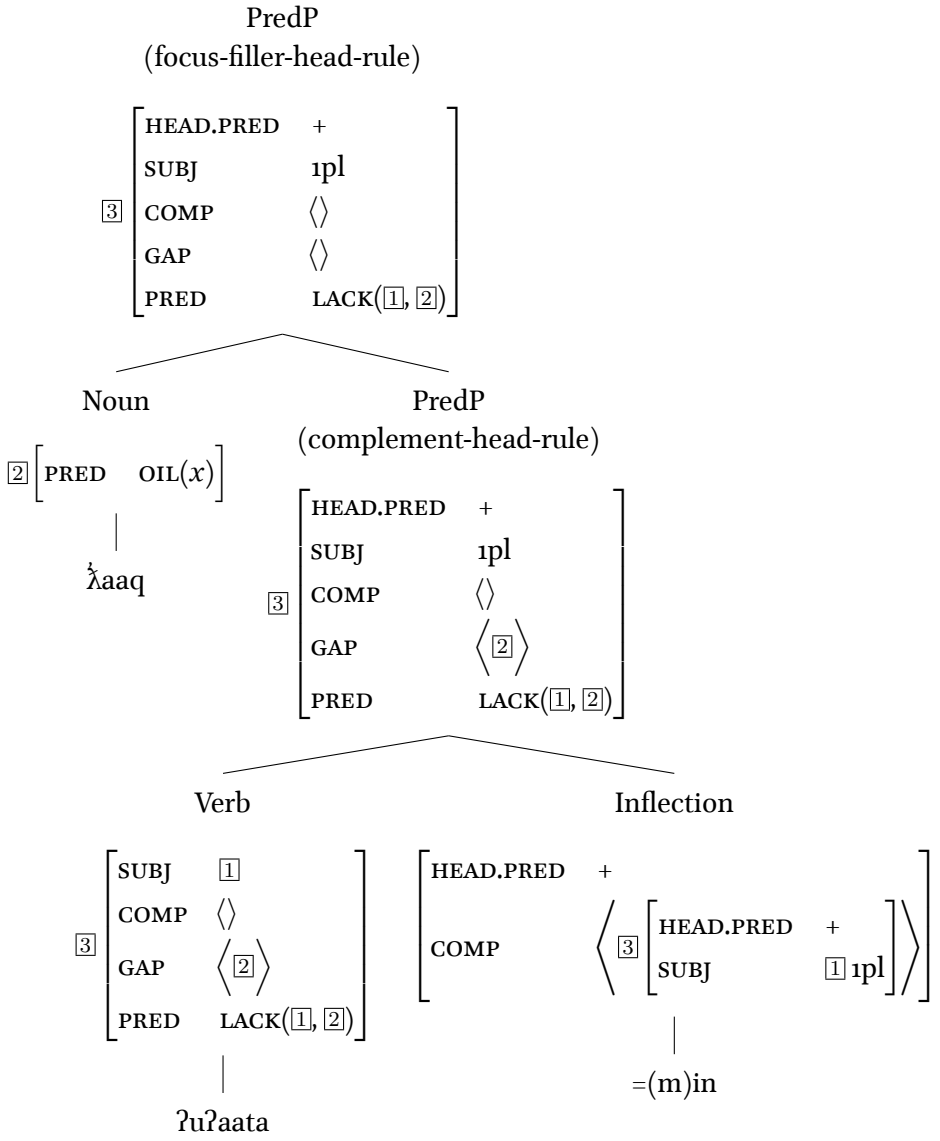
(14) ƛ̓aaq ʔuʔaatamin, waaʔaƛ̓weʔin quʔušin.
ƛ̓aaq ʔu-ʔa·ta=(m)in waa=!aƛ̓=we·ʔin quʔušin
oil x-lack=REAL.1PL say=NOW=HRSY.3 raven
' "We need oil," said Raven.' (**B**, Marjorie Touchie)

[5]TODO: is there a good canonical citation for this? Rose (1981) mentions it.

[6]Again, Rose (1981) mentions this for Kyuquot but this is a novel claim about Northern. Is there a good citation?

One model for this phenomenon is a gap-filler construction (Pollard & Sag 1994)[TODO:page], which avoids the problem having to recalculate how the clitics behave in a sentence like (14). A sketch of the tree is given below.

(15)



1.4 Second-position clitics

The majority of clausal inflection in Nuuchahnulth is in a complex of second position enclitics which fall on the first word of the clause. The examples so far have all shown these clitics attaching directly to the sentence predicate, but anticipating the need for them to attach to modifiers (1.5), I have asserted that the clitics are the syntactic heads of the clause.[7] This analysis will require argument composition,

[7]TODO: I am going to end up with 3rd person singular neutral mood as a non-branching rule rather than a null element in the string. Should mention that here.

or a word taking on the arguments of its complement (TODO: Reference Miller & Sag paper on French clitics, which I think is the first instance of this anlaysis).

The way I model this in my syntactic analysis is by the subject-mood clitics taking their complement's valence and making it their own. That is, the generic type for the second-position clitics is:

(16)
$$\begin{bmatrix} \textit{clausal-inflection} & \\ \textsc{head.pred} & + \\ \textsc{subj} & \boxed{1} \\ \textsc{comp} & \left\langle \begin{bmatrix} \textsc{head.pred} & + \\ \textsc{subj} & \boxed{1} \\ \textsc{comp} & \boxed{2} \end{bmatrix} \right\rangle \oplus \boxed{2} \end{bmatrix}$$

TODO: Further flesh out the above with full rule extraction from the (not buggy) implementation.

The inflection unifies its complement's subject with its own, and adds its complement's complements list to its own complements list. Particular lexical items in the class of clausal inflection inherit from the rule type above and add their own semantic information (second person subject and hearsay evidentiality, for example).

This type of lexical item can only work syntactically for one element in the second position clitic complex, which in Nuuchahnulth includes the subject-mood portmanteau, as well as tense, possession, causative, the "now" morpheme, and others. I model the subject-mood portmanteau as the head of the complex, and attach the other elements of the complex as "prefixes" or "suffixes" that attach to the clausal inflectional element. The work of attaching this complex to the preceding element is left for further development of the morphophonological system.

1.5 Clitics attaching to modifiers

The examples so far have shown clitics attaching directly to a predicate. However, as second-position elements, these clitics may also attach to modifiers. In the case of the main clause predicates, they may attach to preceding adverbs (17), conjunctions (18), and adpositives (19),[8] and the participant article may attach to a modifying adjective (20).

(17) ẏuuqʷaaʔaqƛs ṅaačuk.
ẏuuqʷaa=ʔaqƛ=s ṅaačuk
also=FUT=1SG look.for
'I will also look for it.' (**C**, *tupaat* Julia Lucas)

[8]The claim that (19) is an adpositive is somewhat controversial. Woo (2007) analyzes these as little-*v*, a category which does not exist in HPSG analyses. What this unit does is mark participants that fulfill a certain role with respect to the verb, similar to case-marking. An analysis that treats this particle as an adposition can generate the same set of sentences as a little-*v* analysis. In this model, non-agentive arguments may be realized by a Participant Phrase or an Adposition Phrase headed by *-L.(č)iɬ*.

(18) ʔaḥʔaaʔaƛ̓na huʔacačiƛ̓ ʔaḥkuu.
ʔaḥʔaaʔaƛ̓=na· huʔa-ca-čiƛ̓ ʔaḥkuu
and.then=STRG.1PL back-go-MO D1
'And then we came back here.' (**C**, *tupaat* Julia Lucas)

(19) hiišiłʔaƛ̓ ʔiiqḥuk, ʔumaḥsiičiƛ̓s ḥaakʷaaƛ̓.
hiš-L.(č)ił=ʔaƛ̓ ʔiiqḥ-uk ʔumaḥsiičiƛ̓=s ḥaakʷaaƛ̓
all-DO.TO=NOW tell-DR want.to.marry.MO=STRG.1SG young.woman
'He told everyone, "I want to marry that young woman." ' (**C**, *tupaat* Julia Lucas)

(20) ẁuyaa ḥaa ƛ̓aʔuuʔi maḥt̓ii.
ẁuy-a· ḥaa ƛ̓aʔuu=ʔi· maḥt̓i·
burn-DR D3 other=ART house
'The other house was burning.' (**C**, *tupaat* Julia Lucas)

TODO: Find a two-word analytic *ʔuukʷił* version of (19), which only has the suffix version *-L.čił*.

Because there is no movement in HPSG, my analysis cannot simply say that the clitics in (17–20) "move" into position of the leftmost item in the phrase. There are benefits to this design decision (faster computation, fidelity to the ordering of the surface string, bidirectionality of parsing and generation, TODO: citation, Sag? Flickenger?), but second position phenomena is one of the areas that requires extra analytical work in HPSG.

In both (17) and (20), the second position clitic containing the subject information is attaching to a modifier of a later predicate. In the lexical rule seen in §1.4, these clitics are selecting for predicate complements, to which they assign semantic information (such as tense), and taking on their subject and complements. However, in the case where the clitics attach to a modifier, I cannot model the clitics as selecting for a predicate. I must have the clitic select for a modifier, and assign its semantic information to the modifier's modified value. That is, the AVM for the full predicate complex *=ʔaqƛ̓=s* in (17) should look something like this:

(21)
$$\begin{bmatrix} \textit{clausal-inflection} & \\ \textsc{head.pred} & + \\ \textsc{comp} & \left\langle \begin{bmatrix} \textsc{head} & +\text{mod} \\ \textsc{mod} & \left\langle \begin{bmatrix} \textsc{head.pred} & + \\ \textsc{subj} & \text{1sg} \\ \textsc{tense} & \text{future} \end{bmatrix} \right\rangle \end{bmatrix} \right\rangle \end{bmatrix}$$

One way to create structures like in (21) is to have different lexical entries for every clitic, with alternate structures for predicate complements and modifier complements. Because Nuuchahnulth has literally hundreds of these clitics, this is perhaps not the best solution. Instead, I create a lexical rule which creates a structure like (21) from lexical entries of the type (16).
(TODO: Actually implement this and give a summary of the lexical rule type. There's going to be some complications with list modifications and quantification.)

1.6 Summary

Because of the predicate flexibility in Nuuchahnulth grammar, I have defined special terminology to distinguish between semantic and syntactic phenomenon. I use *predication* to refer to atomic semantic units and *argument* to refer to the variables that those semantic units relate. I refer to syntactic *predicates*, which are the position in the clause where semantic arguments may be filled. *Participants* are the syntactic units that fulfill a predicate's semantic arguments.

I model syntactic predicates and participants as a boolean-valued feature [PRED +|–]. Predicate phrases and participant phrases are defined as units that are [PRED +] and [PRED –] respectively. The clausal clitics, including the article, select for [PRED +], while the head-complement and head-subject rules select for [PRED –]. Verbs, adjectives, and common nouns are [PRED +]. Proper nouns are [PRED –] and so may not be predicates.

When participants occur to the left of the verb, they fall outside the second position of the clausal clitic complex. I model this as a gap-filler rule that focuses the left-dislocated element.

2 Methodology

This work has proceeded along two parallel tracks. The first has been gathering primary field work on the data and working with published corpora in the language to uncover grammatical facts. The second is the implementation of the analysis of these grammatical facts through a computational syntactic framework. I will address my methods for each part of this separately.

2.1 Gathering data in Nuuchahnulth

Before I began my project on serial verbs and the linker, I first had to learn enough Nuuchahnulth to become at least conversant in the language. I did this by reading the published literature (especially Sapir & Swadesh 1939), attending language learning classes in Port Alberni (many of them with my colleague, Amie DeJong), and direct study with Adam Werle, some of which was funded through summer Foreign Language Acquisition Scholarships (FLAS). The language lessons I participated in were taught by Adam Werle and often included elders and native speakers who would assist, correct, and aid in teaching. It was through this venue that I first met fluent Nuuchahnulth elders.

In the summer of 2016, Adam and I traveled to Hot Springs Cove and collected texts from some Hesquiaht elders. On request, that data is not presented in this dissertation, but some of that work has informed my analysis, which I have confirmed with other speakers.

2.1.1 Data sources

Before I collected my own data, I looked at data from a variety of sources to generate appropriate questions. My sources were previous syntactic work on the language, especially Jacobsen (1993), Nakayama (2001), Wojdak (2003), Waldie (2004), and Woo (2007). I also relied on corpora published by linguists, especially the Nootka Texts (Sapir 1924; Sapir & Swadesh 1939, 1955; Sapir et al. 2000, 2004, 2009).

In addition to these resources, I looked at community-produced texts such as "Son of Thunderbird" and texts I received from linguists Adam Werle and Henry Kammler. The largest of these were an in-progress Bible translation Adam Werle and Sophie Billy were working on and several recordings Henry

Kammler made with the late Barbara Touchie. I looked through these sources for examples of the phenomena I was looking for, annotated and cataloged them, and used some of these examples as prompts for speakers.

2.1.2 Elicitation methods

I spent January, February, and part of March of 2018 in Port Alberni working with native speakers and gathering data specifically for this dissertation. In that period of time I worked with Julia Lucas (Nuuchahnulth name *tupaat*, Ahousaht tribe, central dialect), Bob Mundy (Uclueleht tribe, Barkley Sound dialect), Marjorie Touchie (Uclueleht tribe, Barkley Sound dialect), Fidelia Haiyupis (Ehattesaht tribe, northern dialect), and Sophie Billy (Checkleseht, Kyuquot-Checkleseht dialect). I also present data I gathered from Simon Lucas (Nuuchahnulth name *yuułnaak*, Heshquiaht tribe, northern dialect), the late husband of Julia Lucas.

I have made an effort to make my work, and at the very least my recordings and transcriptions, available to the communities I have worked with. Some of my work with Fidelia Haiyupis and Sophie Billy was funded by the Ehattesaht tribe, which has received copies of my notes and recordings. The Uclueleht tribal office has also received the notes and recordings I made with Bob Mundy and Marjorie Touchie. I have also made recordings and transcriptions available online to language learners. Some of this information is restricted to people who have the right password to access the folder. I take precautions not to collect data that is sensitive to audience restrictions, and so for most of these materials, password-restricted access is not done out of a concern with rights management, but with the fact that most of these materials are works in progress and I do not want possibly-inaccurate transcriptions to be disseminated widely among people who are lower-level language learners.

When working with speakers, I tended to work two to four hours at a time and tried to structure sections in three parts: grammatical questions and elicitations, vocabulary questions and clarification questions on existing texts, and text elicitation. The purpose of this was to avoid wearing speakers out with too many grammatical questions in a row, and to collect other important data. While there has been good primary linguistic documentation in Nuuchahnulth, particularly in Sapir & Swadesh (1939) and Rose (1981), there are many differences across the language's wide spread of dialects that remain undocumented and unknown. Although one of my speakers did not like giving lengthy texts, I was able to collect connected, fluent texts from other speakers, which is a lasting artifact and can be used to answer questions beyond the narrow scope of my dissertation. I have approximately six hours of fluent Nuuchahnulth from that period, about two-thirds of which is currently transcribed. I have since visited my consultants again and asked follow up questions as well as collected more texts.

2.1.3 Methods of Elicitation

I used six methods of elicitation, which I will describe below. The aim of all these methods is to obtain the most natural Nuuchahnulth examples or grammatical judgments that are relevant to the phenomenon under investigation. Some methods worked better than others.

I. Describing Images

The aim of this methodology is to avoid the metalanguage (English) through the visual medium. The speaker is presented with a series of images and asked to describe what is going on using only Nuuchahnulth. One set I used was a series of photos of dogs at a reserve. The dogs are hanging out on the pier. They begin barking at the water. A boat approaches the pier. The dogs go up to meet the man in the

boat, who pets them. The purpose of this was to elicit a few serial verb constructions, the equivalent of "The dogs are at the wharf" (locations are verbs in Nuuchahnulth), "The man drives the boat to the dock" (which would require two verbs). In addition to photo series, I also used hand-drawn pictures on index cards, and existing picture-story books.

I found this method occasionally fruitful but limiting. Sometimes (especially with my hand-drawn cards), speakers would spend a lot of time questioning what the picture was meant to represent. Even with photos, they wanted to know what to focus on: Who is the man in the photo, and who is he related to? While broad grammatical structures could be gathered this way, other methods were more fruitful for eliciting targeted phenomena.

