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Multi-predicate Constructions in Nuuchahnulth

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Abstract

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This dissertation documents and models two types of multi-predicate constructions in Nuuchahnulth: serial verb constructions, and a construction involving a suffix called the predicate linker. I define a serial verb construction (SVC) as any clause with two verbs present and no over coordinating element. I document the circumstances under which this occurs and its grammatical constraints, and classify SVCs in Nuuchahnulth into 5 categories. I also examine the linker suffix and provide a grammatical description for it. Unlike SVCs, the linker coordinates two elements which serve as predicates in the syntax, a category which includes more than verbs. I use the properties of the linker and SVCs to shed light on words that are category-ambiguous. Finally, this is all implemented inside of a DELPH-IN style HPSG computational grammar. The analyses are implemented and tested against a set of vetted sentences illustrating the phenomena.

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Chapter 1

INTRODUCTION

Chapter 2

METHODOLOGY

This work has proceeded along two tracks. The first has been gathering primary data through field work as well as using 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 learned 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.

2.2 Data sources

I began learning and working with Nuuchahnulth at the start of 2015. 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). Matthew Davidson has digitized two of these volumes (Sapir & Swadesh 1939, 1955) and has provided me access to it. Without this work, searching through the texts for grammatical constructions would have been much harder.

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.

2.3 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 earlier from Simon Lucas (Nuuchahnulth name *yuułnaak*, Heshquiaht tribe, northern dialect), the late husband of Julia Lucas. I later spent much of March and April of 2019 in Ucluelet, working with the same speakers, and some of this work was in tandem with work carried out by the First Nations Education Foundation.

I have made an effort to make my work, especially 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 band office has 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 many 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 all other speakers, which is a lasting artifact and can be used to answer questions beyond the scope of my dissertation. In total, I have about seven hours of recordings from my field work, about three hours of which are texts that are continuous or mostly continuous Nuuchahnulth.

None of the below methods worked all of the time. Anecdotally, I found that staying in Nuuchahnulth for longer periods of time helped more than anything else, although this was quite difficult to do.

2.4 Methods of Elicitation

I used eight methods of elicitation, the aim of all which was to obtain the most natural Nuuchahnulth examples or grammatical judgments that are relevant to the phenomenon under investigation. Some methods worked better than others. Only one of my consultants was literate in the language, and while she would correct my pronunciation sometimes by writing out a word, she preferred to work in an oral environment and have me read my notes back to her. As a rule, these elicitation sessions occurred in either a completely or nearly-completely oral context. All Nuuchahnulth speakers I worked with were bilingual in English.

2.4.1 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 Nuuchah-

nulth. One set I used was a series of photos of dogs at a reserve. The dogs are standing at a 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), and "The man pilots 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.

2.4.2 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. I hoped elicit a response that used the grammatical phenomenon I was investigating.

For instance, one of my setups was the following (spoken in Nuuchahnulth): "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. For instance, one response I got to this prompt was (1)

(1) hitaaqɬ̓iʔaƛ̓ qʷayaċiik.

hitaaqɬ̓iƛ̓=!aƛ̓ qʷayaċiik

in.forest.MO=NOW wolf

'The wolf went into the forest.' (**N**, Fidelia Haiyupis)

I had similar issues with other question-answering. Speakers preferred to answer as succinctly as possible, which was not useful for the phenomena I was investigating. There may be a more fruitful way of using this kind of elicitation method, but I was unable to find it.

2.4.3 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, and in the relevant chapters I will give counts of grammatical phenomena in texts I collected as well as some historical texts.

2.4.4 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 requires them. 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 know.

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. 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.

2.4.5 Forced Choice

Forced choice gives the speaker a few examples to choose from when trying to select the best way to describe something. This strategy was a mixed bag. Very frequently speakers would reject both, or offer a third way of saying it and refuse to choose between those presented. On the other hand, giving speakers a limited set of choices sometimes led them to describe what made one or all sentences bad, for example "It could mean something else." Speakers would more frequently volunteer reasons why a sentence is bad if there were other options present, or if all options were bad.

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:

(2) ? ʔuusaaḥimta naẏaqakʔi wikitaḥ ƛuł weʔič.

ʔuusaaḥi=(m)it=maˑ naẏaqak=ʔiˑ wik=(m)it=(m)aˑḥ ƛuł weʔič
because.of=PST=REAL.3 baby=ART NEG=PST=REAL.1SG good sleep
? 'I didn't sleep well because of the baby.'

(3) ? ʔuusaaḥiqḥita naẏaqakʔi wikitaḥ ƛuł weʔič.

ʔuusaaḥi-(q)ḥ=(m)it=maˑ naẏaqak=ʔiˑ wik=(m)it=(m)aˑḥ 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 Bob Mundy strongly rejected (3), and this helped me understand how the because words interacted with the linker morpheme.

I also attempted to put together a list of standard sentences testing for ordering preferences. I presented the below to Checleseht speaker Sophie Billy.

(4) mamuukẇiƚsin hił maatmaas.

mamuuk-ẇiƚs=(y)in hił maatmaas
work-going.to=WEAK.1PL be.at house.PL
? 'We will work at Mahtmahs.'

(5) hiɬẇiɬsin maatmaas mamuuk.

hił-ẇiɬs=(y)in	maatmaas	mamuuk
be.at-going.to=WEAK.1PL	work	house.PL

? 'We will work at Mahtmahs.'

Sophie Billy preferred (5). I believe both utterances are grammatical, but there is an overall preference to express locations first. I will go into more depth about this preference in §4.

2.4.6 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, and it is easier to do. 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 overt second position inflection, with a serialized verb construction where the verbs must necessarily share the command mood. The construction would minimally have two sequential verbs and perhaps the benefactive verb to express "for your mother."

2.4.7 Grammatical judgments

It is a cultural Nuuchahnulth value not to overtly correct people, and especially not to do so in public. While this is perhaps a good cultural practice for creating a healthy community, it is bad for linguists trying to learn what is and is not grammatical in a language.

Straight grammatical judgments—is this utterance a part of the language or not—are necessary in linguistic descriptions. These are also necessarily linguist-constructed, so I would put together a sentence, and ask about it. In my first few attempts, speakers would typically respond with "I suppose you

could say it that way," or "I understand you." Even asking "Would you say that?" or "Am I saying it correctly?" speakers are typically hesitant to offer a correction unless the sentence was completely unintelligible.

The way I attempted to get around this was by asking speakers if what I said sounded like their dialect, like something they might say, and if they could repeat it. If a speaker consistently would rephrase the utterance when repeating it, I took it to mean that my version was likely ungrammatical. If I gave an example sentence out of the blue, I tried to provide context. I often have the best success with getting clear judgments by rephrasing speaker utterances when we were working on something else. I would add, remove, or move an element, and sometimes change the setup. Speakers were much more willing to give a firm yes or no in this context.

2.4.8 Constructing a sentence

There were many instances where I would ask speakers, "Can you think of a case where you would use this word?" I constructed this method on the fly, as speakers would reject examples I thought were grammatical, or I could not come up with a context that would elicit the construction I was looking for. In most of these cases, I was trying to get an example of a word with a linker morpheme attached (§5).

2.5 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 subset of Nootka Texts stories I was familiar with, 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 run a script that would generate a format readable by the implemented grammar (see §2.6).