II. Answering Questions

Another way of getting natural speech is by asking questions to elicit the phenomenon. In this method, I would tell a short story and ask a question about what happened. Ideally, I hoped elicit a response that uses the grammatical phenomenon in question.

For instance, one of my setups was the following:

(22) ḥaaciičiƛits hitacsuḥta ʔaƛa saštup. ċawaak ʕiniiƛ, ċawaak qʷayaċiik. ƛawiičiʔats ċawaakʔi. hitaaqƛ̓iƛ ƛaʔuuʔi. kamitqšiƛit. ʔuḥʔats ʕiniiƛ ƛawiičiʔat. ʔaaqinʔapḥ qʷayaċiik.

ḥaac-°i·čiƛ=(m)it=s hitacsuḥta ʔaƛa saštup. ċawaak ʕiniiƛ, ċawaak qʷayaċiik.
see-IN=PST=STRG.1SG out.of.the.forest.DR two animal. one dog, one wolf.

ƛaw-°i·čiƛ=!at=s ċawaak=ʔi·. hitaaqƛ̓iƛ ƛaʔuu=ʔi·. kamitq-šiƛ=(m)it.
near-IN=PASS=STRG.SG dog=ART. into.the.forest.MO other=ART. run-MO=PST.

ʔuḥ=!at=s ʕiniiƛ ƛaw-°i·čiƛ=!at. ʔaaqinʔap=ḥ qʷayaċiik.
be=PASS=STRG.1SG dog approach-IN=PASS. do.what=QUES.3 wolf.

'I saw two creatures come out of the forest. One was a dog, one was a wolf. The dog approached me. The other went back into the forest. He ran. It was the dog that approached me. What did the wolf do?'

The expected answer is "The wolf ran into the forest," which requires coordinating the two verbs 'run' and 'into the forest.' I had very low success rates with this kind of elicitation and quickly abandoned it. Speakers would select the most semantically salient verb, in this case 'into the forest', and drop the other verb in the construction. There is probably a better way of using this kind of elicitation method, but I was unable to find how to.

III. Recording Texts

My fieldwork also involved recording fluent texts from Nuuchahnulth speakers. This work is a valuable endeavor in itself, but it also allows speakers to give examples of these phenomena in a fluent context. Both linker and serial verb constructions occur naturally in running texts, although not at very high frequencies.

IV. Rephrasing Stories

The typical person is interested in language as a means of communication and not a set of abstract grammatical rules. Rephrasing traditional stories or short narratives is one way of trying to get natural versions of grammatical phenomena, especially if the original telling requires those grammatical phenomena. I tried three forms of retelling: (1) asking a speaker to summarize in a few sentences a text I

had previously gotten from them; (2) asking a speaker to summarize my own story; (3) asking a speaker to retell a traditional story they may not know well.

I did not have good results with (3), but I did better with (1) and (2). Not every consultant I worked with had the patience to resummarize their own text, but those that did could be persuaded to give a few-sentence quick summary. For retelling my own stories, I quickly found that the best way to do this when I gave a succinct story in English and asked for a retelling in Nuuchahnulth. I typically tried to embed the grammatical illustration at the end. For example, "I like to walk in the forest in the mornings. There are lots of bluejays in the forest. They must like me, because they follow me around the forest." The first sentence has the opportunity for three verbal expressions in a sentence: location, action, and time. The final sentence also has the possibility for a serial verb construction: a location and an action.

V. Forced Choice

Another tool I mixed with rephrasing stories was forced choice. This gives the speaker a few examples to choose from when trying to select the best way to describe something. In my experience, giving speakers a limited set of choices will also lead them to describe what makes one sentence worse, for example "It could mean something else..." which they would not volunteer without the choice present. If both choices are bad, consultants will also tend to give an explanation why.

One case where I used this was a situation where I am spending time with someone and I am clearly tired. I have a new baby, and I want to explain that the baby kept me up all night. The options were:

(23) ? ʔuusaḥimta naẏaqakʔi wikitaḥ ƛuł weʔič.

ʔuusaḥi=imt=ma·	naẏaqak=ʔi·	wik=(m)it=(m)a·ḥ	ƛuł	weʔič
because.of=PST=REAL.3	baby=ART	NEG=PST=REAL.1SG	good	sleep

? 'I didn't sleep well because of the baby.'

(24) ? ʔuusaḥiqḥita naẏaqakʔi wikitaḥ ƛuł weʔič.

ʔuusaḥi-(q)ḥ=(m)it=ma·	naẏaqak=ʔi·	wik=(m)it=(m)a·ḥ	ƛuł	weʔič
because.of-LINK=PST=REAL.3	baby=ART	NEG=PST=REAL.1SG	good	sleep

? 'I didn't sleep well because of the baby.'

In this case, my consultant strongly rejected (24), and this helped me understand how the because words interacted with the linker morpheme. Forced choice was very useful for determining the naturalness of linker constructions, and clear grammatical/ungrammatical judgments.

VI. Translation

I also used translation from English, which I consider a less preferable form of elicitation due to the possibility that the speaker will adopt English-like syntactic structures instead of Nuuchahnulth-like structures. However, some speakers were most comfortable with this kind of elicitation task. With one speaker, we worked slowly over a couple of sessions through an abridged translation of The Little Prince.

There were other shorter versions of this kind of elicitation. For instance, "We are going to go camping. I want the children to help their mother. I want them to pack. I want them to carry the luggage. What should I tell them?" The purpose of this was to get a command form, which is always marked with second position inflection, with a serialized verb construction where the verbs must necessarily share the command mood. The construction would minimally have two (at least pragmatically temporally) sequential verbs and perhaps the benefactive verb to express "for your mother."

VII. Grammatical judgments

The final elicitation technique was straight grammatical judgments. These were sentences I constructed and asked whether it sounded like something they or someone they knew would say, or if it sounded "off" in one way or another. I provided context when these came out of the blue. During elicitation sessions, I would also ask if I could rephrase what the speaker said by adding or removing an element, or moving the words around. These in-session rephrases were attempts to get grammatical/ungrammatical examples of the phenomena I was investigating.

2.1.4 Data Collation

I collated the examples of the grammatical phenomena I was interested in. These came from a set of stories I had previously interlinearized, from a randomly-selected subset of Nootka Texts stories, from my elicitation sessions with consultants, and from my transcriptions of elicited texts. I entered these examples into a spreadsheet that was tagged with the phenomenon that the example illustrated, and used this to help me find patterns in the grammatical data. To port this data to a test suite that the implemented grammar can run on, I simply had to export it to a comma-separated value file format and run a script that would generate a format readable by the implemented grammar (see §2.2).

2.2 Implementation through the DELPH-IN framework

My grammatical analysis has been through the DELPH-IN[9] framework, which is a computationally-implemented formalism of the head-driven phrase structure grammar (HPSG, Pollard & Sag 1994) using Minimal Recursion Semantics (MRS, Copestake et al. 2005). My implementation is built on a base that uses the Grammar Matrix (Bender et al. 2002, 2010).

My first step in the grammar development was to answer a questionnaire on the Grammar Matrix webpage, which generates a baseline grammar in the form of text files in the type description language (TDL). TDL is a series of declarative statements that describe grammatical rules, and the Grammar Matrix is a database of common grammatical rules across the world's languages. For instance, below I replicate a part of the TDL that describes the basic form of a head-complement rule.

```
basic-head-comp-phrase := head-valence-phrase & head-compositional &
              binary-headed-phrase &
  [ SYNSEM phr-synsem-min &
           [ LOCAL.CAT [ VAL [ SUBJ #subj,
                               SPEC #spec,
                               SPR #spr ],
                       POSTHEAD #ph,
                       HC-LIGHT #light ],
             LIGHT #light ],
    HEAD-DTR.SYNSEM [ LOCAL.CAT [ VAL [ SUBJ #subj,
                                        SPEC #spec,
                                        SPR #spr ],
                                  HC-LIGHT #light,
                                  POSTHEAD #ph ]],
```

[9] http://www.delph-in.net

```
    NON-HEAD-DTR.SYNSEM canonical-synsem ].
```

This rule first states that head-complement rules inherit all the constraints of `head-valence-phrase`, `head-compositional`, and `binary-headed-phrase`. I will gloss over what is present in these rules. Then this rule adds to the constraints of the rules it inherits from, stating that, minus the COMPS list (where complements are stored), the mother node inherits the valence and CAT (category) values of its head-daughter. The non-head-daughter is specified only to be some kind syntactic-semantic item. A further rule, the `basic-head-1st-comp-phrase`, inherits from the `basic-head-comp-phrase` and specifies what happens to the head-daughter's complements.

```
basic-head-1st-comp-phrase := basic-head-comp-phrase &
  [ SYNSEM.LOCAL.CAT.VAL.COMPS #comps,
    HEAD-DTR.SYNSEM.LOCAL.CAT.VAL.COMPS < #synsem . #comps >,
    NON-HEAD-DTR.SYNSEM #synsem ].
```

This rule states that the non-head-daughter is identified with whatever the first thing is on the head-daughter's complements list, and the mother node's complements list is reduced by one. In the case where the head-daughter only has a complements list with one item on it, the value `#comps` above will be a null element, and the mother node will have an empty comps list. This means that that node is no longer looking for any complements.

All of the above rule specifications are from the Grammar Matrix, and part of what is drawn on when the system generates an output grammar based on a user's answer to questions. So far the `basic-head-1st-comp-phr` says nothing about whether the head or non-head appears first. In my generated grammar, I have a `head-comp-phrase` that inherits from both the `basic-head-1st-comp-phrase` above, as well as the `head-initial` constraint, which simply says that the head is the leftmost element in the structure. Together with a few other constraints, this defines the basic head-complement rule in my Nuuchahnulth grammar.

Once this output from the Grammar Matrix was generated, I could then develop my own, more complex syntactic analyses. This process included generating type hierarchies and lexical entries as well. For instance, below is my definition for a second position clitic lexical item:

[[TODO: Update this]]

```
2nd-pos-clitic := lex-item &
  [ SYNSEM [ LOCAL.CAT [ HEAD verb & [ AUX +,
                         MOD <> ],
             VC -,
             VAL [ SUBJ.FIRST #subj ,
                   COMPS < #comps >,
                   SPR < >,
                   SPEC < > ]]],
    ARG-ST < #comps &
         [ OPT -,
           L-PERIPH +,
           LOCAL [ CAT [ HEAD verb &
                         [ AUX - ],
                         VAL.SUBJ.FIRST #subj ]]] > ].
```

This rule states that second position clitics are lexical items that are auxiliaries, and have a subject which is equivalent to their complement's subject (the complement being the item they attach to). This rule is my own, and not generated by the Grammar Matrix.

[[TODO: add section about CLIMB? Example TDL??]]

I have limited the scope of my work in two major ways. Firstly, I am not modeling the morphophonology. There are two reasons for this: Morphophonology is theoretically separate from morphosyntax, and the DELPH-IN tool sets are focused entirely on the morphosyntax. Because this is a project modeling multi-predicate constructions, the morphophonology is also not the most relevant component of the grammar. What this means is that a sentence like *ʔuumaćuk̓ʷaƛaḥ quʔušin* 'I am going to talk about Raven' is represented in the grammar in its already-segmented form, "ʔu-L.maćuk =!aƛ=(m)aˑḥ quʔušin."

I am also not separating dialect features into different grammatical models. My data comes from many different dialects of Nuuchahnulth, which each have different morphemes and slightly different grammatical rules. In my grammar's lexicon, I have simply entered all dialect variations. This means that on generation, the grammar is happy to mismatch morphology from different dialects, which is an overgeneration. A larger project would catalog this information by dialect in a larger metagrammar which could then produce separate grammars targeting each dialect. While worthwhile, this project was set aside so I could focus on the multi-predicate constructions.

Development was done against a test suite of example sentences. These included both grammatical and ungrammatical examples. For the basic components of the grammar, I used simple example sentences from stories or sessions with consultants. Many of the ungrammatical examples for basic clauses were only vetted by me as ungrammatical, but I have a high degree of certainty for their ungrammaticality. For the phenomena under investigation, I used only grammatical examples from my elicitation and corpora work, and ungrammatical examples form my elicitation sessions. These came from my collated data (§2.1.4), which was loaded into a `[incr tsdb()]` database (Oepen 2001). This test suite of sentences could be run against each version of the implemented grammar and checked for changes to the parse coverage. Beyond parsing/not-parsing, each example sentence was tested for semantic faithfulness. Semantic validation has to be done manually, but regression tests allowed for parsing results to be compared with previous iterations of the grammar rather than independently reverified every time the grammar changed.

I have focused so far on the parsing component of the grammar. Future work will involve focusing on generation, for which the grammatical tool sets I have used are descriptively adequate. The challenges here involve restricting dialect variation, as mentioned above, as well as restricting certain second position elements which may recurse (an issue explored in more depth in Bender 2010). These issues represents avenues for future research and do not affect the validity of the analyses presented here.

The result of the implemented grammar is a series of files that detail the grammatical rules, the lexicon, and rules for generation. The format for most of these files is TDL, which is a series of grammatical descriptions which are equivalent to HPSG attribute-value matrices. The regression tests in `[incr tsdb()]` (Oepen 2001) are also outputted to readable databases which show the resulting coverage of the grammar run over test cases. All of these materials are available at [[TODO: github repo]].

3 Serial Verbs

In this section I will introduce what I mean when I refer to serial verb constructions (SVCs) in Nuuchahnulth (§3.1), give the data on the construction (§3.2), and finally my analysis as implemented in

my grammar (§3.3).

3.1 Serial Verb Definition

The definition of serial verb is somewhat contested. In their typological survey, Aikhenvald & Dixon (2006) give several definitions, some of which conflict or overlap. Among their key proposed criteria is multiple verbs that (i) are monoclausal; (ii) from a "single predicate"; (iii) form a "single event"; (iv) form one unit phonologically; (v) are negated singly.

Most of these definitions are problematic, however. Aikhenvald & Dixon give no clear definition for a single predicate or a single event. Without a formal semantic representation, these are left vague, and for the most part a single predicate (when it is not synonymous with a single event) seems to come down to monoclausality. While serial verbs may be phonologically connected, they give several examples where the serial verbs are separated by intervening words (such as a direct object), and give instances of (what they term) serial verbs where one verb is negated while the other is not.

Butt (1995) gives an analysis of serialization in Urdu within the structure of Lexical-Functional Grammar (LFG). Since her work is grounded in a specific analysis of a specific language, Butt can be more specific in the definition of a serial verb. A key component of Butt's analysis is the notion of a "complex predicate," which is the creation of a new atomic unit of meaning from two separate words. The two components of a complex predicate can have a hierarchical relation in the syntax of the language. The semantic relation for the word 'write' might be WRITE(x, y), but when combined with the permissive, the new semantic relation is LET-WRITE(x, y, z), with a syntactic subordination. The predicate composition has created a new, higher-order relation with a different number of arguments, which is necessary in the event that there is evidence (as in Urdu) that the combined verbs have a larger number of arguments than either of the individual verbs.

There are reasons to disprefer this kind of analysis, if possible. One is that this form of complex predicate makes semantic composition much more difficult to model. In the typical lexicalist framework, each content morpheme is associated with an elementary predication, which is a shorthand for the 'meaning' of that morpheme, conventionally written as the morpheme in upper-case letters. This convention is for human readability: we could easily label word meanings as MEANING1647, MEANING1648, etc., with no loss of specificity. Butt's analysis creates a situation where there is a new mathematical operation in the semantic representation: 'let' LET + 'write' WRITE = LET-WRITE. Despite the similarity in labels, there is no formal relationship between these three meaning representations except by that equation, just as if the equation had been MEANING308 + MEANING2119 = MEANING8780. Even though the meaning is in fact strictly semantically compositional, the meaning representation of the "complex predicate" is non-compositional in the model with respect to its member verbs.

In some contexts, this is not necessarily a bad thing. Some sort of arbitrariness like this could be used to model idioms, for example [[TODO: find keystone literature on idiom & multi-word expression from 100 things book]], where individual lexical meanings are non-compositional. However, when this kind of combination is productive (as in the case of serialization), it is preferable not to introduce such semantic non-compositionality, or one ends up with a list of semantic equations, as above, which is nearly the size of the set of verbs in the lexicon (if not larger).

In LFG, the elementary predication of a word is linked to the number of its arguments. That is, the meaning of 'write' isn't merely WRITE, but WRITE(x, y). In this framework, to add an argument to a predication, it is necessary to change the predication itself. In MRS (Copestake et al. 2005), the semantic meaning and its arguments are separated from each other. That is, the meaning of 'write' is schematized

as below:

$$\begin{bmatrix} \text{PRED} & \text{WRITE} \\ \text{ARG0} & e \\ \text{ARG1} & x \\ \text{ARG2} & y \end{bmatrix}$$

In this way, it is possible to separately alter the number of arguments of the predication WRITE without having to create a new predication. This is something the formalism shares with Neodavidsonian representations (Parsons 1990). This difference between the representation Butt uses and and MRS semantic representations will allow me to maintain strict semantic compositionality in my analysis of serial verbs in Nuuchahnulth.

Serial verbs are not clearly defined in the literature, and attempts to generate cross-linguistic definitions quickly run into problems. Even monoclausality, so central to Aikhenvald & Dixon (2006), is thrown out in Butt (1995), who gives good reasons for syntactic subordination in a structure that otherwise falls into the umbrella of a serialization construction. I will use a very narrow definition of a serial verb construction for Nuuchahnulth. Any clause containing two verbs without an overt coordinator is a clause containing a "serial verb construction." The structure of Nuuchahnulth is such that determining the boundaries of a clause is relatively straightforward. Each matrix and dependent clause is marked with a second-position clitic, and so the boundaries of a clause are fairly easy to determine.[10] Because of the restriction that serial verb constructions lack an overt coordinator, constructions containing a linker morpheme (§4) does not count as SVCs. I am strictly defining SVCs in Nuuchahnulth on syntactic grounds, and do not involve semantics in any way.

3.2 Data

3.2.1 Semantic Types of Serial Verb Constructions

Descriptively, I categorize observed serial verb constructions into five broad semantic types. These types are not motivated a priori by any external typological theories or a commitment to these categories, but an attempt to make sense of my data. I grouped constructions by words with identical syntactic behavior and tried to create groupings with broad semantic similarities.

I. Manner and Action

The broadest semantic type of SVC links actions and manner. By "manner" what I mean is words that express intention of a main action, or clarify or specify that main action in some way. In Nuuchahnulth, this is typically expressed verbally. I include in this category manner of motion (e.g., go + walk as in 25), emotional affect (e.g., feel-sorry + make-pathetic as in 26), some kinds of adverbial-like expressions using semantically light verbs like "do" and "go ahead" (e.g., only-do + lie-down as in 27, and go-ahead + go as in 28), and metaphoric motion and action (e.g., go-back + become-alive as in 29).

[10] The one exception to this is that the third-person neutral mood is null-marked. For this reason, I will use examples that are not in this person-mood combination.

(25) ʔuucuy̓ukẇiɬasaḥ yaacuk ċuumaʕas .
ʔuucuy̓uk-ẇiɬas=(m)aḥ yaacuk ċuumaʕas
go.to.DR-going.to=REAL.1SG walk.DR Port.Alberni
'I'm going to walk to Port Alberni.' (**B**, Bob Mundy)

(26) wiḵ̓iis x̣ax̣aał ɬaakʷiił siy̓a.
wik=!iˑs x̣ax̣aał ɬakʷ-L.(č)iił siy̓a
NEG=CMMD.2SG>1SG feel.sorry pathetic-make 1SG
'Don't feel sorry for me, mistreating me.' (**C**, *tupaat* Julia Lucas)

(27) ʔanisɬintwaʔš ɬawiłšƛ̓.
ʔani-sɬ=int=waʔš ɬawił-šiƛ̓
only-do=PST=HRSY.3 lie.down-MO
'He just laid down.' (**Q**, Sophie Billy)

(28) nay̓iiʔaḵ̓aƛ̓in kuẇiła wałaak.
nay̓iiʔak=!aƛ̓=(m)in kuẇiła wałaak
immediately=NOW=REAL.1PL go.ahead go.DR
'We immediately went ahead and went.' (**B**, Marjorie Touchie)

(29) huʔacačiʔaaqƛ̓suuk tiičačiƛ̓.
huʔa-ca-čiƛ̓=!aaqƛ̓=suuk tiič-°ačiƛ̓
back-go-MO=FUT=NEUT.2PL live-IN
'You will come back to life.' (**C**, *tupaat* Julia Lucas)

This kind of SVC can "stack" beyond coordinating just two verbs, to at least three.

(30) ʔanasiłaʔi kuẇiła ʔucačiƛ̓ makuʔał.
ʔana-siła=ʔiˑ kuẇiła ʔu-ca-čiƛ̓ makuʔał
only-do=CMMD.2SG go.ahead X-go.to-MO store
'Only go to the store.' (**C**, *tupaat* Julia Lucas)

(31) huʔacačiƛ̓ẇiɬasaḥ šiiƛ̓uk wałaak yuułuʔiłʔatḥ.
huʔa-ca-čiƛ̓-ẇiɬas=(m)aḥ šiiƛ̓uk wałaak yuułuʔiłʔatḥ
back-go-MO-going.to=REAL.1SG move.house.DR go Ucluelet-live.at
'I'm going to move back to Ucluelet.' (**Q**, Sophie Billy)

It is possible for one of the verbs (and its object) to interrupt the VP of the other verb, as in (32, 33).

(32) ʔuucɬiiḥs ƛ̓iḥaa Queens Cove.

ʔuucɬiiḥ=s	ƛ̓iḥ-aˑ	Queens	Cove
go.to.DR=STRG.1SG	drive-CT	Queens	Cove

'I am driving to Queens Cove.' (**N**, Fidelia Haiyupis)

(33) hiniicintiisʔinɬ ʔucičƛ̓ ciquwɬi ɬaatn̓aʔiskqs.

hina-iic=int=iis=ʔinɬ	ʔu-ci-čiƛ̓	ciq-uwɬi	L.<t>-ɬaǹa=ʔis=uk=qaˑs
EMPTY-carry=PST=WEAK.1SG=HABIT	X-go.to-MO	pray-building	PL-child=DIMIN=POSS=DEFN.1SG

'I would always take my children to church.' (**Q**, Sophie Billy)

The verbs in this type of SVC, for most speakers, must agree in perfectiveness. Nuuchahnulth has a great many verbal aspect markers which follow the root, but they can be broken into two categories: perfective aspect (momentaneous and inceptive) and imperfective aspect (continuative, durative, repetitive, iterative, and graduative). The requirements on SVC aspectual agreement only seem to extend to the level of perfective vs imperfective.

(34) ʔuucuy̓ukẇiɬass yuułuʔiɬʔatḥ yaacuk.

ʔuucuy̓uk-ẇiɬas=s	yuułuʔiɬ-ʔatḥ	yaacuk	
go.DR-going.to=STRG.1SG	Ucluelet-live.at	walk.DR	

'I'm going to walk to Ucluelet.' (**C**, *tupaat* Julia Lucas)

(35) *ʔuucuy̓ukẇiɬass yuułuʔiɬʔatḥ yaacšiƛ̓.

ʔuucuy̓uk-ẇiɬas=s	yuułuʔiɬ-ʔatḥ	yaacšiƛ̓	
go.DR-going.to=STRG.1SG	Ucluelet-live.at	walk.MO	

Intended: 'I'm going to walk to Ucluelet.' (**C**, *tupaat* Julia Lucas)

(36) ƛ̓iḥaamitniš siy̓a łuucm̓uupukqs waałšiƛ̓.

ƛ̓iḥ-aˑ=(m)it=niˑš	siy̓a	łuučm̓uup=uk=qs	wał-šiƛ̓-LS	
drive-CT=PST=STRG.1PL	1SG	sister=POSS=DEFN.1SG	go.home-MO-GR	

'We were driving home in the car.' (**C**, *tupaat* Julia Lucas)

(37) *wałšiƛ̓ẇiɬasniš ƛ̓iḥaa.

wał-šiƛ̓-ẇiɬas=niˑš	ƛ̓iḥ-aˑ
go.home-MO-going.to=STRG.1PL	drive-CT

Intended: 'We will drive home.' (**C**, *tupaat* Julia Lucas)

However, for one of my consultants, Sophie Billy, who is the youngest speaker, the only Checkleseht speaker I worked with, and typically the most innovative in her speech patterns, the verbs in this kind of SVC may differ in aspect. I do not know if this is a Checkleseht feature, a Kyuquot-Checkleseht feature, a feature of her generation, or a feature of her idiolect. But this pattern is productive for her.

(38) ʔucičƛsiš šiiƛuk mituuni.
ʔu-ci-čiƛ=si·š šiiƛuk mituuni
x-go-MO=STRG.1SG move.house.DR Victoria
'I moved to Victoria.' (**Q**, Sophie Billy)

(39) ʔuucƫiiḥsiš šiiƛuk mituuni.
ʔuucƫiiḥ=si·š šiiƛuk mituuni
go.DR=STRG.1SG move.house.DR Victoria
'I moved to Victoria.' (**Q**, Sophie Billy)

II. Location and Action

Perhaps the most common semantic type of serialization is location-action. Most descriptive locations in Nuuchahnulth are verbs, 'be at a place' and locations are simply juxtaposed with the action performed there. This strategy is used for transitive *hił* 'be at' as well as intransitive locations like *hitaas* or *ƛ̓aaʔaas* 'be outside' and *hitinqis* 'be at the beach.'

(40) hiłʔii wiinapuƛ.
hił=!i· wiinapuƛ
be.at=CMMD.2SG stop.MO
'Stop there.' (**B**, Bob Mundy)

(41) hitaasitaḥ ciiqciiqa.
hitaas=(m)it=(m)a·ḥ ciq-LR2L.a
be.outside=PST=REAL.1SG speak-RP
'I was outside speaking.' (**B**, Bob Mundy)

As with Type I, is possible in this construction for the transitive location verb *hił* 'be at' to be split from its object by the other verb (42). It is also possible for the location word can also be the interrupting element (43).

(42) hiłqiimitʔišʔaał huuxsʔatu nučii.
hił-qii=(m)it=ʔi·š=ʔaał huuxsʔatu nučii
be.at-on.top=PST=STRG.3=HABIT rest.DR mountain
'He rests on top of mountains.' (**N**, Fidelia Haiyupis)

(43) hiłqiiʔaƛin ṅaacsiičiƛ čums nučii.
hił-qii=!aƛ=in ṅaacs-ᵒi·čiƛ čums nučii
be.at-on.top=NOW=STRG.1PL see-IN bear mountain
'We saw a bear (we being) on top of the mountain.' (**N**, Fidelia Haiyupis)

Unlike Type I SVCs, there is no requirement that the verbs match in their aspect. This is partly because most locatives do not inflect for aspect. For the basic verb *hił* 'be at' there is no perfective form of *hiłšiƛ*, and *hił* can serialize with both perfective (40) and imperfective verbs (42). There exist perfective forms for some of the other location words, for instance *hitinqsaƛ* 'go to the beach' from *hitinqis* 'be at the beach.' However, there is no requirement for aspectual agreement here, as these location verbs can serialize with both perfective (**??**) and imperfective verbs (41).

Unlike Type I verbs, there is a strict ordering requirement. The location verb must always come before the action verb (44, 45).

(44) hitaasitaḥ ciiqciiqa.
hitaas=(m)it=(m)aˑḥ ciq-LR2L.a
outside-PST=REAL.1SG speak-RP
'I was speaking outside.' (**B**, Bob Mundy)

(45) *ciiqciiqamitaḥ hitaas.
ciq-LR2L.a=(m)it=(m)aḥ hitaas
speak-RP=REAL.1SG outside-PST
Intended: 'I was speaking outside.' (**B**, Bob Mundy)

(46) hiłʔaƛin mamuuk wałyuuʔakqs.
hił=!aƛ=in mamuuk wał-yuu=ʔak=qaˑs
be.at=NOW=STRG.1SG work.DR be.home-RES=POSS=DEFN.1SG
'We are working at my home.' (**Q**, Sophie Billy)

(47) *mamuukƛ̓in hiɬ wałyuuʔakqs.
mamuuk=!aƛ=in hił wał-yuu=ʔak=qaˑs
work=NOW=STRG.1SG be.at be.home-RES=POSS=DEFN.1SG
Intended: 'We are working at my home.' (**Q**, Sophie Billy)

(48) ƛ̓aaʔaasči ʕaaqʕaaqa.
ƛ̓aaʔaas=či ʕaq-LR2L.a
outside=CMGO.2SG yell-RO
'Go yell outside.' (**N**, Fidelia Haiyupis)

(49) *nunuukči ƛaaʔaas.
nunuuk=či ƛaaʔaas
sing.DR=CMGO.2SG outside
Intended: 'Go sing outside.'[11] (**N**, Fidelia Haiyupis)

One of my speakers, *tupaat* Julia Lucas did accept, under elicitation and after dealing with many such constructions, sentences like (45, 47, 49). However, she has never produced utterances of this type

[11](49) can be "saved" by adding a linker to the location, i.e. *nunuukči ƛ̓aaʔaasḥ*. This creates a new type of construction, which I will discuss in §4.

in any texts I have collected from her. Julia is a language instructor, and my interpretation is that she was being accommodating toward my bad Nuuchahnulth at the margins of grammar in her role as a language revitalizer.

This restriction on location-action serialization can be interpreted as a grammaticalization of a larger preference in Nuuchahnulth for modifying expressions to precede what they modify. For instance, adverbs will preferentially precede the verb (and speakers will correct themselves and others by moving adverbs before to a verb). But unlike this type of serialization adverbs can in the right circumstances occur post-verbally.

III. Adpositive-like verbs

A fuller discussion of adpositive-like words will have to wait for §4.2.3. It is enough here to mention that, according to the analysis in (Woo 2007), a series of words with meanings that in English are expressed with prepositions are, in Nuuchahnulth, expressed with verbs (50, 51). This includes verbs with basic commitive, benefactive, and instrumentive meanings. These constructions have the same property of the above SVCs, where an intransitive verb may "interrupt" a transitive verb (in this case, the adpositive-like verb) and its object (52).

(50) hiinasinƛayaʔiš haẇacsaćumʔi ʔuuḥẇał kʷaacsaćum.
hiinasinƛ-aya=ʔiˑš haẇacsaćum=ʔiˑ ʔu-L.ḥẇał kʷaacsaćum
climb-CT=STRG.3SG table=ART x-use chair
'Using the chair he climbed onto the table.' (**N**, Fidelia Haiyupis)

(51) ʔuupaaɬẇiɬasniš ẏukʷiiqsu ʔucačiƛ Campbell River.
ʔuupaaɬ-ẇiɬas=niˑš ẏukʷ-iˑqsu ʔu-ca-čiƛ Campbell River
with-going.to=STRG.1PL younger.sibling-relation x-go.to-MO Campbell River
'I'm going with my younger sister to Campbell River.' (**C**, *tupaat* Julia Lucas)

(52) ʔucḥins mamuuk Trudeau.
ʔu-cḥin=s mamuuk Trudeau
x-do.for=STRG.1SG work.DR Trudeau
'I'm working for Trudeau.' (**N**, Fidelia Haiyupis)

None of the adpositive-like verbs inflect for aspect, and in this way are similar to the locative verb *hiɬ*. Like *hiɬ* and like Type II SVCs, adpositive-likes can serialize with both perfective (51, 53) and imperfective verbs (50, 52). Unlike Type I and II SVCs, the "interrupting verb phrase" cannot be a transitive verb with its argument.

(53) ʔucačiʔaƛukʷitaḥ ɬaṅeʔis ċuumaʕas ʔukʷink yaqsčaʕinʔitq.
ʔu-ca-čiƛ=!aƛ=uk=(m)it=(m)aḥ ɬaṅa=ʔis ċuumaʕas ʔu-(č)ink yaq-sčaʕin=ʔiˑtq
x-go-MO=NOW=POSS=PST=REAL.1SG child=DIMIN Port.Alberni x-with who-friendly=DEFN.3
'My child is going to Port Alberni with his friend.' (**B**, Bob Mundy)

(54) *ʔukʷinƛ̓aƛukʷitaḥ ʔucačiƛ̕ ƚaṅeʔis yaqsčaʕinʔitq.
ʔu-(č)ink=!aƛ̕=uk=(m)it=(m)aḥ ʔu-ca-čiƛ̕ ƚaṅa=ʔis yaq-sčaʕin=ʔiˑtq
x-with=NOW=POSS=PST=REAL.1SG x-go-MO child=DIMIN who-friendly=DEFN.3
Intended: 'My child is going with his friend.' (**B**, Bob Mundy)

IV. Transitive-Intransitive Repetition

Nuuchahnulth has a series of words with similar or identical meanings that differ only or mostly in transitivity. These include transitive and intransitive eat (*-!iis* and *haʔuk*, as in 55) and cry and cry for (*ʕiḥak* and *ʔuʔuu̓uk*, as in 56). Speakers frequently will use both versions in a sentence.