2.6 Implementation through the DELPH-IN framework

My grammatical analysis has been through the DELPH-IN[1] framework, which is a computationally-implemented formalism of 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; Flickinger & Bender 2003; Bender et al. 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 ]],
    NON-HEAD-DTR.SYNSEM canonical-synsem ].
```

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

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 code 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 the parent node is no longer looking for any complements. This process is called cancellation, and is how HPSG keeps track of the saturation of a verb's argument structure.

All of the above rule specifications are from the Grammar Matrix, and part of the provided analyses when the system generates an output grammar based on a user's answer to questions. So far, the `basic-head-1st-comp-phrase` 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. For instance, I added the below rule which allows for a dropped subject:

```
nuk-head-opt-subj-phrase := decl-head-opt-subj-phrase &
```

```
[ HEAD-DTR.SYNSEM [ LOCAL.CAT [ HEAD [ FORM finite,
                                       AUX + ],
                                VAL.SUBJ < synsem-min > ],
                    NON-LOCAL.SLASH <! !> ] ].
```

This rule inherits from the `decl-head-opt-subj-phrase` rule in the Grammar Matrix. It further specifies that the node having its subject dropped (the head daughter) needs to be finite, an auxiliary (which in my grammar means headed by a second position enclitic, §3.1.3), and that it has no gapped elements (an empty SLASH list). This rule definition is not generated by the Grammar Matrix.

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 as a result of that assumption the DELPH-IN toolsets are focused 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 *ʔuumaćukʷaƛaḥ quʔušin* 'I am going to talk about Raven' is represented in my grammar in its already-segmented form, "ʔu-L.maćuk =!aƛ=(m)aˑḥ quʔušin."

Secondly, I am 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 multiple test suites of example sentences, which included both grammatical and ungrammatical examples. The three test suites I used are: (1) a basic test suite for basic grammatical sentences; (2) a test suite of serial verbs and linker constructions; (3) a test suite of example sentences that appear in this dissertation. For the first test suite, basic components of the grammar, I used simple example sentences from stories, sessions with consultants, and sentences whose grammat-

icality or ungrammaticality I was very confident about. In the end, a lot of this test suite was sentences that I created. For the second test suite, the phenomena under investigation in this document, I used only grammatical examples from my elicitation and corpora work, and ungrammatical examples form my elicitation sessions. These came from my collated data (§2.5). All test suites were 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 had 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 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 do not affect the descriptive 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 `https://bitbucket.org/davinman/nuuchahnulth-grammar/`.

Chapter 3

THE BASIC CLAUSE

Before addressing the main theme of this dissertation, the multi-predicate constructions present in Nuuchahnulth, I will first give an overview of the language's basic clause structure and define some important terminology and lexical and syntactic distinctions present in the language. As with the following chapters, I will first give the data (§3.1), followed by my HPSG analysis (§3.2). I will begin with the predicate/participant distinction (§3.1.1, §3.1.2), an important syntactic split which roughly maps to how verbs and nouns are used in English, but subsumes many lexical categories in Nuuchahnulth. I will then give my understanding of the second-position clausal enclitics (§3.1.3), followed by another set of second position elements traditionally understood to be suffixes (§3.1.4). Finally I will give an overview of the aspectual system (§3.1.5). In the HPSG analysis, I will give my implementation for these in the same order: the predicate/participant distinction (§3.2.1), the clausal second position elements (§3.2.2), suffixing second position (§3.2.3), and aspect (3.2.4).

3.1 Data

3.1.1 Syntactic Predicates

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 (Jacobsen 1979). Because the term "predicate" and its associated derivations ("predicative" and so on) are often ambiguous between syntactic and semantic concepts, I have found that linguists often talk past each other when trying to describe the syntax of South Wakashan languages. Throughout this work I will use special vocabulary in an attempt to reduce this confusion.

I will reserve the word *predicate* to refer to the syntactic component that provides the main semantic relation of a clause and connects elements like subject and object to one another. In English, a syntactic

predicate must be verbal, as in (6,7). The verb 'barks' serves as the predicate of (6), and has 'the dog' as its subject. In (7), 'is' serves as the predicate, connecting its subject 'the grass' to the complement 'green.' I will refer to the units that predicates connect as *participants*—this term encompasses both subject and complements. The sole participant of (6) is 'the dog', and the participants of (7) are 'the grass' and 'green'.

(6) $[\text{The dog}]_{\text{participant}}$ $[\text{barks}]_{\text{predicate}}$.

(7) $[\text{The grass}]_{\text{participant}}$ $[\text{is}]_{\text{predicate}}$ $[\text{green}]_{\text{participant}}$.

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 (6), the English word *barks* has the relation BARK. Every semantically contentful morpheme has a relation, including syntactic participants (DOG, GRASS, GREEN).

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 in a Neodavidsonian manner as BARK(e, x). Note that the relation itself BARK is at least conceptually separate from the number and type of its arguments. When I find it important to highlight the separation between the semantic relation and the number of its arguments, I may also refer to the relation as a *predicate symbol*.[1] This semantic scheme is a simplification of the fuller semantic model that I will use later, Minimal Recursion Semantics (Copestake et al. 2005).