(55) ʔuʔiiċaʔƛ̕ haʔuk.
ʔu-!iic=!aƛ̕=!iˑ haʔuk
x-eat=NOW=CMMD.2SG eat
'Eat it!' (**Q**, Sophie Billy)

(56) ʕiiḥakitʔiš ʔuʔuu̓uk ʔumʔiiqsakʔi.
ʕiḥ-ak-LS=(m)it=ʔiˑš ʔuʔuu̓uk ʔumʔiiqsu=ʔak=ʔiˑ
cry-DR-GRAD=PST=STRG.3 cry.for mother=POSS=ART
'She cried for her mother.' (**C**, *tupaat* Julia Lucas)

While *waa* 'say' can be used as a transitive quotative, it can be used intransitively as well, similar to English *speak*. It can enter into this kind of SVC in this capacity, doubling with another verb of speaking (57). This characteristic doubling can also occur with *ʔiiqḥuk* 'tell' (58).

(57) waaʔaƛ̕iič ʔuumaċ ʔuušḥ̓imsukqs.
waa=!aƛ̕=ii=č ʔuumaċ ʔuuš-ḥ̓ims=uk=qas
say=NOW=WEAK.3=HRSY talk.about some-be.related.or.friends=POSS=DEFN.1SG
'I heard he was talking about my friends or family.' (**Q**, Sophie Billy)

(58) ʔuḥʔaƛ̕iič ṅuẇiiqskqs ʔuumaċkʷ ʔiiqḥuk ʔumʔiiqskqs.
ʔuḥ=ʔaƛ̕=ii=č ṅuẇiiqsu=ʔak=qaˑs ʔuumacuk ʔiiqḥuk ʔumʔiiqsu=ʔak=qaˑs
be=NOW=WEAK.3=HRSY father=POSS=DEFN.1SG talk.about tell mother=POSS=DEFN.1SG
'It was my father who told my mother about it.' (**Q**, Sophie Billy)

Like the other SVCs, the transitive verb can be separated from its object.

(59) ʔuʔiisʔaƛ̕in haʔuk suuḥa.
ʔu-!iis=!aƛ̕=!in haʔuk suuḥa
x-eat=NOW=CMMD.1PL eat spring.salmon
'Let's eat spring salmon!' (**B**, Bob Mundy and Marjorie Touchie)

As with Type I serialization, aspectual agreement is required (60-62).

(60) haʔukẇiɬasin ʔuʔiis suuḥa.
haʔuk-ẇiɬas=in ʔu-ɬiis suuḥa
eat-going.to=REAL.1PL X-eat spring.salmon
'We're going to eat spring salmon.' (**B**, Bob Mundy and Marjorie Touchie)

(61) *haʔukẇiɬasin ʔuʔiisšiƛ suuḥa.
haʔuk-ẇiɬas=in ʔu-ɬiis-šiƛ suuḥa
eat-going.to=REAL.1PL X-eat-MO spring.salmon
Intended: 'We're going to eat spring salmon.' (**B**, Bob Mundy and Marjorie Touchie)

(62) haʔukšiʔaƛ̓in ʔuʔiisšiƛ suuḥa.
haʔuk-šiƛ=ɬaƛ=in ʔu-ɬiis-šiƛ suuḥa
eat-MO=NOW=REAL.1PL X-eat-MO spring.salmon
'We start eating spring salmon.' (**B**, Marjorie Touchie)

V. Sequential or Separable Action

In all the above types of serialization, the verbs are describing in some way "the same action" or something that is at least simultaneous. Type I and Type III both describe in some way the manner of an action (answering what-with, how, by what means, etc) or action simultaneity (carrying and walking). Type II serial verbs describe location, and Type IV describes literally the same action twice. When Aikhenvald & Dixon (2006) talk about serial verbs describing the "same event" I believe this is an attempt to capture the sort of unity seen in these (and other) types of serialization. When I model the semantics of these constructions (§3.3) I will preserve compositionality and thus the different verbs will each have separate semantic event variables, and so they are not the "same event" in this formal way. But in all these SVCs there is, at minimum, some kind of "meanwhile" interpretation applied to the two verbs, and this is not insignificant. When I turn to the modeling (§3.3, I will have to introduce a separate elementary predication for this "meanwhile" component.

The sequential/separable action subtype of SVC is different from the other serialization types. In these constructions, there is no interpretation of simultaneity and there is sometimes a (perhaps pragmatic) interpretation of sequentiality. This is by far the least common type of SVC, but speakers do produce them spontaneously. For instance, (63) is from an exhortative text, and immediately follows the command "Don't throw your clothes on the floor."

(63) sukʷiʔi ḵašsaap
suk-iƛ=ɬiˑ ḵaš-saˑp
hold-MO=CMMD.2SG put.away-MO.CAUS
'Take it and put it away.' (**C**, *tupaat* Julia Lucas)

When presented with a possible reordering (64), my consultant said it was in the wrong order, and didn't make sense.

(64) # ḱašsaapʔi sukʷiƛ̓
ḱaš-saˑp=!iˑ suk-iƛ̓
put.away-MO.CAUS=CMMD.2SG hold-MO
'Put it away, then take it.' (**C**, *tupaat* Julia Lucas)

This ordering effect is apparent in other constructions where one action leads to another. (65) was a sentence given by a consultant, and when I asked about (66) her response was that it sounded backwards.

(65) ʔucičiʔim pankuupa ẏakšiƛ̓ siičił.
ʔu-ci-čiƛ̓=!im pankuupa ẏak-šiƛ̓ si-L.(č)ił
X-go.to-MO=CMFU.2SG Vancouver appear-MO 1SG-do.to
'Come to Vancouver and see me.' (**Q**, Sophie Billy)

(66) ?? ẏakšiʔim siičił ʔučič̓ƛ̓ pankuupa.
ẏak-šiƛ̓=!im si-L.(č)ił ʔu-ci-č̓ƛ̓ pankuupa
appear-MO=CMFU.2SG 1SG-do.to X-go.to-MO Vancouver
Intended: 'Come to Vancouver and see me.' (**Q**, Sophie Billy)

This construction can also be used to describe planning actions (67) or giving formal instructions to children (68).

(67) ƛ̓iptqšiʔin ḱanisẏakukqin wałaak hitinqisʔi.
ƛ̓iptq-šiƛ̓=!in ḱanis-ẏak=uk=qin wałaak hitinqis=ʔiˑ
pack-MO=CMMD.1SG camp-for=POSS=DEFN.1SG go at.beach=ART
'Let's pack our camping stuff and go to the beach.' (**B**, Marjorie Touchie)

(68) naʔaataḥʔatmaʔaała nunuukʔi ṅaacsa huyaałʔi.
naʔaataḥ=!at=maˑ=ʔaała nunuuk=ʔiˑ ṅaacsa huyaał=ʔiˑ
listen=PASS=REAL.3=HABIT sing=ART watch dance.DR=ART
'One listens to the singing and watches the dancing.' (**B**, Marjorie Touchie)

It is important to note that the sequential interpretation of (68) is not required: it is possible (indeed, likely) that the children will be watching dancers and listening to singing at the same time. This sentence can be used to describe both eventualities: listening to a song, followed by watching dancing, or listening while also watching.

It is possible for both verbs in this kind of SVC to share a single direct object. [[TODO: Could below be recategorized as another type?]]

(69) naʔaataḥʔaaqƛ̓iʔaał ʔiisak ʔuukʷił ʔaʔiič̓im.
naʔaataḥ=ʔaaqƛ̓=!iˑ=ʔaał ʔiisak ʔu-L.(č)ił ʔaʔiič̓im
listen.DR=FUT=CMMD.2SG=HABIT respect.DR X-do.to elder.PL
'Listen to and respect the elders.' (**C**, *tupaat* Julia Lucas)

As with other SVCs, it is possible to get more than two verbs in this construction.

(70) naʔaatḥiʔ ṅaacsuuḥ huuḥtikšiiḥ.

naʔaatḥ=ʔiˑ ṅaacsuuḥ huuḥtikšiiḥ
listen.DR=CMMD.2SG watch.DR learn.MO
'Listen, watch, and learn.' (**Q**, Sophie Billy)

Aspect does not have to agree, which makes sense if this SVC has a sequential (or at least, not necessarily simultaneous) interpretation. The examples below show the verbs in this construction disagreeing (71) and then agreeing (72) in aspect. There is a slight difference in meaning.

(71) ʔuʔukʷaqḥʔi ƛ̓iptqšiƛ̕ hiniic muč̓ičtup.

ʔuʔukʷaqḥ=!iˑ ƛ̓iptq-šiƛ̕ hina-iic muč̓ič=(s)tuˑp
on.your.own=CMMD.2SG pack-MO EMPTY-carry.DR clothing-kind
'Pack and carry your own clothes.' (**C**, *tupaat* Julia Lucas)

(72) ʔuʔukʷaqḥʔi ƛ̓iptqšiƛ̕ hiniicšiƛ̕ muč̓ičtup.

ʔuʔukʷaqḥ=!iˑ ƛ̓iptq-šiƛ̕ hina-iic-šiƛ̕ muč̓ič-(s)tup
on.your.own=CMMD.2SG pack-MO EMPTY-carry-MO clothing-kind
'Pack and take along your own clothes.' (**C**, *tupaat* Julia Lucas)

While object sharing is permitted (70), Type V SVCs do not allow VPs to be interrupted, as seen in Types I-IV.

The context for (73–75) is sitting outside, eating a picnic that you brought in a pail. A dog comes to eat your food, you pick up your food and chase it off. The context entails an ordering of the actions (first picking up the bucket, then chasing away the dog), but it is possible to give the verbs in either ordering, (73) was suggested by my consultant, and I suggested (74) and (75).

(73) cassaaps ʕiniiƛ̕ č̓axʷaciis.

cas-saˑp=s ʕiniiƛ̕ č̓axʷac-iis
chase-MO.CAUS=STRG.1SG dog bucket-hold.DR
'I chased the dog, (I) carrying the bucket.' (**C**, *tupaat* Julia Lucas)

(74) č̓axʷaciicsiš cassaap ʕiniiƛ̕.

č̓axʷac-iic=siˑš cas-saˑp ʕiniiƛ̕
bucket-hold.DR=STRG.1SG chase-MO.CAUS dog
'Carrying the bucket, I chased the dog.' (**C**, *tupaat* Julia Lucas)

(75) *cassaaps č̓axʷaciis ʕiniiƛ̕.

cas-saˑp=s č̓axʷac-iis ʕiniiƛ̕
chase-MO.CAUS=STRG.1SG bucket-hold.DR dog
Intended: 'Carrying the bucket, I chased the dog.' (**C**, *tupaat* Julia Lucas)

Finally, there are a few properties which span all constructions. Cross-serial dependencies are never possible (76, 77).

(76) ʔuuḥẃałʔiš kʷaacsaćum ƛaamaas-iƛ haẃacsaćumʔi.
ʔu-L.ḥẃał=ʔiˑš kʷaacsaćum ƛaamaas-iƛ haẃacsaćum=ʔiˑ
x-use=STRG.3 chair climb-MO table=ART
'Using a chair he climbed onto the table.' (**C**, *tupaat* Julia Lucas)

(77) *ʔuuḥẃałʔiš ƛaamaasiƛ kʷaacsaćum haẃacsaćumʔi.
ʔu-L.ḥẃał=ʔiˑš ƛaamaas-iƛ kʷaacsaćum haẃacsaćum=ʔiˑ
x-use=STRG.3 climb-MO chair table=ART
Intended: 'Using a chair he climbed onto the table.' (**C**, *tupaat* Julia Lucas)

Multiple types of serialization can cooccur in a clause. (78) is an example of Type V (separable action) serialization and Type III (adpositive-like) serialization in a single clause. As in the English, it is not obvious from the sentence alone whether the adpositive is scoping over both the previous verbs or just one, but for now it is sufficient to note that one type of serialization does not preclude later forms from attaching.

(78) ƛ̓iptqšiʔi hiniic muč̓ičtup ʔuʔatup ʔuumʔi.
ƛ̓iptq-šiƛ-!iˑ hina-iic.DR muč̓ič-(s)tup ʔuʔatup ʔuum-ʔi
pack-MO=CMMD.2SG EMPTY-carry clothing-stuff do.for mother-your.relation
'Pack and carry clothes for your mother.' (**C**, *tupaat* Julia Lucas)

3.2.2 Interaction with Valency Changing Operations

These serialization strategies can all interact with operations that change the verb's valency: in Nuuchahnulth the most common of these are the causative, the passive, and the possessor (under "possessor raising," Braithwaite 2003). What is unique about these three morphemes in Nuuchahnulth is that they are all part of the second position clausal clitic complex, which normally attaches to the first word of a clause and scopes over the clause as a whole. This makes their interaction with SVCs interesting and not a priori predictable. Does the valency operation affect both verbs in the SVC, or does it target just one? Leaving the possessor construction aside, I now look at how these operations interact with serial verb constructions.

All serialization strategies may have the causative attach to and affect the valence of one verb and not the other, as shown in (79) (Type I), where the causative only affects the semantics of the verb *ca* 'go' and not to the verb *ƛ̓ičiƛ* 'shoot'.

(79) ʔaḥʔaaʔaƛna ƛ̓ičiƛ ʔucaap ḥaa hupałʔi.
ʔaḥʔaaʔaƛ=naˑ ƛ̓i-čiƛ ʔu-ca=!ap ḥaa hupał=ʔiˑ
and.then=NEUT.1PL shoot-MO x-go=CAUS DDYN sun.or.moon=ART
'Then we shoot toward the moon.' (**C**, *tupaat* Julia Lucas)

It is also possible for the causal morpheme to affect both verbs in an SVC (80) (Type II). Here, the causative scopes over both verbs, altering the semantics of *ca* 'go', making it cause to go, and the semantics of *hił* 'be at', making it cause to be at. It is also possible for the causative to appear separately on each verb, as in (81) (Type I) and (82) (Type V).

(80) ʔućaaʔaṗat ɬuḥćiti hił ʔapẇinʔatʔi.
ʔu-ca=!ap ɬuḥćiti hił ʔapẇin=!at=ʔiˑ
x-go=caus head be.at shoulder=poss.inalien=art
'He put his head on his shoulder.' (**C**, *tupaat* Julia Lucas)

(81) ʔaḥʔaaʔaƛʔał hiłʔap ɬiqʷaasʔaṗaƛʔał ḥaakʷaaƛʔi Monica.
ʔaḥʔaaʔaƛ=ʔał hił=!ap ɬiqʷ-aas=!ap=!aƛ=ʔał ḥaakʷaaƛ=ʔiˑ Monica
and.then=pl be.at=caus sit-horizontal.surface=caus=now=pl young.woman=art Monica
'And then they made the young girl Monica sit on a chair.' (**C**, *tupaat* Julia Lucas)

(82) ʔuuwaʔaƛquuk č̓iṗatmił hašaḥsapsuuk ḵ̓ašsaap.
ʔu-L.waƛ=!aƛ=quuk č̓iṗatmił hašaḥ-saˑp=suuk ḵ̓aš-saˑp
x-find=now=pssb.2sg sea.serpent.scale precious-mo.caus=pssb.2sg put.away-mo.caus
'If you find a sea serpent scale, you treasure it and put it away.' (**C**, *tupaat* Julia Lucas)

I have already given an example where the passive scopes over both verbs in an SVC while appearing singly, in (68). Like the causative, it is possible for one verb to be marked with the passive and interpreted as such and the other not to be. This is both the case where one of the verbs is intransitive, as in (83)[12] and with two transitive verbs, where one receives a passive interpretation and the other does not, as in (84).

(83) ʔuḥʔats ʕiniiƛ ƛawiičiʔat kamitquk.
ʔuḥ=!at=s ʕiniiƛ ƛaw-°iˑčiƛ=!at kamitq-uk
be=pass=strg.1sg dog near-in=pass run-dr
'It was the dog that ran toward me.' (**C**, *tupaat* Julia Lucas)

(84) ʔaḥʔaaʔaƛsa huʔaas ṅaacsiičiƛ naani ʔuuḥẇałʔat naaniiłqḥ.
ʔaḥʔaaʔaƛ=sa huʔaas ṅaacs-°iičiƛ naani ʔuuḥẇał=!at naani-°ił-(q)ḥ
and.then=neut.1sg again see-in grizzly.bear use=pass grizzly.bear-inside.dr-link
'And again I saw a grizzly bear used, a grizzly bear indoors.' (**C**, *tupaat* Julia Lucas)

In a construction that is unique to the passive, as far as I know, it is also possible for the passive to appear on both verbs when it semantically only affects one of them. I suspect the range of verbs where this is possible is restricted, but don't know for sure. In (85), the passive attaches to perfective 'become near,' giving the meaning 'approach.' The other verb 'be at' is not passivized: its typical argument structure is that its subject (in this case "sister") is the figure and object (here, "Port Alberni") is the ground. (86) has the exact same structure, but the passive has been "copied" onto the second verb in the construction, without altering its subject/object relations. This is perhaps related to the status of the passive in Nuuchahnulth having "inverse-like" properties, as has been noted by previous scholars (Emanatian 1988; Braithwaite 2003).

[12]In (83) the passive also appears on the clefting copula *ʔuḥ*. Voice agreement is a required feature of clefts.

(85) ƛawiič̓ʔats ƚuuč̓muupukqs hił ċuumaʕaas.

ƛaw-°i·čƛ=!at=s	ƚuuč̓muup=uk=qas	hił	ċuumaʕaas
near-IN=PASS=STRG.1SG	sister=POSS=DEFN.1SG	be.at	port.alberni

'My sister came to visit at Port Alberni.' (**Q**, Sophie Billy)

(86) ƛawiič̓ʔats ƚuuč̓muupukqs hiłʔat ċuumaʕaas.

ƛaw-°i·čƛ=!at=s	ƚuuč̓muup=uk=qas	hił=!at	ċuumaʕaas
near-IN=PASS=STRG.1SG	sister=POSS=DEFN.1SG	be.at=PASS	port.alberni

'My sister came to visit at Port Alberni.' (**Q**, Sophie Billy)

Causative and passive morphemes in SVCs may scope over the entire construction or just the verb they attach to. In the case where the morpheme appears on the first word in the construction, the proper interpretation is constrained only by context. In the case of the passive, the passive may "copy" onto a later verb without affecting its argument structure.

3.2.3 Summary

I have used a very narrow definition of serial verb constructions (SVCs) in Nuuchahnulth: Any clause that contains two verbs without a coordinator, and where one verb is not clearly subordinating the other, is a serial verb construction. I have further broken this construction type into five semantic subtypes: (I) manner and action, (II) location and action, (III) adpositive-like verb and main verb, (IV) transitive-intransitive repetition, and (V) separable or sequential events.

For most speakers, Type I requires aspectual agreement of the verbs involved. Types II and III do not require aspectual agreement, but this may be due to an underspecification of aspect on adpositive and locative verbs. Types I-IV all allow one verb to be separated from its object, in a V1 V2 (Obj2) Obj1 pattern. [[TODO: may be a restriction on transitivity for Type III adpositive SVCs.]] Type V stands out in allowing aspectual mismatching, and disallowing this kind of object separation. It appears that modificational elements (such as location and manner) are preferred to come first.

As I turn to analysis, I will model these facts with three grammatical serial verb constructions: One which covers Types I and requires aspectual matching, one for Types I-IV, and one which covers Type V. I will model the semantics of Types I-IV as necessarily simultaneous, and account for the aspectual mismatching of Types II and III by underspecifying locatives and adpositives for aspect. Type V will be underspecified temporally, allowing the semantics of AND to give rise to sequential interpretations. [[TODO: There has definitely been work on the temporal pragmatics of and, cite that here.]]

3.3 HPSG Analysis

4 The Linker

The linker morpheme in Nuuchahnulth -(*q*)*ḥ*, like serial verb constructions (§3, is a method by which the language can combine multiple verbs into a single clause. In this section I will examine how this construction behaves and its differences from serialization.

4.1 Data

In this section I give my collected data on the linker morpheme. I present how the construction is used and draw some conclusions about how it behaves. Like with serial verbs, I will try to keep this section fairly theory-neutral, saving the specifics of an HPSG analysis for §4.3.

The morpheme -(*q*)*ḥ* is the last possible suffix on a word. It is typically pronounced as the sequence *qḥ* following a vowel or nasal, and otherwise as *ḥ*. The Central Ahousaht elder *tupaat* Julia Lucas almost always pronounces the linker as the full *qḥ* regardless of the phonological environment, with the exception of certain light verbs. I do not know if this reflects a sub-dialect of Ahousaht, or if this pronunciation is unique to her, but I transcribe her speech faithfully.

The suffix is translated as 'meanwhile' in Sapir & Swadesh (1939), and was first dubbed the "linker" by Adam Werle (*p.c.*), on the understanding that it "links" two predicates together. In some sense, it is coordinating two elements with each other, below the syntactic scope of the second position clitics. I will first look at the morphologicla attachment properties of this special coordinator (§4.1.1), followed by its syntactic properties (§4.1.2–4.1.7).

4.1.1 Attachment properties

The linker shows considerable flexibility in the stems it attaches to, attaching to nouns (87), adjectives (88), verbs (89), and adverbs (90), but not complementizers (91, 92).

(87) ɬuucmaqḥitqač̓aʔaaɬ taakšiƛ̓ p̓iišmita.

ɬuucma-(q)ḥ=(m)it=qač̓a=ʔaaɬ taakšiƛ̓ p̓iišmit-aˑ
woman-LINK=PST=INFR=HABIT always gossip-DR

'There was a woman who kept gossiping.' (**C**, *tupaat* Julia Lucas)

(88) t̓ikʷaamitwaʔiš čims ḥaaʔakqḥ.

t̓ikʷ-aˑ=mit=waˑʔiš čims ḥaaʔak-(q)ḥ
dig-DR=PST=HRSY.3 bear strong-LINK

'The bear was digging and strong.' (**C**, *tupaat* Julia Lucas)

(89) ciqink̓aƛ̓na ƛ̓iḥaaqḥ.

ciq-(č)ink=!aƛ̓=naˑ ƛ̓iḥ-aˑ-(q)ḥ
speak-with=NOW=NEUT.1PL drive-DR-LINK

'We talked while driving.' (**C**, *tupaat* Julia Lucas)

Context for (90): My friend is going bald. I'm also going bald but I don't look in the mirror much and haven't noticed.[13]

(90) y̓uuqʷaaqḥs ʕasqii ʔaanaḥi wik hinʔałšiƛ̓.

y̓uuqʷaa-(q)ḥ=s ʕasqii ʔaanaḥi wik hinʔał-šiƛ̓
also-LINK=STRG.1SG bald only NEG realize-MO

'I'm also bald but I don't know it.' (**C**, *tupaat* Julia Lucas)

[13]This scenario was constructed to mirror an example present in Sapir & Swadesh (1939).

(91) ʔuušcukʔisit ʔani ʔunaḥʔisitqa.
ʔuušcuk=ʔis=(m)it ʔani ʔunaḥ=ʔis=(m)it=qaˑ
hard=DIMIN=PST COMP small=DIMIN=PST=SUB
'It's a little hard (to do) because it's small.' (**B**, Bob Mundy)

(92) *ʔuušcukʔisit ʔaniqḥ ʔunaḥʔisitqa.
ʔuušcuk=ʔis=(m)it ʔani-(q)ḥ ʔunaḥ=ʔis=(m)it=qaˑ
hard=DIMIN=PST COMP-LINK small=DIMIN=PST=SUB
Intended: 'It's a little hard (to do) because it's small.' (**B**, Bob Mundy)

From only this data, the linker appears to distinguish morphologically between content and function categories. Another way of expressing this content/function division is by appealing to what can serve as a syntactic predicate in Nuuchahnulth (see 1). Nouns, adjectives, and verbs may all be predicative, and while adverbs are not syntactic predicates themselves, they along with their verb create a main predicate. I will return to the matter of adverbs in §4.1.6. Complementizers, on the other hand, are only connective material and cannot be the main predicate of a clause, nor can they be part of the predicative phrase. In following sections, I will refer to the predicate in linker constructions that hosts the linker as the "linked predicate" and the predicate that lacks it as the "unlinked" or "non-linked" predicate.

4.1.2 Clause Heading

A predicate with a linker attached may not head a matrix or dependent clause. I first give some evidence on the flexibility of the relative ordering of the linker, and then examine when they are and are not allowed in matrix and dependent clauses.

In a sentence with two predicates, one with the linker and one without, the ordering does not typically make a difference.[14] It is possible for either predicate in an utterance to host the linker, as in (93, 94).

(93) hitaasḥitaḥ ciiqciiqa.
hitaas-(q)ḥ=(m)it=(m)aˑḥ ciq-LR2L.a
be.outside-LINK=PST=REAL.1SG speak-RP
'I was speaking outside.' (**B**, Bob Mundy)

(94) ciiqciiqaqḥitaḥ hitaas.
ciq-LR2L.a-(q)ḥ=(m)it=(m)aˑḥ hitaas
speak-RP-LINK=PST=REAL.1SG be.outside
'I was speaking outside.' (**B**, Bob Mundy)

Just as either predicate in a construction may take the linker, the linker may occur either on the first (95) or second (96) predicate in the utterance.

[14]There are some cases where altering the ordering affects grammaticality judgments. I believe this has to do with a preference for the predicate with the linker attached to come first and, between two predicates, for certain semantic classes to host the linker over others. I address these in §4.1.8.

(95) ƛ̓aaʔaasḥintniš ciiqciiqa.

ƛ̓aaʔaas-(q)ḥ=int=niš ciq-LR2L.a

be.outside-LINK=PST=STRG.1PL speak-RP

'We were speaking outside.' (**N**, Fidelia Haiyupis)

(96) ciiqciiqamitniš ƛ̓aaʔaasḥ.

ciq-LR2L.a=mit=niˑš ƛ̓aaʔaas-(q)ḥ

speak-RP=PST=STRG.1PL be.outside-LINK

'We were speaking outside.' (**N**, Fidelia Haiyupis)

Although there is flexibility as to which predicate takes the linker, clauses may not be headed by a single predicate with a linker. This can be seen for main clauses in (97, 98) below.

(97) qiiʔiɬs ƛupkaaqḥ.

qii-°iɬ=s ƛupk-aˑ-(q)ḥ

long.time-indoors=STRG.1SG awake-DR-LINK

'I lay awake inside for a long time.' (**N**, *yuuɬnaak* Simon Lucas)

(98) *ƛupkaaqḥs qii.

ƛupk-aˑ-(q)ḥ=s qii

awake-DR-LINK=STRG.1SG long.time

Intended: 'I lay awake for a long time.' (**N**, *yuuɬnaak* Simon Lucas)

(98) has undergone two changes relative to (97): (i) the words have been rearranged, and (ii) the ending -°*iɬ*, a predicative location (Davidson, *forthcoming*) has been taken off the adverb *qii*. The former change should not affect the grammaticality of the sentence, as demonstrated in (95, 96). But the latter change creates an utterance with "linked" predicate followed by the syntactically non-predicative adverb *qii* (98). In contrast, (97) contains two full predicates. Because the adverb *qii* cannot be a syntactic predicate, (98) only has one predicative word with a linker morpheme, and no further predicate for that linker to coordinate with.

Like main clauses, a dependent clause may not be headed by a single predicate with a linker morpheme, as shown in (99, 100).

(99) ʔuuʃaqstuƛaḥ ʔanik hiɬ ʔaḥkuu.

ʔuuʃaqstuƛ=(m)aˑḥ ʔani=k hiɬ ʔaḥkuu

be.happy.MO=REAL.1SG COMP=2SG be.at D1

'I'm happy you're here.' (**B**, Bob Mundy)

(100) *ʔuuʃaqstuƛaḥ ʔanik hiɬḥ ʔaḥkuu.

ʔuuʃaqstuƛ=(m)aˑḥ ʔani=k hiɬ-(q)ḥ ʔaḥkuu

be.happy.MO=REAL.1SG COMP=2SG be.at-LINK D1

Intended: 'I'm happy you're here.' (**B**, Bob Mundy)

Although the word *hił* 'be at' frequently takes the linker in texts, it is ungrammatical in (100), where it is the sole predicate of the dependent clause. I was able to replicate a similar example with a Checkleseht speaker from the other end of the dialect continuum (101, 102).

(101) ẃaacsiičƛintiis ʔin hił čimsʔii maḥt́eeʔakʔitk.
ẃaacs-°iičƛ=int=(y)iis ʔin hił čims=ʔi· maḥt́ii=ʔak=ʔi·tk
see-IN=PST=WEAK.1SG COMP be.at bear=ART house=POSS=DEFN.2SG
'I saw there was a bear at your house.' (**Q**, Sophie Billy)

(102) *ẃaacsiičƛintiis ʔin hiłḥ čimsʔii maḥt́eeʔakʔitk.
ẃaacs-°iičƛ=int=(y)iis ʔin hił-(q)ḥ čims=ʔi· maḥt́ii=ʔak=ʔi·tk
see-IN=PST=WEAK.1SG COMP be.at-LINK bear=ART house=POSS=DEFN.2SG
Intended: 'I saw there was a bear at your house.' (**Q**, Sophie Billy)

From these examples, I conclude that the linker requires two predicates to coordinate. This means that the syntactic head of a clause cannot be a predicate with linker morphology. The head must either be the linker itself, or the predicate without linker morphology.

4.1.3 Sharing second position suffixes and clitics

Nuuchahnulth has a series of clausal second-position ebclitics, which include tense and subject-mood portmanteaus. In a linker construction, both prediccates share the same subject, mood, and tense.

(103) hiłḥʔum maḥt́iiʔakqs wiinapuƛ.
hił-(q)ḥ=!um maḥt́i·=ʔak=qs wiinapuƛ
be.at-LINK=CMMD.FUT.2SG house=POSS=DEF.1SG stop.MO
'Stop at my house.' (**N**, Fidelia Haiyupis)

The command portmanteau *=!um* in (103) syntactically scopes[15] over both predicates. My consultant did not accept this utterance as possibly meaning that someone else was stopping. If these clitics belong to the clause as a whole, which there is good independent reason to believe (Rose 1981:35–36, Woo 2007:42–50), the linker coordinates predicates below the level of the clause.

In addition to the clausal second-positions, there are some suffixes which I claim appear in a predicative second position (Inman 2018). [[TODO: Regurgitate a summary of the "predicate position" argument in the clause chapter!]] These include modals and, importantly, the linker itself. The modals in this predicative second position seem to be shared across linked predicates, in a similar fashion to the clitics.

Context for (104): I am taking a friend home and we are leaving a gathering.

[15]Because of the utility of the concept of scoping in this discussion, I will use the word "scope" from here on to refer to a syntactic element that has an effect over another syntactic element. This should not be confused with scopal semantics.

(104) waałšiƛẃiɬasniš ƛiḥaaqḥ.
wał-šiƛ-LS-ẃiɬas=ni·š ƛiḥ-a·-qḥ
go.home-MO-GRAD-going.to=STRG.1PL drive-DR-LINK
'We're going to drive home.' (**C**, *tupaat* Julia Lucas)

Both verbs in (104) share the semantics of the modal suffix *-ẃiɬas*, because both the driving and the going home are intentional, not-yet-occurred events. I confirmed the sharing of the subject portmanteau *=ni·š* by asking if it were possible to say (104) to mean that we were going to walk home but someone else was driving elsewhere. My consultant said no: (104) must mean that it is we who are going to go home and we who are doing it driving in a car.

(105) and (106) provide a situation where the obligatory subject sharing creates an odd interpretation. I was asking about different activities depending on the weather. The felicitous expression without the linker is in (105). My rephrase in (106) with the linker was met with an immediate laugh.

(105) ṅačaałaḥʔaała ṁiƛaaʔaƛquu.
ṅačaał=(m)a·ḥ=ʔaała ṁiƛ-a·=!aƛ=quu
read=REAL.1PL=HABIT rain-DR=NOW=PSSB.3
'I read whenever it rains.' (**B**, Bob Mundy)

(106) #ṅačaałaḥʔaała ṁiƛaaqḥ.
ṅačaał=(m)a·ḥ=ʔaała ṁiƛ-a·-(q)ḥ
read=REAL.1PL=HABIT rain-LINK
# 'I read and I am raining.' (**B**, Bob Mundy)

Both predicates in a linker construction share the semantics of the second-position clitics, which importantly means they share a subject. They also share at least modal suffixes from what I term the second-position predicate position.