The number of arguments that a semantic relation has is separate from its syntactic properties. The English predicate *barks* may be represented as a semantic relation with two arguments BARK(e, x). However, the syntactic non-predicate *green* can be modeled in the same way: GREEN(e, x). The syntactic properties of *barks* and *green*—predicate vs participant, which in English is straightforwardly subsumed into the verb vs adjective distinction—is separable from their semantic properties.

Though Nuuchahnulth has 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

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

phrase," "noun phrase," and "adjective phrase" are valid insofar as they refer to a phrase headed by a verb, noun, or adjective, but they are not illuminating for determining syntactic roles, as any of these categories may be predicates.

In (8), the verb *ṅaacsiičiƛ* 'see' is serving as the clausal predicate, while the clause *hałmiiḥa quuʔas* 'drowning person' is serving as the participant. In (9), the adjective *qʷaćał* 'beautiful' is the predicate of the sentence, while the noun *ḥaakʷaaƛ* 'young girl' is the participant. In (10) the noun *pisatuwił* 'gym' is the predicate and there are no participants. In this case, postposed *ʔaanaḥi* 'only' is a predicate-modifying adverb and not fulfilling any argument role of the relation GYM.

(8) ṅaacsiičiƛʔiš hałmiiḥa quuʔas.

ṅaacsa-i·čiƛ=ʔi·š hałmiiḥa quuʔas

see.CV-IN=STRG.3SG drowning person

'He sees a drowning person.' (**N**, Fidelia Haiyupis)

(9) qʷaćałʔiš ḥaakʷaaƛʔi.

qʷaćał=ʔi·š ḥaakʷaaƛ=ʔi·

beautiful=STRG.3 young.girl=ART

'The young girl is beautiful.' (**C**, *tupaat* Julia Lucas)

(10) pisatuwiłma ʔaanaḥi.

pisatuwił=ma· ʔaanaḥi

gym=REAL.3 only

'It's only a gym.' (**B**, Marjorie Touchie)

Descriptively, it is sufficient to say that nouns, verbs, and adjectives may all be clausal predicates in Nuuchahnulth, in the same way that English requires clausal predicates to be verbs. I believe that this data, along with evidence from participant clauses (§3.1.2), is sufficient to claim that nouns are events in Nuuchahnulth (Inman 2018). I will give my method for modeling this in (§3.2.1).

3.1.2 Syntactic Participants

Just as verbs, nouns, and adjectives may all be predicates, they may also all be participants. Example (9) showed a straightforwardly nominal participant, the noun and article *ḥaakʷaaƛ̓ʔi* 'the young girl.' However, verbs (11) and adjectives (12) may also serve as participants.

(11) 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)

(12) wiḵiičʔaał ƛ̓iixċus ƛaƛuuʔi.

wik=!iˑč=ʔaał ƛ̓iixċus ƛaƛuu=ʔiˑ

NEG=CMMD.2PL=HABIT laugh.at.DR other.PL=ART

'Don't laugh at others.' (C, *tupaat* Julia Lucas)

As detailed in Jacobsen (1979) and Wojdak (2001), when an adjective or verb is used as a participant, as in (11, 12), the article *=ʔiˑ* is required to make the sentence grammatical. When the participant is headed by a common noun, as in (8), 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 that the article *=ʔiˑ* is in fact a relativizer that creates a participant from a notional predicate Inman (2018).[2] Noun phrases may be relativized without the article, but other predicate phrases must be headed by the relativizing second position article *=ʔiˑ*. That is, the semantics of the verb *kamatquk* 'run' and the noun *pisatuwił* 'gym' look like:

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

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

[2]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.

The event variable *e* allows for tense, aspect, mood, and evidentiality values (TAME). This *e* is also necessary for adverbial modification, which both verbs and nouns can undergo. However, when either type of word is used as a participant in the syntax, it is the variable (*x*) that is needed by the semantics. *=ʔiˑ* provides the relativizing function to accomplish this for all predicate types, and common nouns may undergo this process without an overt *=ʔiˑ* attached. The analytical mechanisms for this will be addressed more fully in §3.2.1. Here, it is enough to say that verbs, adjectives, and common nouns are all semantically eventive. The predicate/participant distinction in the syntax reflects the accessibility of the event variable: syntactic predicates may have their event accessed and modified, while syntactic participants may not.

There is a strong tendency in Nuuchahnulth for each clause to have one overtly-expressed participant (Rose 1981:38) 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 (Jacobsen 1993:267), and a preference in the northern dialects (Northern and Kyuquot) for VOS ordering (Werle, *p.c.*). This preference is not absolute, and to make the sentence unambiguous, speakers can use *ʔuukʷiɬ* to mark any non-highest argument (Woo 2007).

3.1.2.1 Participant Fronting

It is possible for speakers to move a participant in front of the predicate for focus, as in (14). This left-dislocated participant is notably outside the calculation for second position inflection (§3.1.3).

(14) ƛ̓aaq ʔuʔaatamin, waaʔaƛ̓weʔin quʔušin.

ƛ̓aaq ʔu-ʔaˑta=(m)in waa=!aƛ̓=weˑʔin quʔušin

oil x-lack=REAL.1PL say=NOW=HRSY.3 raven

‘ “We need *oil*,” said Raven.’ (**B**, Marjorie Touchie)

Wh-words and phrases also front, obligatorily, as in (15). In this case, the second position enclitics attach to the wh-word, so this fronting is “inside” the second position calculation.

(15) quḥaačłnik hił ċuumaʕaas.

quḥaa-či·ł=nik hił ċuumaʕaas

how.many-day=PST.QUES.2SG be.at Port.Alberni

'How many days were you in Port Alberni?' (**Q**, Sophie Billy)

It is not only wh-words that front in this manner. Quantifiers tend to front as well. In the case where the fronted quantifier is part of a larger syntactic unit (for instance, as an participant of the non-highest-argument marker *-L.(č)iɬ*), the entire phrase is fronted along with the quantifier (16, 17). In cases where a non-nominal phrase is fronted like this, it cannot appear outside the clausal clitics (18).

(16) haʔukquuʔaała ʔuušił haʔum.

haʔuk=quu=ʔaała ʔuuš-L.(č)iɬ haʔum

eat.DR=PSSB.3=HABIT some-DO.TO food

'He would only eat some things.' (**B**, Bob Mundy)

(17) ʔuušiłʔaała haʔuk.

ʔuuš-L.(č)iɬ=ʔaała haʔuk

some-DO.TO=HABIT eat.DR

'He ate some things.' (**B**, Marjorie Touchie)

(18) *ʔuušił haʔukquuʔaała.

ʔuuš-L.(č)iɬ haʔuk=quu=ʔaała