4.1.4 Linkers on non-verbs

The examples so far have focused on linkers attached to verbs. For English speakers, verbal coordination is perhaps the easiest example of syntactic predicates sharing inflectional properties. However, as detailed in §4.1.1, it is possible for the linker to attach to a wide variety of non-verbs. The properties of the linker are identical on non-verbs, but it is worthwhile to look at how this works.

Perhaps the most common type of non-verbal predicate that receives the linker is quantificational adjectives (henceforth, quantifiers). The presence or absence of the linker on a quantifier significantly changes the possible interpretations for the sentence. With a bare (non-linked) quantifier, the quantifier may be interpreted as a syntactic object (107) and may not come before the verb (108). When a linker is attached, the quantifier must be interpreted as the subject and may either come before (109) or after the verb (110).

Context for (107–110): My family and I are looking for a Christmas present for my sister.

(107) ʔuuwaʔaƛ̓ ʔuuš.
ʔu-L.waƛ̓=!aƛ̓ ʔuuš
x-find=NOW some
'He/she found something.' (*? Someone found it) (C, *tupaat* Julia Lucas)

(108) *ʔuuš ʔuuwaʔaƛ̓.
ʔuuš ʔu-L.waƛ̓=!aƛ̓
some x-find=NOW
Intended: 'He/she found something.' (C, *tupaat* Julia Lucas)

(109) ʔuuwaʔaƛ̓ ʔuušqḥ.
ʔu-L.waƛ̓=!aƛ̓ ʔuuš-qḥ
x-find=NOW some-LINK
'Someone found it.' (*He/she found something) (C, *tupaat* Julia Lucas)

(110) ʔuušqḥʔaƛ̓ ʔuuwaƛ̓.
ʔuuš-qḥ=!aƛ̓ ʔu-L.waƛ̓
some-LINK=NOW x-find
'Someone found it.' (*He/she found something) (C, *tupaat* Julia Lucas)

In (109, 110), the two predicates being linked are *some* and *find*. Because quantifiers are possible predicates in Nuuchahnulth, the same analysis applied to two linked verbs can apply here: These are two predicates that share a subject. That is, there is a (null) third-person subject that is shared between the predicates *some* and *find*: "There exists an *x* such that *some*(*x*) and *find*(*x,y*)." This subject sharing makes the objective reading impossible in (109, 110).

Julia rejected an interpretation of (107) where non-linked *ʔuuš* 'some' was interpreted as the subject. However, in another context she produced (111), where *ʔuuš* 'some' is in fact given a subjective interpretation.

(111) ʔuušʔiišʔaał wiċik, ʔuuš ʕaċik, ʔuuš ʔuṁaaqƛ̓ ʔuuẏip.
ʔuuš=ʔi·š=ʔaał wiċik, ʔuuš ʕaċik, ʔuuš ʔuṁaaqƛ̓ ʔu-i·ẏip
some=STRG.3=HABIT not.talented, some talented, some able.to x-get
'Some are not talented, some are talented, some are able to get (the challenge).' (C, *tupaat* Julia Lucas)

In (111), the first two verbs are intransitive, so there is no other syntactic interpretation for *ʔuuš* 'some' other than the subjective one. The final verb is transitive, but the parallelism with the first two clauses primes the listener to interpret *ʔuuš* as subjective. The fact that Julia did not add a linker in (111) shows that a subjective interpretation is possible for non-linked quantifiers.

This observation about quantifiers holds true for other adjectives and also nouns, as seen in (112–114). The initial sentence puts two clauses together with a complementizer (112), but can be rephrased without a complementizer by using the linker (113, 114).

Context for (112–114): I arrived on the beach in a canoe. I left my canoe and went into town. While I'm inside, my canoe is carried out on the tide and capsizes. One person left behind on the beach sees it.

(112) was suggested by my consultant, and we worked to rephrase it as (113) and (114). My consultant was adamant that (112) and (113) meant exactly the same thing. If this is true, then the linker is not adding any deep semantic content.[16]

(112) ċawaakitwaʔiš ṅaacsa niiʔatu c̓apac.

ċawaak=it=waˑʔiš ṅaacsa niiʔatu c̓apac
one=PST=HRSY.3 see.DR sink canoe
'I hear that he or she saw the canoe sink.' (**C**, *tupaat* Julia Lucas)

(113) ċawaakḳitwaʔiš ṅaacsa niiʔatu c̓apac.

ċawaak-(q)ḳ=it=waˑʔiš ṅaacsa.DR niiʔatu c̓apac
one-LINK=PST=HRSY.3 see.DR sink canoe
'I hear that one (person) saw the canoe sink.' (**C**, *tupaat* Julia Lucas)

(114) quuʔasqḳitwaʔiš ṅaacsa niiʔatu c̓apacʔi.

quuʔas-(q)ḳ=it=waˑʔiš ṅaacsa niiʔatu c̓apac=ʔiˑ
person-LINK=PST=HRSY.3 see sink canoe=ART
'I hear that a person saw the canoe sink.' (**C**, *tupaat* Julia Lucas)

Using the same setup as (112–114), I elicited sentences from another speaker. This consultant initially proposed the sentence in (115). I proposed (116) by removing the linker, which he rejected, and then (117), which he accepted.

(115) ṅaacsiičiƛweʔin ċawaakḳ niiʔatu c̓apac.

ṅaacs-°iˑčiƛ=weˑʔin ċawaak-(q)ḳ niiʔatu c̓apac
see-IN=HRSY.3 one-LINK sink canoe
'I hear that one (person) saw the canoe sink.' (**B**, Bob Mundy)

(116) *ṅaacsiičiƛweʔin ċawaak niiʔatu c̓apac.

ṅaacs-°iˑčiƛ=weˑʔin ċawaak niiʔatu c̓apac
see-IN=HRSY.3 one sink canoe
Intended: 'I hear that one sees the canoe sink.' (**B**, Bob Mundy)

(117) ṅaacsiičiƛweʔin ċawaakḳ quuʔas niiʔatu c̓apac.

ṅaacs-°iˑčiƛ=weˑʔin ċawaak-(q)ḳ quuʔas niiʔatu c̓apac
see-IN=HRSY.3 one-LINK person sink canoe
'I hear that one person sees the canoe sink.' (**B**, Bob Mundy)

[16]My analysis ends up putting in a predication AND. While this may not be totally meaningless, it is extremely semantically bleached.

Bob's response to removing the linker in (116) was to say, "It's not complete. One what? What did one see?" Following the basic structure of the Nuuchahnulth clause (§1), the participants of the syntactic predicate *ṅaacsiičiƛ* 'see' should be *ċawaak* 'one' and *niiʔatu č̓apac* 'sink canoe'. But *ċawaak*, as an adjective, cannot be a full NP participant without an article (Wojdak 2001). So it is stranded and the utterance (116) is nonsensical. The presence of the linker in my consultant's initial proposed sentence (115) forces 'one' to be coreferenced with the subject of 'see', as already shown for the quantifiers in (107–110). The other participant of the seeing act (what is seen) is the dependent clause 'sink canoe'.

Example (117) shows that the linked clause not headed by a verb can include more than one word. Here *ċawaak* 'one' is a predicate with a subject *quuʔas* 'person'. This dependent clause also interrupts the matrix predicate *ṅaacsiičiƛ* 'see' and its clausal object *niiʔatu č̓apac* 'the canoe sink.' In §4.1.2 I argued that linker constructions were either headed by the predicate lacking linker morphology or the linker itself. The syntax of (117), where a predicate, linker, and its participant can all interrupt another predicate with and its participant is evidence in favor of an analysis where the non-linked predicate is the sentential head, and the linker forms a dependent clause. A rough bracketing of (117) based on this preliminary analysis is given in (118).

(118) [ṅaacs-ʷiˑčiƛ=weˑʔin [ċawaak-(q)ḥ quuʔas]linked_clause [niiʔatu č̓apac]participant_of_see]
see-IN=HRSY.3 one-LINK person sink canoe

[[TODO: track down subscript rendering problem above]]

4.1.5 Ordering in linker constructions

I have already demonstrated that the non-linked predicate may be separated from its complement by an intervening linked predicate (115, 117, 118). The reverse ordering is also possible. The linked predicate may be separated from its direct object by the non-linked predicate. In (119) the verb *hiɬ* 'be at' and its object 'my house' are contiguous, but in (120) they are separated by the non-linked predicate *mamuuk* 'work'.

(119) hiɬḥitin maḥt̓iiʔakqas mamuuk.
hiɬ-(q)ḥ=(m)it=(m)in maḥt̓ii=ʔak=qas mamuuk
be.at-LINK=PST=REAL.1PL house=POSS=DEFN.1SG work
'We worked at my house.' (**B**, Bob Mundy)

(120) hiɬḥitin mamuuk maḥt̓iiʔakqas.
hiɬ-(q)ḥ=(m)it=(m)in mamuuk maḥt̓ii=ʔak=qas
be.at-LINK=PST=REAL.1PL work house=POSS=DEFN.1SG
'We worked at my house.' (**B**, Bob Mundy)

Not only is (120) grammatical but this is often the structure speakers prefer. For one of my consultants, Northern dialect speaker Fidelia Haiyupis, this kind of object separation was acceptable when the linked predicate was separated from its object (121) but not when it the non-linked predicate was separated from its object (122, 123). I can only note that this may be a feature of Northern dialects, but it is unclear from the small amount of data that I have.

(121) hiɬḥsiiš ʔukʷiiɬ c̓upc̓upšumɬ maḥt̓iiʔakʔik.

hiɬ-(q)ḥ=siˑš ʔu-(č)iiɬ c̓upc̓upšumɬ maḥt̓ii=ʔak=ʔik
be.at-LINK=STRG.1SG X-make sweater house=POSS=DEFN.2SG
'I am making a sweater at your house.' (**N**, Fidelia Haiyupis)

(122) ʔuuct̓iiḥs Queens Cove ƛ̓iḥaaqḥ.

ʔuuct̓iiḥ=s Queens Cove ƛ̓iḥ-aˑ-(q)ḥ
go.to.DR=STRG.1SG Queens Cove drive-DR-LINK
'I am driving to Queens Cove.' (**N**, Fidelia Haiyupis)

(123) *ʔuuct̓iiḥs ƛ̓iḥaaqḥ Queens Cove.

ʔuuct̓iiḥ=s ƛ̓iḥ-aˑ-(q)ḥ Queens Cove
go.to.DR=STRG.1SG drive-DR-LINK Queens Cove
Intended: 'I am driving to Queens Cove.' (**N**, Fidelia Haiyupis)

For most speakers, however, both types of "interruption" are possible.

4.1.6 The linker and the predicate complex

Like many bound morphemes in Nuuchahnulth, the linker appears to attach to the first word in some clause. This has already been seen in (90), repeated as (124) below.

(124) ẏuuqʷaaqḥs ʕasqii ʔaanaḥi wik hinʔałšiƛ̓.

ẏuuqʷaa-qḥ=s ʕasqii ʔaanaḥi wik hinʔał-šiƛ̓
also-LINK=STRG.1SG bald only NEG realize-MO
'I'm also bald but I don't know it.' (**C**, *tupaat* Julia Lucas)

The two predicates being tied together in (124) sentence are 'also bald' and 'only not know (it).' The linker appears on the preposed adverb *ẏuuqʷaa* of the first predicate. Examples like this are difficult to gather directly as they require special context and it is possible to express the same meaning without the linker, but a few examples occur in the Nootka Texts. In (125) the linker also attaches to the preceding adverb of its linked predicate 'still at war', and links that to the still later predicate 'grab their guns.'

(125) ʔeʔimqḥʔaƛ̓quuweʔin hitaḥtačiƛ̓ sukʷiʔaƛ̓ puuʔakʔiʔał.

ʔeʔim-(q)ḥ=!aƛ̓=quu=weˑʔin hitaḥta-čiƛ̓ su-kʷiƛ̓=!aƛ̓ puu=ʔak=ʔiˑ=ʔał
first-LINK=NOW=PSSB.3=HRSY.3 go.out.to.sea-MO hold-MO=NOW gun=POSS=ART=PL
'As soon as they left the land, they would take their guns.' (**B**, Sapir & Swadesh 1955:395)

In (126), the linker again attaches to an adverb *ʔiiqḥii* 'still', and links the entire predicate 'still doing war' to the earlier predicate *qʷis* 'do thus.'

(126) qiiḥsn̓aakcḵin ʔaḥ qʷiyiič [[qʷis] [ʔiiqḥii**qḥ** hitačink]] maatmaasʔi qaḥsaaṗaƛquuweʔin c̓amuʔałʔaƛquu yuułuʔiłʔatḥ[17]huuʕiiʔatḥuʔałʔaƛquu.

qiiḥsn̓aak-cḵin	ʔaḥ	qʷiyii=č	[[qʷis]	[ʔiiqḥii-**(q)ḥ**	hitačink	maatmaas=ʔiˑ]]	
long.time-DIMIN	DDYN	when=HRSY	do.thus	still-link	war	tribe.PL=ART	
qaḥ-saˑp=!aƛ=quu=weˑʔin		c̓am-uʔał=!aƛ=quu		yuułuʔiłʔatḥ	huuʕiiʔatḥ-uʔał=!aƛ=quu.		
kill-MO.CAUS=NOW=PSSB.3=HRSY.3		vessel-see=NOW=PSSB.3		Ucluelet	Huuayaht-see=PSSB.3=HRSY.3		

'For a little longer after this happened, while the tribes were still at war, the Ucluelets would kill Huu-ay-ahts when they saw their canoes.' (**B**, Sapir & Swadesh 1955:392)

These examples, as well the case of modal suffix scoping have led me to believe there is a phrasal unit between the clause (where the second position clitics scope) and the main predicate. I have dubbed this the "predicate phrase." This phrase consists maximally of the predicate word and preceding adverbs. The predicate linker will attach to the first word in the predicate phrase, whether that is the predicate word itself or a preceding adverb. [[TODO: Move the main arguments up to the clause section]]

4.1.7 Dangling linkers

There are a small number of cases where the linker does not appear to be linking its predicate to anything. I believe that the interpretation of these cases shows that there is an elided phrase. The most common is in a formulaic farewell (127).

(127) ʔuʔaałukḥʔiʔał.

ʔu-!aałuk-(q)ḥ=!iˑ=ʔał

x-look.after-LINK=CMMD.2SG=HABIT

'Take care!' (**N**, Fidelia Haiyupis)

The meaning of (127) is "Farewell, look after yourself in whatever you're doing." But "whatever you're doing" is dropped from the sentence. I think that the linker is a leftover from the elided phrase. These kinds of "dangling" linkers are uncommon, and in my experience speakers won't accept them out of the blue unless it is a formulaic expression.

4.1.8 Semantic and ordering preferences

Despite the relative flexibility of which predicate in a construction gets the linker (§4.1.2), there are some cases where speakers strongly prefer the linker to go on one or the other predicate.

In a sentence expressing action at a location, speakers I worked with preferred to put the linker on the location word, and not on the action word. Sometimes speakers rejected other orderings, as in (128–130).

(128) ƛ̓aaʔaasḥiis ciiqmałap.

ƛ̓aaʔaas-(q)ḥ=(y)iis	ciiqmałap
outide-LINK=WEAK.1SG	speak.publicly

'I'm speaking outside.' (**Q**, Sophie Billy)

[17]Corrected from *yuułuʔiłʔatqḥ*.

(129) ciiqmałapiis hiɬḥ ƛ̓aaʔaas.

ciiqmałap=(y)iis	hiɬ-(q)ḥ	ƛ̓aaʔaas
speak.publicly=WEAK.1SG	be.at-LINK	outside

'I'm speaking outside.' (**Q**, Sophie Billy)

(130) *ciiqmałapḥiis ƛ̓aaʔaas.

ciiqmałap-(q)ḥ=(y)iis	hiɬ-(q)ḥ	ƛ̓aaʔaas
speak.publicly-LINK=WEAK.1SG	be.at-LINK	outside

Intended: 'I'm speaking outside.' (**Q**, Sophie Billy)

[[TODO: ?ƛ̓aaʔaasḥiis ciiqmałap]]

I was unable to find a case where Sophie would use a linker in such cases on any word other than the location word, and in the (small) corpus of speech I have from her, there are no instances of her doing so. Sophie uses the linker construction much less than all other language consultants I worked with, and rejected many constructions that other speakers used. She is the youngest known fluent speaker, and her speech represents a very innovative Checkleseht dialect. In the data I collected, she most readily attached the linker to quantificational adjectives and location words, and rarely used it elsewhere.