some-DO.TO eat.DR=PSSB.3=HABIT

Intended: 'He would only eat some things.' (**B**, Bob Mundy, Marjorie Touchie)

When the quantifier fronts without the enclitic complex, its interpretatio is as as a bare nominal (19).

(19) ʔuuš ẅaacsamitsƛ̓a hiłqḥ ẅačiqs.

ʔuuš ẅaacsa=(m)it=s=ƛ̓aˑ hił-(q)ḥ ẅačiqs

some see.CV=PST=STRG.1SG=also be.at-LINK Tofino

'I also saw some at Tofino.' (C, *tupaat* Julia Lucas)

My analysis of these facts is to describe two types of fronting: (i) focus-fronting of participant nominals, which falls outside the calculation for second position enclitics and adds focus information to a word; and (ii) non-focus quantifier fronting, which falls inside the second position calculation, does not add focus, and fronts the entire phrase with the quantifier (here, the phrase headed by object-marking *-L.(č)iɬ*). Non-focus fronting does not mean that the word is necessarily not focused, only that its left-extracted position is not giving it focus. This is significant as, according to many analyses, wh-words must be focused (Lambrecht 1996:Chapter 5). Table 3.1 gives the parts of speech that are compatible with each type of fronting.

Table 3.1: Fronting properties of different words

	nouns	quantifiers	wh-words
Focus fronting	✓	✓	✗
Non-focus fronting	✗	✓	✓

3.1.3 Second-position clitics

The majority of clausal inflection in Nuuchahnulth is in a complex of second position enclitics which attach to the first word of the clause, modulo left extraction (§3.1.2). Table 3.2 shows the ordering of the clitic complex, and is adapted from Adam Werle's grammar reference. A fuller list of these enclitics is given in Appendix B.3.

The =∅ morpheme, which indicates the third-person neutral mood, merits some special attention. While there is no phonological element associated with this inflection, all of the other enclitics appear in their typical order around where it would be. A predicate with no enclitic, or with one or more of the

Table 3.2: Order of second position clitics

morph	=ʔaaqƛ̓	=!ap	=!aƛ̓	=!at	=uk =ʔak	=(m)it	=ʔi·š =ma· =ḥa· =∅ ...	=ʔaała	=ʔał	=ƛ̓a·
meaning	FUT	CAUS	NOW	PASS	POSS	PST	subject-mood portmanteaus	HABIT	PL	also

non-subject-mood enclitics (such as past, or habitual and plural) is always interpreted as being in the neutral mood with a third person subject. I do not put a =∅ in my gloss lines, except below in (23) to show that it is notionally present. The syntactic information about neutral mood and 3rd person subject has to come from somewhere and this can be modeled as a phonologically empty morpheme providing it. I address this more in the implementation section (§3.2.3).

The examples I have given so far have all shown this clitic complex attaching directly to the clausal predicate. However, it may also attach to preceding adverbial modifiers (20), conjunctions (21), and adpositions (22).[3] Likewise, the relativizing enclitic article (§3.1.2) may also attach to a preceding modifying adjective (23) and not directly to the head noun, as seen in (9).

(20) ẏuuqʷaaʔaqƛ̓s ṅaačuk.

ẏuuqʷaa=!aqƛ̓=s ṅaačuk

also=FUT=1SG look.for.DR

'I will also look for it.' (**C**, *tupaat* Julia Lucas)

[3]The claim that (22) is an adposition 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, and is necessary within the HPSG framework. In this model, non-agentive arguments may be realized by a Participant Phrase or an Adposition Phrase headed by *-L.(č)iɬ*. This means that in (22), the word *ḥiišiɬ* is an adposition phrase modifying the following verb *ʔiiqḥuk*.

(21) 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)

(22) ʔuukʷiɬẁiɬasaḥ haaʕin čims.

ʔu-L.(č)iɬ-ẁiɬas=(m)a·ḥ haaʕin čims

X-DO.TO-going.to=REAL.1SG invite.DR bear

'I'm going to invite bear' (**B**, Marjorie Touchie)

(23) ṁuyaa ḥaa ƛ̓aʔuuʔi maḥɬ̓ii.

ṁu-(y)a·(=∅) ḥaa ƛ̓aʔuu=ʔi· maḥɬ̓i·

burn-CV(=NEUT.3) D3 other=ART house

'The other house was burning.' (**C**, *tupaat* Julia Lucas)

Every clause in Nuuchahnulth contains an enclitic, even if it is only the notional =∅ third person neutral enclitic. With the exception of left extraction, the enclitic always appears on the first word of the clause, which is either the predicate or a preceding adverb. Together with the restrictions on syntactic predicates, I use this data to claim that the clitic complex is the syntactic head of the clause in Nuuchahnulth, and the clitic complex selects for a predicate complement. The second position enclitic complex is then the auxiliary head of the clause, and inherits its valence (number of complements) from the predicate, which also provides the main semantic relation of the clause. Because of its second position properties, the analysis of Nuuchahnulth clitics requires some special attention in HPSG (§3.2.2), but descriptively I can stop at calling the enclitic complex the head of the Nuuchahnulth clause.

One final fact about the clause worth mentioning is clitic spreading. The presence of a clitic *in situ* within the second position complex is required. If the clause is passive, the passive morpheme must appear within the complex, and so on. However, some of these clitics may appear multiply within a clause: first in the second position enclitic complex, and then later on the predicate(s) of the sentence.

This occurs in cases where there is a preposed adposition (24),[4] a preposed adverb (25, 28), a preposed quantifier (26),[5] or a clefting construction (27). In all these cases, there is a syntactic reason for the second position clitic complex to fall on something other than the main predicate of the clause, and some of the clitics then appear multiply: first within the second position complex (obligatorily) and then later on the main predicate (optionally). To my knowledge, the only clitics that "spread" like this are *=!aƛ* 'now' (24, 25), *=!at* PASSIVE (26, 27), and *=!ap* CAUSATIVE (28). I will come back to how multiple instances of the valence-altering clitics *=!at* and *=!ap* function within serialization structures in §4.2.2.

(24) ʔuyiʔeƛna hawiiʔeƛ kaaƛḥšiʔeƛquu.

ʔuyi=ʔaƛ=naˑ hawiiƛ=!aƛ kaƛḥ-šiƛ-LS=!aƛ=quu

at.a.time=NOW=NEUT.1PL finish=NOW be.light-MO-GRAD=NOW=PSSB.3

'We stop when it starts getting light.' (**C**, *tupaat* Julia Lucas)

(25) ẏuuqʷaaʔaƛweʔin ƛ̓iḥmaḿit ʔunaaƙaƛ yaaqʷapakʔitq ƙʷičiƛ.

ẏuuqʷaa=!aƛ=weˑʔin ƛ̓iḥmaḿit ʔu-naˑk=!aƛ yaqʷ-L.apak=ʔiˑtq ƙʷi-čiƛ

also=NOW=HRSY.3 woodpecker X-have=NOW who-beyond=DEFN.3 stick-MO

'And also Woodpecker had his man who was best of all in marksmanship.' (**B**, Sapir & Swadesh 1939:50)

(26) ʔuušḥʔatquus ṅaačuƙʷat, ʔiiqḥuƙum ʔanis weʔič.

ʔuuš-(q)ḥ=!at=quus ṅaačuk=!at ʔiiqḥuk=!um ʔani=s weʔič

some-LINK=PASS=PSSB.1SG look=PASS tell.DR=CMMD.GO COMP=1SG sleep.DR

'If anyone is looking for me, tell them I'm sleeping.' (**B**, Marjorie Touchie)

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[4]For the argument that *ʔuyi* is an adposition, see §5.2.2.

[5]In this instance the quantifier has a linker attached. The semantics of the linker will be addressed in §5.

(27) ʔuḥʔatsʔał ʔumʔiiqsakqs ṁaẇaaʔat ƛ̓iisuwiɬ.

ʔuḥ=!at=s=ʔa·ɬ ʔumʔiiqsu=ʔak=qs ṁaẇaa=!at ƛ̓iisuwiɬ

be=PASS=STRG.1SG=HABIT mother=POSS=DEFN.1SG bring.PF=PASS school

'It's my mother who brings me to school.' (**N**, Fidelia Haiyupis)

(28) ʔiqsiłapƛ̓aa hinʔatap ḥiiṅaakʔi.[6]

ʔiqsiła=!ap=ƛ̓aa hinʔatap ḥiiṅa=ʔak=ʔi·

still=CAUS=also in.water.CAUS quartz=POSS=ART

'Again they put the quartzes under water.' (**B**, Sapir & Swadesh 1955:60)

It is significant that in all the above examples, this syntactic doubling does not indicate any semantic doubling. In all of the examples, the unit that the second position enclitic attaches to is not notionally compatible with the semantics of "now," or the application of a causative or passive.[7] That is, the examples here all show a strictly syntactic, not semantic, phenomenon.[8] This syntactic "doubling" is restricted to the clause in which the semantics of the morpheme apply. This can be seen in (29, 30) below, where the *=!aƛ̓* 'now' morpheme cannot be introduced in the subordinate clause, where it would alter the semantics in a bizarre or unintelligible way.

(29) ɬapatšiʔaƛ̓s ʔucačiƛ̓ ċaʔakʔi.

ɬapat-šiƛ̓=!aƛ̓=s ʔu-ca-čiƛ̓ ċaʔak=ʔi·

think-MO=NOW=STRG.1SG X-go-MO river=ART

'I decided to go to the river.' (**N**, Fidelia Haiyupis)

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[6]Corrected to ḥiiṅaakʔi from hiinaakʔi.

[7]The possible exception to this is (24), if *ʔuyi* is understood as a full verb. As mentioned above, I believe it is an adposition.

[8]This is not the case under serialization, where causative and passive morphology may affect only one verb under serialization (§4.2.2).

(30) *ɬapatšiʔaƛs ʔucačiʔaƛ ċaʔakʔi.

*ɬapat-šiƛ=!aƛ=s ʔu-ca-čiƛ=!aƛ ċaʔak=ʔiˑ

think-MO=NOW=STRG.1SG X-go-MO=NOW river=ART

Intended: 'I decided to go to the river.' (**N**, Fidelia Haiyupis)

3.1.4 Second position suffixes

Another set of second position elements are verbal suffixes. Nuuchahnulth has a series of suffixing elements that attach to the leftmost item in their object. Although it is outside the scope of this dissertation, there is good independent reason to believe that these elements are suffix-like in the traditional sense, rather than clitic-like. Briefly, they are more tightly phonologically integrated into their root than the clausal clitics, they can attach to bound roots (the clausal clitics may not), and they occasionally produce unpredictable semantics. I will here simply assume their status as lexical suffixes with second position properties, rather than phrasal clitics.

The second position suffixes have been the locus of a fair amount of recent linguistic research in Nuuchahnulth, notably Waldie (2004), Wojdak (2005), and Woo (2007). Wojdak (2005) gives a detailed account of these suffixes under the Minimalist program. Wojdak breaks these suffixes into two broad categories, affixal main predicates (in my terminology, verbs which take plain participant complements) and affixal auxiliary predicates (verbs which take a complement that is predicative). I think this split is correct (although I will add some more basic categories), but disagree with her overall account in at least one important way that is not attributable to our difference in framework. Wojdak claims that these suffixes are insensitive to the category they attach to, but are ordered through linearity effects (p. 52–54) and that this is at root a syntactic and not morphological process. This claim captures a lot of good generalizations but I think it misses some complicating factors.

For instance, Wojdak claims (p.52–53) that the main predicate suffixes may attach to their nominal complement or a modifier of that complement (nouns, adjectives, quantifiers, wh- and relative pronouns). However, these suffixes also routinely attach to adverbs (see (37) below), in which case the adverb is clearly modifying the suffix verb itself. She also claims that the auxiliary predicates do not take

the root *ʔu-* (p.150), but this is not universally true of this class of suffixes, which enjoy a lot of lexical diversity (§3.1.4.2).[9] Wojdak attempts a full account for the incorporation properties of all these suffixes, and in particular gives an excellent account of their scopal properties. I have the luxury of only addressing this incredibly complex part of Nuuchahnulth grammar in passing to my main point. I will give the attachment properties of the main predicate suffixes (3.1.4.1) and auxiliary predicate suffixes (3.1.4.2) as I understand them and have modeled them, without staking a claim to the exhaustiveness of this analysis. Despite some differences to my account, I would point the interested reader to Wojdak (2005) for a more complete accounting of these suffixes.

I break the second position suffixes broadly into three categories: (i) main predicate suffixes (§3.1.4.1), which are transitive (and ditransitive) verbs that take referential complements; (ii) auxiliary predicate suffixes (§3.1.4.2), which modify predicates which they subject control; and (iii) location suffixes (§3.1.4.3), which Wojdak (2005) treats as a subtype of the main predicate suffixes, but I believe have some special properties. Finally, I note some suffixes which do not appear to fall under any of the above categories (§3.1.4.4) and may represent further diversity among this class. I am only intending here to give an overview of these categories, only with sufficient detail will help illuminate later analyses.

3.1.4.1 Main predicate suffixes

The main predicate suffixes semantically relate referents (not events) to one another. They can be either transitive or ditransitive. That is, their basic semantic type is:

(31) RELATION(*e*, *x1*, *x2*, (*x3*))

This includes relations such as HAVE, TAKE, FIND, GATHER/HUNT, CONSUME, and so on (expressed with *-naʷk*, *-L.!iƛ*, *-L.waƛ*, *-R.!iiḥ*, and *-iis* respectively). The only ditransitives in this group that I know of are the suffix *-ayiʷ*, which expresses the relation GIVE.