With other consultants who used the linker more widely, they would sometimes reject reorderings or sample sentences that occurred within a set. The following series is from Bob Mundy, a Ucluelet elder, who preferred linked predicates to be the first predicate in the sentence. (131) and (132) are repeated from (94) and (93) respectively.

(131) ciiqciiqaqḥitaḥ hitaas.

ciq-LR2L.a-(q)ḥ=(m)it=(m)aˑḥ	hitaas
speak-RP-LINK=PST=REAL.1SG	be.outside

'I'm speaking outside.' (**B**, Bob Mundy)

(132) hitaasḥitaḥ ciiqciiqa.

hitaas-(q)ḥ=(m)it=(m)aˑḥ	ciq-LR2L.a
be.outside-LINK=PST=REAL.1SG	speak-RP

'I'm speaking outside.' (**B**, Bob Mundy)

(133) *hitaasitaḥ ciiqciiqaqḥ.

hitaas=(m)it=(m)aˑḥ	ciq-LR2L.a-(q)ḥ
be.outside=PST=REAL.1SG	speak-RP-LINK

Intended: 'I'm speaking outside.' (**B**, Bob Mundy)

[[TODO?: Repeat with 4th option in mix, ciiqciiqamitaḥ hitaasḥ]]

While Bob was adamant about his ungrammatical judgment, I think the context of rephrasing is important, as this transforms the grammaticality question into something like a ranked choice task. I do not think (133) is truly ungrammatical, as Bob would still generate this kind of ordering in fluent speech. Despite his judgment about here, in another context Bob unprompted produced sentences with the second-predicate linked, as in (115) and (**??**).

Both the rephrasing data from Bob and the restricted use of the linker by Sophie suggests some general preferences: all else being equal, a location word should not be the one linked, and the first word should be the one with the linker. [[TODO: Get some numbers over the example sentences collected so far]]

4.1.9 Data Summary

The data presented so far leads to the following conclusions:

1. The linker may attach to any content word of Nuuchahnulth. This includes nouns, adjectives (including quantifiers), verbs, and adverbs, and excludes complementizers.[18] (§4.1.1)
2. A clause may not consist of only a linked predicate. (§4.1.2)
3. Both predicates in a linker construction shares the second-position inflectional information, including subject. (§4.1.3)
4. The linker does not add semantic content to a predicate. (§4.1.3)
5. The properties of the linker do not alter depending on whether it attaches to a verb or other part of speech. (§4.1.4)
6. It is possible for either predicate in a linker construction to be separated from their complement by the other predicate. (§4.1.5)
7. The linker attaches to the first word in its predicate complex, even if that first word is an adverb that precedes the predicate. (§4.1.6)
8. In certain pragmatically restricted environments, the linker can be used without attaching to a matrix clause. A plausible interpretation in this context is of an elided predicate. (§4.1.7)
9. There seems to be a preference for linked predicates to occur first and on location words (§4.1.8).

4.2 Application of the linker to categoricity questions

There are some words in Nuuchahnulth whose part of speech properties are not entirely clear. Woo (2007) examines Nuuchahnulth's large (but closed) set of adpositive-like words, and ends up categorizing them as special types of verbs (some of them little-*v*, from a Minimalist perspective). There are other words whose status is somewhat unclear, such as *ʔuunuuƛ*/*ʔunẃiiƛ* 'because of an event', *ʔuusaḥi* 'because of a thing', and *ʔuyi* 'at a time'. Some of these words accept the linker and others do not. Recall that the linker typically occurs freely on content words such as verbs (4.1.1), so if these words are verbs, or at least normal verbs, the linker should be able to attach.

Briefly, I show here that *ʔuunuuƛ*/*ʔunẃiiƛ* 'because of an event' do accept the linker, while *ʔuusaḥi* 'because of a thing' may not (4.2.1). Similarly, *ʔuyi* 'at the time' only accepts the linker marginally (4.2.2).

[18] There is more to say about a possible class of adpositions. This is addressed in §4.2.3.

Most of the adpositive-like verbs can also accept the linker (4.2.3), but not the special non-subject marking[19] adpositives *ʔuukʷiɬ* and *ʔuḥta*. This aligns with Woo's findings.

The marginal cases of *ʔuusaḥi* and *ʔuyi* suggest words moving from a simple verb to another category, either a restricted verb type or an incipient category of prepositions. On the other hand, evidence from the linker suggests that *ʔuukʷiɬ* and *ʔuḥta* are members of a special syntactic category, either a very small class of prepositions or little-*v*, depending on one's syntactic framework.

4.2.1 'Because' words

There are three words in Nuuchahnulth that roughly translate to English 'because': *ʔuusaḥi* (all dialects), *ʔuunuuƛ*[20] (Barkley and Central, recognized but rare in Northern and Kyuquot-Checleseht) and *ʔunẇiiƛ* (Northern and Kyuquot-Checleseht only).

To lay some terminological groundwork, I will be using the technical terms *protasis* and *apodosis*. The *protasis* is the part of the sentence describing the condition, and the *apodosis* is the part of the sentence describing the consequence or result. I will call the words relating these propositions *becausitives*.

ʔuunuuƛ and *ʔunẇiiƛ* appear to be dialectal variants with the same meaning and use patterns. The most straightforward way to use the words is as the first word, or main predicate of the sentence (134, 135), where they take the second position clitic complex, including the subject portmanteau. It is hard to conceive of the relation BECAUSE having a subject, and indeed the subject agreement marks the subject of the apodosis. Argument-dropping is common for Nuuchahnulth verbs, and these constructions can often drop the apodosis and realize it in a later clause (134), if at all.

(134) ʔuunuuƛitaḥ wik ƛuɬ weʔič. ʕiḥakita naẏaqak.
ʔuunuuƛ=(m)it=(m)aˑḥ wik ƛuɬ weʔič. ʕiḥak=(m)it=maˑ naẏaqak
because=PST=REAL.1SG NEG good sleep. cry=PST=REAL.3 baby
'I didn't sleep well because (of it); the baby was crying.' (**B**, Bob Mundy)

(135) ʔunẇiiƛiis mačiiɬ ʔin ṁiƛaa.
ʔunẇiiƛ=(y)iis mačiiɬ ʔin ṁiƛ-aˑ
because=WEAK.1SG inside.DR COMP rain-DR
'I'm inside because it is raining.' (**Q**, Sophie Billy)

The apodosis can be introduced with a complementizer, as in (ex:unwiitl2) above and (136) below. The complementizer may not be used to introduce the protasis (137, 138).

(136) ʔuunuuƛs hiniiʔiƛ ʔin ṁiƛaa.
ʔuunuuƛ=s hiniiʔiƛ ʔin ṁiƛ-aˑ
because=STRG.1SG inside.MO COMP rain-DR
'I came inside because it is raining.' (**N**, Fidelia Haiyupis)

[19]The marking properties of these words and are somewhat more complex than this simple story. [[TODO: Put this in the clause section – It's just non-ARG1, cite Woo.]]

[20]Elder *tupaat* Julia Lucas, who is an Ahousaht speaker, consistently pronounces this word as *ʔunʔuuƛ*. I do not know whether this is a feature of her particular idiolect or a sub-Ahousaht dialect feature of which she is the only known (to me) speaker. I transcribe the word as she pronounces it.

Context for (137, 138): There are two teams playing tug-of-war. One has access to supernatural medicine and they are the winners.

(137) ʔunʔuuƛ̓ḥitqač̓aʔał hitaʔap ʔin ʕuẏinak.

ʔunʔuuƛ̓-(q)ḥ=(m)it=qač̓a=ʔał	hitaʔap	ʔin	ʕuẏi-na·k
because-LINK=PST=INFR=PL	win	COMP	medicine-have

'They won because they had medicine.' (**C**, *tupaat* Julia Lucas)

(138) # ʔunʔuuƛ̓ḥitqač̓aʔał ʕuẏinak ʔin hitaʔap.

ʔunʔuuƛ̓ḥitqač̓aʔał	ʕuẏinak	ʔin	hitaʔap
because-LINK=PST=INFR=PL	medicine-have	COMP	win

Intended: 'They won because they had medicine.'[21](**C**, *tupaat* Julia Lucas)

As demonstrated in (137, 138), the becausative can have a linker attached, in which case the linker must be linking the becausative to the following apodosis, since the protasis is explicitly subordinated by the complementizer. The complementizer is optional in this linker construction, and the order of becausative and apodosis is flexible (139).

(139) hiniiʔiƛ̓s ʔunẇiiƛ̓ḥ ṁiƛ̓šiƛ̓.

hiniiʔiƛ̓=s	ʔunẇiiƛ̓-(q)ḥ	ṁiƛ̓-šiƛ̓
inside.MO=REAL.1SG	because-LINK	rain-MO

'I am inside because it started raining.' (**N**, Fidelia Haiyupis)

One of my consultants, Bob Mundy (Ucluelet), translated the linker attachment in this way: *ʔuunuuƛ̓* is 'because' and *ʔuunuuƛ̓ḥ* is 'that's why.' This is a fairly succinct way of translating the presence of the linker.

So far, the evidence suggests that these becausatives have at least one argument, the protasis, which can optionally be introduced with a complementizer. The apodosis is more complicated since it is the argument that the linker morpheme "links" the becausative to (139). If the linker is behaving here as it has in other constructions, that would mean that the apodosis is not an argument of the becausative in those constructions. So is the apodosis an argument in the because constructions without the linker in (134–136)?

The answer appears to be no, the apodosis is never an argument of the becausative. This can be seen in (140–140), where the ordering of the clause is reversed from what has been seen so far: the apodosis precedes the becausative. These constructions are highly analogous to the SVCs of adpositive-like verbs (§3.2).

Context for (140, 141): Two teams are playing tug of war. Our team is strongest and we won.

(140) hiteʔitapin ʔuunuuƛ̓ našukqin.

hiteʔitap=(m)in	ʔuunuuƛ̓	našuk=qin
win=REAL.1PL	because	strong=DEFN.1PL

'We won because we are strong.' (**B**, Marjorie Touchie)

[21]This actual meaning of (138) would be the opposite of what makes sense in the story. "It's backwards," in my consultant's words.

(141) tunuumitniš ʔunẃiiƛ̓ ḥaaʔakin.
tunuumit=ni·š ʔunẃiiƛ̓ ḥaaʔak=(y)in
win=STRG.1PL because strong=WEAK.1PL
'We won because we are strong.' (**N**, Fidelia Haiyupis)

Examples like (140) and (134) are in some ways the rarest form of the because construction. My consultant Marjorie Touchie (Ucluelet) freely and frequently produced constructions like this, but Fidelia Haiyupis (Ehatesaht) and Julia Lucas (Ahousaht) rejected examples like this, insisting that these cases needed to contain a linker. However, both Fidelia and Julia produced such a sentence in fluent speech. If I had to make a guess about why these sentences sounded strange out of the blue, it would be that the becausative-first construction is the older and more conservative pattern, while the apodosis-first construction is newer. However, this is speculation.

Finally, *ʔuunuuƛ̓/ʔunẃiiƛ̓* must take a protasis that is verbal, not nominal (142, which is from the same context as 134) or adjectival (143). This is somewhat unusual, given the language's flexibility around predication (§1).

(142) *wikitaḥ ƛ̓uł weʔič ʔuunuuƛ̓ naẏaqakʔisʔi.
wik=(m)it=(m)a·ḥ ƛ̓uł weʔič ʔuunuuƛ̓ naẏaqak=ʔis=ʔi·
NEG=PST=REAL.1SG good sleep because baby=DIMIN=ART
Intended: 'I didn't sleep well because of the baby.' (**B**, Bob Mundy)

(143) *hitaʔapweʔin kaatkimqsuptaał ƫaṅeʔisʔi ʔuunuuƛ̓ našuk.
hitaʔap=we·ʔin kaatkimqsuptaał ƫaṅa=ʔis=ʔi· ʔuunuuƛ̓ našuk
win=HRSY.3 race child=DIMIN=ART because strong
Intended: 'The kid won the race because he is strong.' (**B**, Bob Mundy)

The evidence suggests something like the following for *ʔuunuuƛ̓* and *ʔunẃiiƛ̓*. These words are verbs that take a single clausal complement, a protasis, which must be verbal and may be optionally introduced by a complementizer. The way the BECAUSE relation is syntactically related to its apodosis is either through a SVC, which behaves much like the adpositive-like SVCs, or via a linker construction which links the apodosis and becausative.

Where *ʔuunuuƛ̓* and *ʔunẃiiƛ̓* behave as verbs with a verbal complement representing the protasis, *ʔuusaḥi* requires its nominal complement protasis. Examples (144, 145) below are a rephrasing of (134), demonstrating that, opposite from *ʔuunuuƛ̓/ʔunẃiiƛ̓*, *ʔuusaḥi* must take a noun phrase protasis and not a verbal clause.

(144) ʔuusaḥimta naẏaqakʔi. wikitaḥ ƛ̓uł weʔič.
ʔuusaḥi=imt=(m)a· naẏaqak=ʔi·. wik=(m)it=(m)a·ḥ ƛ̓uł weʔič
because.of=PST=REAL.3 baby=ART NEG=PST=REAL.1SG good sleep
'It was because of the baby; I didn't sleep well.' (**B**, Bob Mundy)

(145) *ʔuusaḥimta ʕiḥak naẏaqakʔi. wikitaḥ ƛ̓uł weʔič.
ʔuusaḥi=imt=(m)a· ʕiḥak naẏaqak=ʔi·. wik=(m)it=(m)a·ḥ ƛ̓uł weʔič
because.of=PST=REAL.3 cry.DR baby NEG=PST=REAL.1SG good sleep
Intended: 'It was because of the crying baby; I didn't sleep well.' (**B**, Bob Mundy)

The noun phrase protasis must also occur immediately following *ʔuusaḥi*, as shown in (146, 147).

(146) ʔuusaḥi ʕuẏi hitaʔap.
ʔuusaḥi ʕuẏi hitaʔap
because.of medicine win
'They won because of the medicine.' (**C**, *tupaat* Julia Lucas)

(147) *ʔuusaḥi hitaʔap ʕuẏi.
ʔuusaḥi hitaʔap ʕuẏi
because.of win medicine
Intended: 'They won because of the medicine.' (**C**, *tupaat* Julia Lucas)

ʔuusaḥi may only take a clausal protasis if the protasis is preceded by the complementizer (148, 149).

(148) ʔuusaḥi hitaʔap ʔin ʕuẏinak.
ʔuusaḥi hitaʔap ʔin ʕuẏi-naˑk
because.of win COMP medicine-have
'They won because they had medicine.' (**C**, *tupaat* Julia Lucas)

(149) ʔuusaḥis wik ƛuł waʔič ʔin wawaałwiqa ʕiniiƛ.
ʔuusaḥi=s wik ƛuł waʔič ʔin wawaałwiqa ʕiniiƛ
because.of=STRG.1SG NEG good sleep COMP bark dog
'I didn't sleep well because of the dog.' (*C*, *tupaat* Julia Lucas)

ʔuusaḥi does appear to be able to take the linker, although like the use of the complementizer, this changes the part of speech of its complement.

(150) ʔuusaqtumtʔiš ʔuusaḥiqḥ wiḵaałukʷint.
ʔuusaqta=umt=ʔiˑš ʔuusaḥi-(q)ḥ wik-!aałuk=int
hurt=PST=STRG.3 because-LINK NEG-look.after=PST
'He got hurt because he wasn't paying attention.' (*N*, Fidelia Haiyupis)

Like *ʔuunuuƛ*/*ʔunẇiiƛ*, *ʔuusaḥi* appears to be a verb taking a single argument, a protasis. This is associated with the apodosis of the BECAUSE relation via either a serial verb construction with the clausal apodosis, or with a linker. Unlike *ʔuunuuƛ*/*ʔunẇiiƛ*, *ʔuusaḥi* takes a nominal protasis, but this can be changed into a verbal protasis with either the introduction of the complementizer or by attaching the linker to *ʔuusaḥi*.