I will use the suffix verb *-naʷk* 'have' to illustrate the syntactic attachment properties of these suffixes.

[9]Her account of syntactic incorporation also has difficulty with idiosyncratic meanings, which one occasionally encounters with these suffixes. This is perhaps an unfair critique, however, as idioms are difficult for most syntactic theories, and these idiosyncrasies could be understood as idiomatic.

Each sentence in (32–34) shows a longer direct object of 'have': song, two songs, two long songs. The suffix verb always attaches to the first element in the object.

(32) nuuknaaks.

nuuk-na·k=s

song-have=STRG.1SG

'I have a song/songs.' (**N**, *yuułnaak* Simon Lucas)

(33) ʔaƛanaks nuuk.

ʔaƛa-na·k=s nuuk

two-have=STRG.1SG song

'I have two songs.' (**N**, *yuułnaak* Simon Lucas)

(34) ʔaƛanaks ẏaaq nuuk.

ʔaƛa-na·k=s ẏaaq nuuk.

two-have=STRG.1SG long song

'I have two long songs.' (**N**, *yuułnaak* Simon Lucas)

Instead of attaching to a semantically contentful word, the suffix verb can attach to the empty root *ʔu-*, which I gloss as X. In this construction, the object can either appear after the suffix verb (35) or be dropped (36). Syntactically, the second position effect persists, if the *ʔu-* root is seen as part of the object, but carrying no semantic content.

(35) ʔunaaks ċiiqẏak.

ʔu-na·k=s ċiiq-ẏak

X-have=STRG.1SG chant-for

'I have a chant.' (**N**, *yuułnaak* Simon Lucas)

(36) ʔiiqḥiis ʔuna·k.

ʔiiqḥii=s ʔu-naak

still=STRG.1SG x-have

'I still have it.' (**N**, Fidelia Haiyupis)

It is also possible for these elements to attach to an adverb. In this case, the adverb is always modifying the verb's event, as in (37).

(37) qiinaakitaḥ ʕiniiƛ.

qii-na·k=(m)it=(m)a·ḥ ʕiniiƛ

long.time-have=PST=REAL.1SG dog

'I have had a dog for a long time.' (**B**, Bob Mundy)

This second position only scopes over the VP, and is separate from the clausal second position (§3.1.3). As seen already in (36) and (38), the clausal second position occurs separately from the second position of the suffix verb. I give two more examples of this clear separation in with a negator (38) and a conjunction (39).

(38) wiƙii ʔaanamaċuk ṗišaq ʔuyaqḥmis.

wik=ƚi· ʔana-L.maċuk.DR ṗišaq ʔuyaqḥ-mis

NEG=CMMD.2SG only-talk.about bad news-NMLZ

'Don't only talk about bad news.' (**C**, *tupaat* Julia Lucas)

(39) ʔaḥʔaaʔaƛs ʔuukʷiił yaqwiiʔakqs ƛiisyuu pikčas.

ʔaḥʔaaʔaƛ=s ʔu-L.(č)iił yaq-(t)wii=ʔak=qs ƛiis-yuu pikčas

and=STRG.1SG x-make what-do.first=POSS=DEFN.1SG mark-RS picture

'And then I made my first picture.' (**N**, Fidelia Haiyupis)

These suffixes typically cannot attach to verbs, as seen in (40,41). This makes sense if their semantics expect a referent and not event. With nouns and adjectives, syntactic incorporation incorporates a semantic referent (either that of the noun itself or of the adjective's modifyee). With verbs, there is no clear referent to compose with.

(40) *ciqnaaƙaƛʔiš huuʕiiʔatḥ

ciq-na·k=!aƛ=ʔi·š	huuʕiiʔatḥ
speak-have=NOW=STRG.3	Huuayaht

Intended: 'The Huuayahts have someone speaking.' (**C**, *tupaat* Julia Lucas)

(41) *ƛiḥnaaƙaƛʔiš hinasiƛ maatmaas haaʕinẇiɬas ċišaaʔatḥ

ƛiḥ-na·k=!aƛ=ʔi·š	hinasiƛ	maatmaas	haaʕin-ẇiɬas	ċišaaʔatḥ
row-have=NOW=STRG.3	arrive.at.beach.MO	village	invite-going.to	Tseshaht

Intended: 'They had a rower arrive at the village to invite them to Tseshaht.' (**C**, *tupaat* Julia Lucas)

The reason I attempted the forms *ciqnaak* and *ƛiḥnaak* above is they both appear in the Nootka Texts (Sapir & Swadesh 1939, 1955). My consultant Julia Lucas decided that *ciqnaak* must be the equivalent of the modern word *ciqḥsii* 'speaker' and corrected *ƛiḥnaak* to *ƛiḥaas*. Below are examples of the words as used in the Nootka Texts.

(42) ciqnaaƙaƛ ʔaḥʔaa ẏuuqʷaa huuʕiiʔatḥ.

ciq-na·k=!aƛ	ʔaḥʔaa	ẏuuqʷaa	huuʕiiʔatḥ
speak-have=NOW	DDYN	also	Huuayaht

Intended: 'The Huuayahts have someone speaking.' (**B**, Tom Sayaaċapis Sapir & Swadesh 1955:169)

(43) ʔaḥʔaaʔaƛ̓ ƛ̓iḥnaaḵ̓aƛ̓ hinatimyisnaḵ̓aƛ̓ hitaqƛ̓iɬʔatḥʔi maatmaas

ʔaḥʔaaʔaƛ̓ ƛ̓iḥ-naˑk=!aƛ̓ hinatimyis-naˑk=!aƛ̓ hita-!aqƛ̓-ᵒiɬ-ʔatḥ=ʔiˑ

and.then row-have=NOW invite-have=NOW EMPTY-inside-at.beach.DR-live.at=ART

maatmaas

village

'Then they had someone go in a canoe to invite the tribes of the inside region.' (**B**, Tom Sayaaču̓apis Sapir & Swadesh 1955:297–298)

I believe that the *-naˑk* form here has different lexical properties from the *-naˑk* form discussed above that is in use in the modern language. The *-naˑk* seen in (42,43) has the meaning of *subject have someone do X on subject's behalf*. It appears to be productive, as it also occurs on *hinatimyis* 'invite' in (43), and a few other forms as well in the Nootka Texts. This is a very interesting form of suffix verb, but between the semantic difference and the fact that it is unrecognizable to contemporary speakers I've worked with, I believe that this is a case of two separate lexical meanings of a suffix. I think that the rest of my (and Wojdak)'s) analysis for main predicate verbs, where verbal roots are generally not seen, still holds.

Despite the general rule in the modern language of forbidding lexical roots, some main predicate suffixes idiosyncratically attach to verbal roots, but the result yields unpredictable semantics. For instance, the suffix *-L.!iƛ̓* 'take' can idiosyncratically attach to the verb root *ṅikʷ-* 'claw' to yield *ṅiiḵ̓ʷiƛ̓* 'take by clawing.' This does not describe two actions: a clawing event, and then a taking event, but one event of seizing in talons or claws. This instrumentative reading is unpredictable and does not occur productively. Another example is the suffix *-(y)uʔaɬ* 'see', which I have most commonly encountered attaching to the verb root *ṅač-* to form *ṅačuʔaɬ* 'see (esp. a person).'[10] This lexical doubling 'see-see' is again unpre-

[10]Though less common, is possible for *-uʔaɬ* to attach in the "normal" way of a suffix verb as well, as in (44).

(44) ʔiiḥuʔaɬitaḥ quuʔas ʔukɬaa Adam.

ʔiiḥ-(y)uʔaɬ=(m)it=(m)aˑḥ quuʔas ʔu-(k)ɬaˑ Adam

big-see=PST=REAL.1SG person x-call Adam

'I saw a big person named Adam.' (**B**, Marjorie Touchie)

dictable. I treat all these cases of verb attachment as unanalyzable, single lexical items.