4.2.2 *ʔuyi*

Of the possibly-verbal, possibly-adpositional words in Nuuchahnulth, *ʔuyi* and *ʔuukʷiɬ* are perhaps the most ambiguous cases (Adam Werle, *p.c.*). The meaning of *ʔuyi* is 'at (a time)' and it typically cooccurs with another predicative word in a sentence. In this case, the clausal clitics scope over both predicates (151–155). The temporal complement of *ʔuyi* can be a nominal either occurring after (151) or before (152) *ʔuyi* itself, it can be expressed in a clause with a dependent mood such as the possible mood (153) or the definite mood (154), or it can be dropped from the clause entirely (155).

(151) ʔuyiẇiɬsiis saantii ʔucičƛ ciquwɬi.
ʔuyi-ẇiɬs=(y)iis saantii ʔu-ci-čiƛ ciq-uwɬ=ʔiˑ
at.a.time-going.to=WEAK.1SG Sunday x-go.to-MO pray-building=ART
'I'm going to church on Sunday.' (**Q**, Sophie Billy)

(152) waałakin yuuɬuʔiɬʔatḥ kuʔał ʔuyi.
wałaak-LS=(m)in yuuɬuʔiɬʔatḥ kuʔał ʔuyi
walk-GR=REAL.1PL Ucluelet morning at.a.time
'We're going to Ucluelet in the morning.' (**B**, Bob Mundy)

(153) ʔuyimaḥʔaała ṅaṅaṅič kuʔiičiʔaƛquu.
ʔuyi=maˑḥ=ʔaała ṅaṅaṅič kuʔał-°iˑčiƛ=!aƛ=quu
at.a.time=REAL.1SG=HABIT read morning-IN=NOW=PSSB.3
'I read in the mornings.' (**B**, Bob Mundy)

(154) ʔuyimtaḥ ʕimtnaakšiƛ čakupšiʔeƛqas.
ʔuyi=imt=(m)aˑḥ ʕimt-naˑk-šiƛ čakup-šiƛ=!aƛ=qaˑs
at.a.time=PST=REAL.1SG name-have-MO man-MO=NOW=DEFN.1SG
'I was a full man when I got my name.' (**B**, Bob Mundy)

(155) ʔuyiʔum kitḥšiƛ siičił.
ʔuyi=!um kitḥ-šiƛ si-L.(č)ił
at.a.time=CMMD.FUT.1PL ring-MO 1SG-do.to
'Call me then.' (**C**, *tupaat* Julia Lucas)

ʔuyi has a tendency to double in fluent speech: as the first predicate of a two-utterance, then later following its object (156, 157). This could be described grammatically as the first *ʔuyi* occurring with a dropped argument and the second with its object. Note that the sentence in (157) is grammatical without the doubling (158).

(156) ʔuyimtinʔaała wałaak May ʔuyiʔeƛ.
ʔuyi=imt=(m)in=ʔaała wałaak May ʔuyi=!aƛ
at.a.time=PST=REAL.1PL=HABIT go May at.a.time=NOW
'We would go (there) in May.' (**B**, Bob Mundy)

(157) ʔuyisʔaał yaacuk kuʔał ʔuyi.
ʔuyi=s=ʔaał yaacuk kuʔał ʔuyi
at.a.time=STRG.1SG=HABIT walk morning at.a.time
'I walk in the morning.' (**C**, *tupaat* Julia Lucas)

(158) ʔuyisʔaał yaacuk kuʔał.

ʔuyi=s=ʔaał	yaacuk	kuʔał
at.a.time=STRG.1SG=HABIT	walk	morning

'I walk in the morning.' (**C**, *tupaat* Julia Lucas)

The features of *ʔuyi* so far are in line with other verbs. The clitic-sharing across predicates and the structure of (158) in particular is identical to other serial verb constructions (see TODO serial verb section). However, the doubling in (156, 157) is unique. One point of differentiation is that *ʔuyi* only marginally accepts the linker. After attempting to elicit and construct examples of linked *ʔuyiqḥ*, Barkley speakers Bob Mundy and Marjorie Touchie said that *ʔuyiqḥ* was not a word. They rejected a construction that added a linker to an expression for 'tomorrow' (159), as did Central speaker Julia Lucas when I presented her with the same construction (160). Marjorie Touchie immediately corrected (159) by telling me that the way to say this would be with *ʔuyi ʔaṁii*.

(159) *ʔuyiqḥʔaƛaḥ ʔaṁii mamuuk hił makuuł.

ʔuyi-(q)ḥ=!aƛ=(m)aˑḥ	ʔaṁii	mamuuk	hił	makuuł
at.a.time-LINK=NOW=REAL.1SG	one.day.away	work	at.a.location	store

Intended: 'I will go to work at the store tomorrow.' (**B**, Bob Mundy & Marjorie Touchie)

(160) *ʔuyiqḥʔaƛs ʔaṁii mamuuk hił makuwił.

ʔuyi-(q)ḥ=!aƛ=s	ʔaṁii	mamuuk	hił	makuuł
at.a.time-LINK=NOW=STRG.1SG	one.day.away	work	at.a.location	store

Intended: 'I will go to work at the store tomorrow.' (**C**, *tupaat* Julia Lucas)

Unlike Bob and Marjorie, Julia did believe that *ʔuyiqḥ* was a possible word and offered up this sentence as an example case:

(161) ʔuyiqḥẇiɬass ʔaƛṗit tinʕaƛ huʔacačiƛ.

ʔuyi-(q)ḥ-ẇiɬas=s	ʔaƛ-ṗit	tin-ʕaƛ	huʔa-ca-čiƛ
at.a.time-LINK-going.to=STRG.1SG	two-times	bell-sound.of	back-go-MO

'I will come back at two o'clock.' (**C**, *tupaat* Julia Lucas)

I am unable to explain why (161) is grammatical and (160) is not. In all of the Nootka Texts, there is only one example of linked *ʔuyiqḥ*, out of approximately 746 instances of *ʔuyi*.

(162) minkšiʔaƛquu čˀinaaqḥčik nunuuk ʔuʔuyiqḥ ʔuʔuuštaqyuqʷałšẏakukʔi.

mink-šiƛ=!aƛ=quu	čˀin-aˑ-(q)ḥčik	nunuuk	R-ʔuyi-(q)ḥ
around-MO-NOW=PSSB.3	pull.hair-DR-along.the.way	sing.DR	PL-at.the.time.of-LINK

R-ʔuuštaqyu-qałš-ẏak=uk=ʔiˑ
PL-doctor-take.action.on-for.the.purpose.of=POSS=ART

'As they make the circuit, dragging them along by the hair, they sing his doctoring songs.' (Sapir & Swadesh 1939:105)

The marginality of linkers on *ʔuyi* – and its capacity for grammatical doubling – suggests that there is something special about this word, although it behaves in most other ways like a verb entering into a serial verb construction. Like *ʔuusaḥi* (§4.2.1), *ʔuyi* may be a change-in-progress, from a verb to something preposition-like.

4.2.3 Adpositive-like words

In her dissertation, Woo (2007) examines the syntax of what she terms "prepositional predicates" and, ultimately, agrees with previous researchers that these words are verbs. The words she considers are: (1) *ʔuuḥẇaɬ* 'using', (2) *ʔuuʔink* 'using', (3) *ʔuucḥin* benefactive, (4) *ʔuʔatup* benefactive/recipient, (5) *ʔuukčamałčiqḥ* 'do together with someone', (6) *ʔukʷink* 'go with', (7) *ʔuukʷiɬ* 'do to', (8) *ʔuḥta* 'do to', and (9) *ʔuḥ* subject marker.

Woo separates out the last three of the list from the rest. The first six of these prepositional predicates introduce an extra argument into the clause, and using the Minimal Framework, Woo categorizes them as full verbs (V) which, when working in concert with a main verb, coordinate at the level of *v*P. This is supported in part by the first set of words can occur as the sole predicate of a sentence.

However, the latter three words (*ʔuukʷiɬ*, *ʔuḥta*, and *ʔuḥ*) optionally mark arguments already inherent in the main verb. They require a main predicate to form a grammatical sentence (or may only be used alone in special circumstances, like question-answering). These Woo categorizes as flavors of *v*.

Although I approach my analysis from within a different framework, I agree with Woo's broad categorization. I checked speaker's intuitions about attaching the linker -(*q*)*ḥ* to these adpositive-like words and the judgments I received support Woo's bifurcation into two categories, and importantly that the first category are in fact verbs. Not all speakers recognize or use all of these adpositive-like words, so I was only able to test a subset. There is also a morphophonological problem testing *ʔuḥ* (which would be a **??ʔuḥḥ* with the linker). However, I have collected data on (1) *ʔuuḥẇaɬ*, (3) *ʔuucḥin*, (4) *ʔuʔatup*, (not in Woo's list) *ʔuupaaɬ*, (7) *ʔuukʷiɬ*, and (8) *ʔuḥta*. In short,the words Woo's calls verbs mostly accept the linker, while all of her "little-*v*" words do not.

4.2.3.1 *ʔuuḥẇaɬ* The adpositive verb *ʔuuḥẇaɬ* 'using' can accept the linker in a sentence without any change of meaning.

(163) wikcuk̓ʷapʔic ƛiisƛiisa ʔuuḥẇaɬ ƛiisćuuẏak.
wikcuk=!ap=ʔic ƛis-LR2L.a ʔuuḥẇaɬ ƛiisćuuẏak
easy=CAUS=STRG.2SG write-RP using computer
'It's easy for you to write using a computer.' (**N**, Fidelia Haiyupis)

(164) wikcuk̓ʷapʔic ƛiisƛiisa ʔuuḥẇaɬḥ ƛiisćuuẏak.
wikcuk=!ap=ʔic ƛis-LR2L.a ʔuuḥẇaɬ-(q)ḥ ƛiisćuuẏak
easy=CAUS=STRG.2SG write-RP using-LINK computer
'It's easy for you to write using a computer.' (**N**, Fidelia Haiyupis)

4.2.3.2 ***ʔuucḥin*** The adpositive verb *ʔuucḥin* 'for, on the behalf of' can also accept the linker, although my consultant was less sure about it. She said that I could "get away with" (166) but thought it was unnecessary.

(165) ʔuucḥins mamuuk ʔuušḥẏumsukqs.
ʔuucḥin=s mamuuk ʔuuš-ḥẏums=uk=qs
BENEF=STRG.1SG work some-related.or.friend=POSS=DEFN.1SG
'I'm working for my friend.' (**N**, Fidelia Haiyupis)

(166) ʔuucḥinqḥʔaƛs mamuuk ʔuušḥẏumsukqs.
ʔuucḥin-(q)ḥ=!aƛ=s mamuuk ʔuuš-ḥẏums=uk=qs
BENEF-LINK=NOW=STRG.1SG work some-related.or.friend=POSS=DEFN.1SG
'I'm working for my friend.' (**N**, Fidelia Haiyupis)

4.2.3.3 ***ʔuʔatup*** There is speaker disagreement on whether the adpositive verb *ʔuʔatup* 'on the behalf of, for the benefit of' freely accepts the linker. My consultant *tupaat* Julia Lucas, a Central speaker, accepted it (167, 168) but my Barkley Sound consultants Bob Mundy and Marjorie Touchie did not (169, 170). This may be another case of a change in progress, where for my Barkley consultants, *ʔuʔatup* is coming to more closely resemble *ʔuukʷiɬ* grammatically (§4.2.3.5), something approaching a true adposition.

(167) ʔaḵuuɬis suẇa ḥiẏaḥi č̓apac ʔuʔatup ḥaakʷaaƛukʔitk.
ʔaḵuuɬi=s suẇa ḥiẏaḥi č̓apac ʔuʔatup ḥaakʷaaƛ=uk=ʔitk.
loan=STRG.1SG 2SG D3 canoe BENEF daughter=POSS=DEFN.2SG
'I'm loaning you that canoe for your daughter.' (**C**, *tupaat* Julia Lucas)

(168) ʔaḵuuɬis suẇa ḥiẏaḥi č̓apac ʔuʔatupḥ ḥaakʷaaƛukʔitk.
ʔaḵuuɬi=s suẇa ḥiẏaḥi č̓apac ʔuʔatup-(q)ḥ ḥaakʷaaƛ=uk=ʔitk.
loan=STRG.1SG 2SG D3 canoe BENEF-LINK daughter=POSS=DEFN.2SG
'I'm loaning you that canoe for your daughter.' (**C**, *tupaat* Julia Lucas)

(169) huyaaɬaḥ ʔuʔatup ɬaatṅeʔis.
huyaaɬ=(m)a·ḥ ʔuʔatup ɬaatṅa=ʔis.
dance=REAL.1SG BENEF child.PL=DIM
'I dance for the children.' (**B**, Bob Mundy, Marjorie Touchie)

(170) *huyaaɬaḥ ʔuʔatupḥ ɬaatṅeʔis.
huyaaɬ=(m)a·ḥ ʔuʔatup-(q)ḥ ɬaatṅa=ʔis
dance=REAL.1SG BENEF-LINK child.PL=DIM
Intended: 'I dance for the children.' (**B**, Bob Mundy, Marjorie Touchie)

4.2.3.4 ***ʔuupaaɬ*** Though this does not appear in Woo (2007), it is another adpositive-like verb that appears to have the same meaning as *ʔukʷink* 'with'. My consultants familiar with the word used it both with and without the linker.

4.2.3.5 ***ʔuukʷiɬ*** Unlike the fully predicative verbs above, *ʔuukʷiɬ* 'do to' does not accept the linker.

(171) hałiiɬintʔiš ʔiiḥatisʔatḥ ʔuukʷiɬ ċišaaʔatḥ čiicsɬałẇiɬas.
hałiiɬ=int=ʔi·š ʔiiḥatisʔatḥ ʔu-L.(č)iɬ ċišaaʔatḥ čiicsɬał-ẇiɬas
ask=PST=STRG.3 Ehattisaht DO.TO Tseshaht do.tug.of.war-going.to
'The Ehattesahts invited the Tseshahts to play tug of war.' (**N**, Fidelia Haiyupis)

(172) *hałiiɬintʔiš ʔiiḥatisʔatḥ ʔuukʷiɬḥ ċišaaʔatḥ čiicsɬałẇiɬas.
hałiiɬ=int=ʔi·š ʔiiḥatisʔatḥ ʔu-L.(č)iɬ-(q)ḥ ċišaaʔatḥ čiicsɬał-ẇiɬas
ask=PST=STRG.3 Ehattisaht DO.TO-LINK Tseshaht do.tug.of.war-going.to
Intended: 'The Ehattesahts invited the Tseshahts to play tug of war.' (**N**, Fidelia Haiyupis)

4.2.3.6 ***ʔuḥta*** Like the more common object marker *ʔuukʷiɬ, ʔuḥta* 'do to' also does not accept the linker.

Context for (173, 174), discussing family relations.

(173) ʔuḥta Jane ʔuʔukʷiɬ Alexandra ẏuukʷiiqsu.
ʔuḥta Jane ʔuʔukʷiɬ Alexandra ẏuukʷiiqsu
DO.TO Jane call Alexanda younger.sibling
'Only Jane can call Alexandra youngest.' (**C**, *tupaat* Julia Lucas)

(174) *ʔuḥtaqḥ Jane ʔuʔukʷiɬ Alexandra ẏuukʷiiqsu.
ʔuḥta-(q)ḥ Jane ʔuʔukʷiɬ Alexandra ẏuukʷiiqsu
DO.TO-LINK Jane call Alexanda younger.sibling
Intended: 'Only Jane can call Alexandra youngest.' (**C**, *tupaat* Julia Lucas)

4.2.4 Summary of the linker and class-ambiguous words

I believe that this data about the attachment of the predicate linker can help shed light on the categoricity of these words. *ʔuunuuƛ* and *ʔunẇiiƛ* 'because' behave like verbs, and I believe they should be treated as such. *ʔuyi* appears verbal but more marginally so, and is possibly in the process of transitioning to a preposition. The adpositive-like words that can accept the linker seem to be clearly verbal, which agrees with Woo (2007)'s categorization. However the argument-marking words *ʔuukʷiɬ* and *ʔuḥta* behave differently, as befitting non-predicative words belonging to a different category.

4.3 HPSG Analysis and Implementation

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