This class of suffixes also attaches to root forms, when available. This can be seen in words like *quuʔac-iic* 'belonging to a Native person,' where the bound root form *quuʔac* 'person' is used instead of the free form *quuʔas*. This also occurs with *łuč-naak* 'have a wife,' where the bound root form *łuč* 'woman' is used instead of the free form *łuucsma*. If a word does not have a special bound form, the free form is used.

The first class of second position suffixes, then, are transitive and ditransitive verbs that take referential arguments. They attach to the first element of their complement, either the noun itself or a modifying adjective, or they may attach to the semantically empty root *ʔu-* and take complements in the normal manner. They may also attach to an adverb, in which case the adverb modifies the semantics of the suffix verb itself. They do not generally attach to verbs, but when they do it is lexically specific and the result is semantically unpredictable.

3.1.4.2 Auxiliary predicate suffixes

The second class is auxiliary predicate suffixes. These tend to have modal or modal-like semantics, and relate a referent to an event. That is, the basic semantics are as below.

(45) RELATION(e, $x1$, $e2$)

They are also all subject control verbs (Wojdak 2005:p. 160): the subject of the auxiliary predicate must match the subject of the predicate's complement. This means that the $x1$ of the relation above is always identified with the (possibly passivized) subject of whatever the $e2$ is.

Syntactically, these suffixes behave in some similar ways to the transitive verb suffixes and exhibit second position syntax. As I used *-naˑk* to exemplify the main predicate suffixes, I will use *-maḥsa* 'want to do' to exemplify the auxiliary predicate suffixes. The most straightforward way to use these suffixes is to attach them to a verbal predicate, as in (46). As a suffix subject control verb, the subject of the wanting event in (46) is the same as the subject of the grabbing event.

(46) hišuƙaƛ čaakupiiḥ sukʷiƛmaḥsa ḥaa ṗaacsaćumʔi

hišuk=!aƛ čaakupiiḥ su-kʷiƛ-maḥsa ḥaa ṗaacsaćum=ʔiˑ

all=NOW man.PL hold-MO-want.to.do DDYN football[12]=ART

'All the men want to get that *ṗaacsaćum*.' (C, *tupaat* Julia Lucas)

Like with the main predicate suffixes, this class of suffix can also attach to a preceding modifier of its argument. Since the normal argument of the auxiliary predicate suffixes is a verb, this means they can attach to a modifying adverb, as in (47).

(47) ʔaanimaḥsas waa ʔin čamiḥtaʔaƛni ʔiiḥʔiiḥa ...

ʔaani-maḥsa=s waa ʔin čamiḥta=!aƛ=niˑ ʔiiḥʔiiḥa ...

only-want.to=REAL.1SG say COMP proper=NOW=NEUT.1PL do.something.important ...

'I only want to say that we are doing something important ...' (**N**, *yuułnaak* Simon Lucas)

It is much less common, but these suffixes can attach to adjectives and nouns. I only have one example of *-maḥsa* attaching to an adjective in my corpus (48), but I found an example of nominal attachment in the Nootka Texts (49). In both of these cases, the non-verbal element is being treated predicatively and eventively: 'be strong' in (48) and not 'a strong (something)', and 'be a chief (i.e. wealthy)' in (49), and not 'a chief.' I take this as corroborating evidence of the inherent eventiveness of adjectives and nouns (§3.1.1).

(48) ʔunʔuuƛḥwaʔišʔaał ʔin ḥaaʔakmaḥsapsuuk ẁaaẁiiqsu.

ʔunʔuuƛ-(q)ḥ=waˑʔiš=ʔaał ʔin ḥaaʔak-maḥsa=!ap=suuk ẁaaẁiiqsu

because-LINK=HRSY.3=HABIT COMP strong-want.to.do=CAUS=NEUT.2PL older.sibling

'It's because you want to make your older sibling strong.' (C, *tupaat* Julia Lucas)

[12]A *ṗaacsaćum* is not quite a football. It is a ball that is used in a certain kind of *tupaati* competition. The object is for competitors to seize the ball and lift it above their head.

(49) ʔuunuuƛ̓itaḥ ʔaḥkuu ḥawiłmiḥsa waaʔaƛ̓.

ʔuunuuƛ̓=(m)it=(m)aˑḥ ʔaḥkuu ḥawił-miḥsa waa=!aƛ̓

because=PST=REAL.1SG D1 chief-want.to.do say=NOW

‘ “It was because of this that I wanted to be wealthy (= a chief),” he said.’ (**B**, Tom saayaaƛ̓apis, Sapir & Swadesh 1955:25)

Unlike the main predicate suffixes, these suffixes attach to the empty root *ʔu-* only idiosyncratically, and when they do they may have a default interpretation. The suffix *-maḥsa* happens to be one that does attach to *ʔu-*. In the absence of an object, *ʔumaḥsa* has the interpretation of wanting someone sexually.

(50) ʔiiqḥuƛ̓aƛ̓ hišuk maʔas ʔin ʔumaḥsiičiƛ̓.

ʔiiqḥuk=!aƛ̓ hišuk maʔas ʔin ʔu-maḥsa-iˑčiƛ̓

tell.DR=NOW all village COMP X-want.to.do-IN

‘He told the whole village that he wanted her (as his wife).’ (**C**, *tupaat* Julia Lucas)

Other suffixes I put in this category, however, cannot take the *ʔu-* root, despite otherwise behaving in a similar manner to *-maḥsa*. This includes *-ẇiƛ̓as* ‘going to do’, *-L.sinḥi* ‘try to do’, and *-qaˑtḥ* ‘claim, pretend.’ I treat the *ʔu-* attachment of these event-taking suffixes as lexically specified.

Auxiliary predicate suffix verbs semantically modify a complement that is an event. Typically this means they syntactically attach to a verb (46), but they can modify the event properties of an adjective or noun as well (48, 49). These suffixes exhibit the same second position properties of the main predicate suffix verbs, and may attach to an adverb modifying a later predicate complement (47). They only idiosyncratically attach to the root form *ʔu-*.

3.1.4.3 Location suffixes

I believe there is a separate category of second position suffixes, which is location suffixes that relate a figure to a ground. This includes *-ċuˑ* ‘inside a container’ and *-!as* ‘outside.’ These suffixes freely attach to both nouns and verbs, and for both they modify the location, either the location of the noun (e.g., *ʔink* ‘a fire’ and *ʔinkʷ̓as* ‘a fire outside’) or the location of the verb (e.g., *pisat-* ‘play’ and *pisaƛ̓as* ‘play outside’).

It is possible that these may be simple event modification, since nouns are eventive (§3.1.1), and collapsible with auxiliary predicate suffixes. However, there are further differences. Locative suffixes also tend to attach the the empty root *hita-* or *hina-*, instead of *ʔu-*, as in *hitaas* 'outside'. But they also sometimes attach to *ʔu-* as well, as in *ʔućuu* 'inside (something).' I do not have an analysis for this, and leave description of the locative suffixes for future work. I have not analyzed these suffixes in my implemented grammar.

3.1.4.4 Other categories

With the possible exception of the location suffixes, all these categories so far are eventive. The main predicate suffixes relate two referents, but are themselves events that can be modified by an adverb, and behave as a predicate in the syntax (§3.1.4.1). The auxiliary predicate suffixes relate a referent and an event, but again are events in their semantics[13] and syntactic predicates (§3.1.4.2).

There appear to be a few suffixes that are treated as non-predicative in the syntax, and are participants in the syntax, or ambiguously so, as with nouns. This category, if it exists, may only consist of *-ẏak/c̓ak* 'for, used for' and *-ʕaƛ* 'the sound of.' These endings can be placed on verbal suffixes, such as *pisat-* 'play' to form a noun, *pisatẏak* 'manner of play', or complex roots to form a more complex noun, as in *pikčas-ću* 'pictures-inside' to form *pikčasću̓yak* 'television.' However they can also be used with the empty root *ʔu-*, as in the following sentence, taken from a recording of the late Barbara Touchie by Henry Kammler:

[13]The argument for this is a little bit theory-dependent, but the auxiliary predicate suffixes may be the topmost predicate in a clause, and on the assumption that sentences are propositions, thus need to be events that can be evaluated for truth value.

(51) ʔaanačiłsamaḥ ḥamaƚap hiłukʷitii mamaḥƚi ʔuẏak mamuʔasḿinḥʔi, shacks ʔukłaamit.

ʔana-L.(č)ił-LS.sa=(m)aˑḥ	ḥamaƚap	hił=uk=(m)it=ii	R-maḥƚiˑ	ʔu-ẏak	
only-DO.TO-AUG1=REAL.1SG	know	be.at=POSS=PST=WEAK.3	PL-house	X-used.for	
mamu-!as-ḿinḥ=ʔiˑ	shacks	ʔu-(k)łaˑ=(m)it			
work-outside.DR-PL=ART	shacks	X-call=PST			

'The only thing I remember is they would go to the houses used for working outside, called shacks.' (**B**, Barbara Touchie)

There is also the ending *-ckʷiˑ* 'evidence, remains of,' which can attach to bare roots to form nouns (*yacckʷii* 'footprint'), but which can also attach to fully inflected predicates and create a predicative meaning (*haẇiiqƛckʷiʔišˑ* 'they must have been hungry'). It is possible that *-ckʷiˑ* is ambiguously a participant-forming suffix or an auxiliary predicate suffix, or that it belongs to another class altogether. As with the locatives, and as with *-ẏak/čak* 'for' and *-ʕaƛ* 'the sound of,' I do not have an implemented analysis for this category, nor know how many suffixes belong to it.

3.1.4.5 Note on adpositions

I will make an argument later on that some of the main predicate suffixes are best modeled as adpositions (§5.2.3). Most importantly, this will include the object-marking *-L.(č)iɬ*, which Woo (2007) analyzes as *v* within the Minimalist Program. The reason I use the term 'adposition' rather than *v* is largely theory-internal: There is no such category as *v* within HPSG, and I need to account for the grammatical phenomenon somehow. We are describing the same data, and I don't think this difference in framework makes any difference in empirical claims. Anticipating the need for prepositional suffixes, I will simply note that the way I treat *-L.(č)iɬ* will not differ greatly from how I treat ordinary main predicate suffixes except that the type of the phrase will be defined as an *adposition* rather than *verb*.

3.1.5 Verbal aspect

Finally, I will sketch the aspectual system of Nuuchahnulth and my understanding of it. (Sapir & Swadesh 1939:240–241) analyze the aspect system as containing twelve forms. I will list them along with

the examples given based on the verbal root *mitxʷ-* 'turn,' translated into the modern orthography.

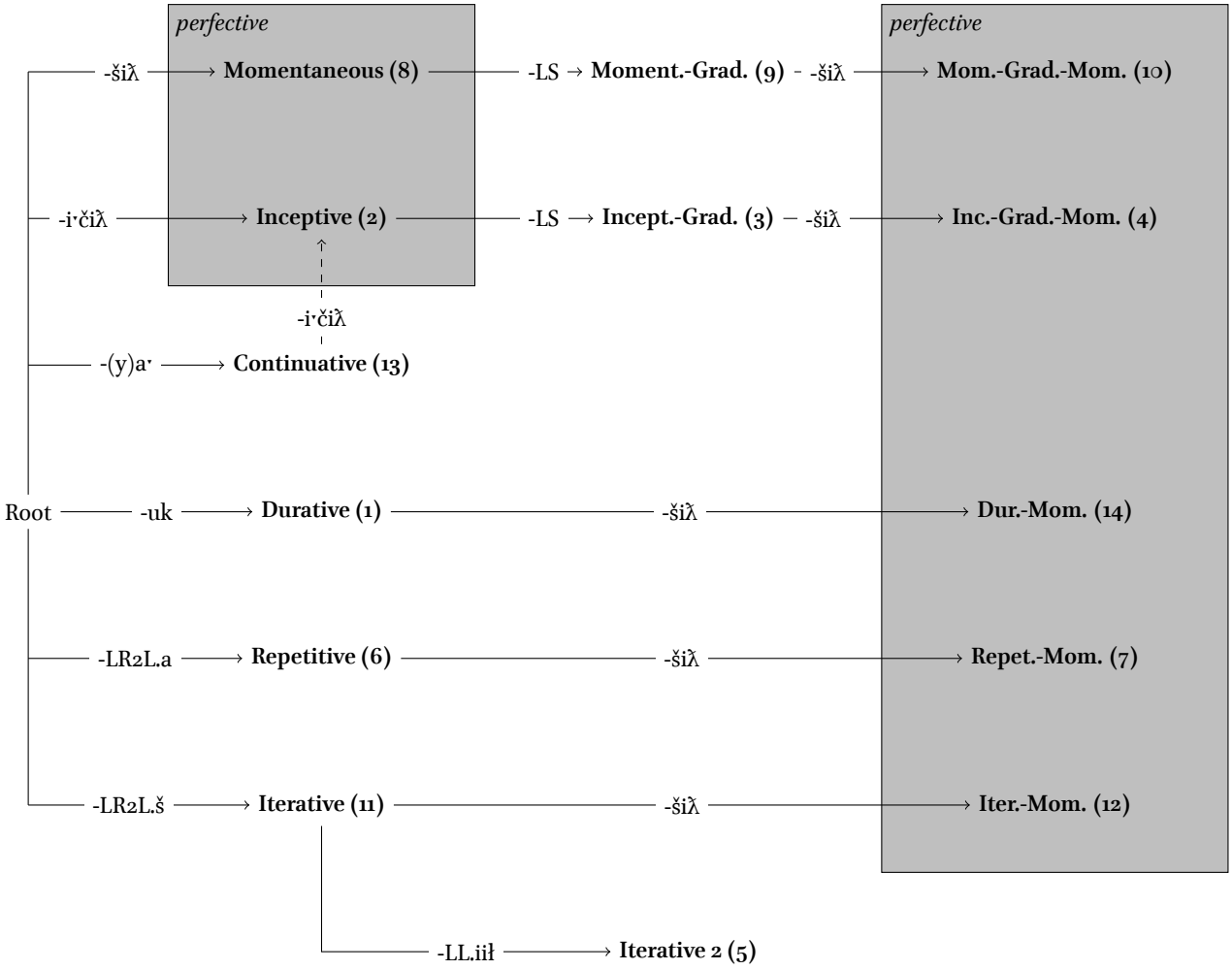
1. Durative *mitxʷaa*
2. Inceptive *mitxʷiičiƛ*
3. Graduated Inceptive *miitxʷičiƛ*
4. Pre-inceptive *miitxʷičiƛšiƛ*
5. Inceptive iterative[14] *miitxmiitxʷičiił*
6. Repetitive *miitxmiitxʷa*
7. Repetitive inceptive *miitxmiitxšiƛ*
8. Momentaneous *mitxšiƛ*
9. Graduative *miitxšiƛ*
10. Pre-graduative *miitxšiƛšiƛ*
11. Iterative *mitxmitxš*
12. Iterative inceptive *mitxmitxššiƛ*

Several of these aspects are composites. The only unitary aspects in this list are: durative, inceptive, repetitive, momentaneous, and iterative. The graduative (a long-short template, or LS) may be applied to inceptive and momentaneous forms, and the momentaneous may apply to any of the forms that do not terminate with a momentaneous or inceptive aspect.

In her dissertation, Rose 1981 (p.263–269) splits Sapir & Swadesh's durative category into two: a durative aspect (marked with -ak or -uk) and a continuative aspect (marked with a -(y)aˑ). This distinction was continued in both Nakayama 2001 (p.26–27) and Davidson 2002 (p.232–237). Davidson describes the durative as expressing 'intransitive imperfective state' or 'imperfective process,' and follows Rose in saying the continuative expresses a dynamic situation, in the sense that energy input is necessary to continue the action. At least in Davidson's version, the continuative can go on to take the inceptive (p. 246) and although he does not give it in the aspect chart, the durative can go on to take the perfective (p. 155).

[14]This form is rare in the modern language and complex. I will not give it much attention, but it is discussed in detail as the "Iterative II" in (Davidson 2002:242–244), where he claims that it is not inceptive but merely a formal alternate to the typical iterative.

Figure 3.1: Traditional verbal aspect flowchart



Taking this system as a baseline, the number of total possible aspects increases to 14, and a flow chart of aspect forms looks like Fig. 3.1. The nodes in the graph are fully inflected aspectual forms (save for the leftmost starting node, which is an aspectless verbal root), and the lines show the basic allomorph that is added to the stem to create the aspect form. Not every root takes every form, but if one basic aspect form is possible (e.g., the repetitive) then the forms after it are possible (e.g., the repetitive momentaneous). I have regularized the naming conventions somewhat from Sapir & Swadesh, and in the graph give next to each aspect form a number affiliating it with their list. Number 13 is for the continuative aspect and

14 is for the durative-momentaneous. A box is drawn around perfective forms.

In this schema, which is the one I have implemented in my grammar (§3.2.4), the continuative and inceptive are unusual aspect types. The inceptive can either go on the bare root or the continuative (but not other aspects), and the continuative is the only basic imperfective aspect form that cannot take the momentaneous *-šiƛ* or the graduative.

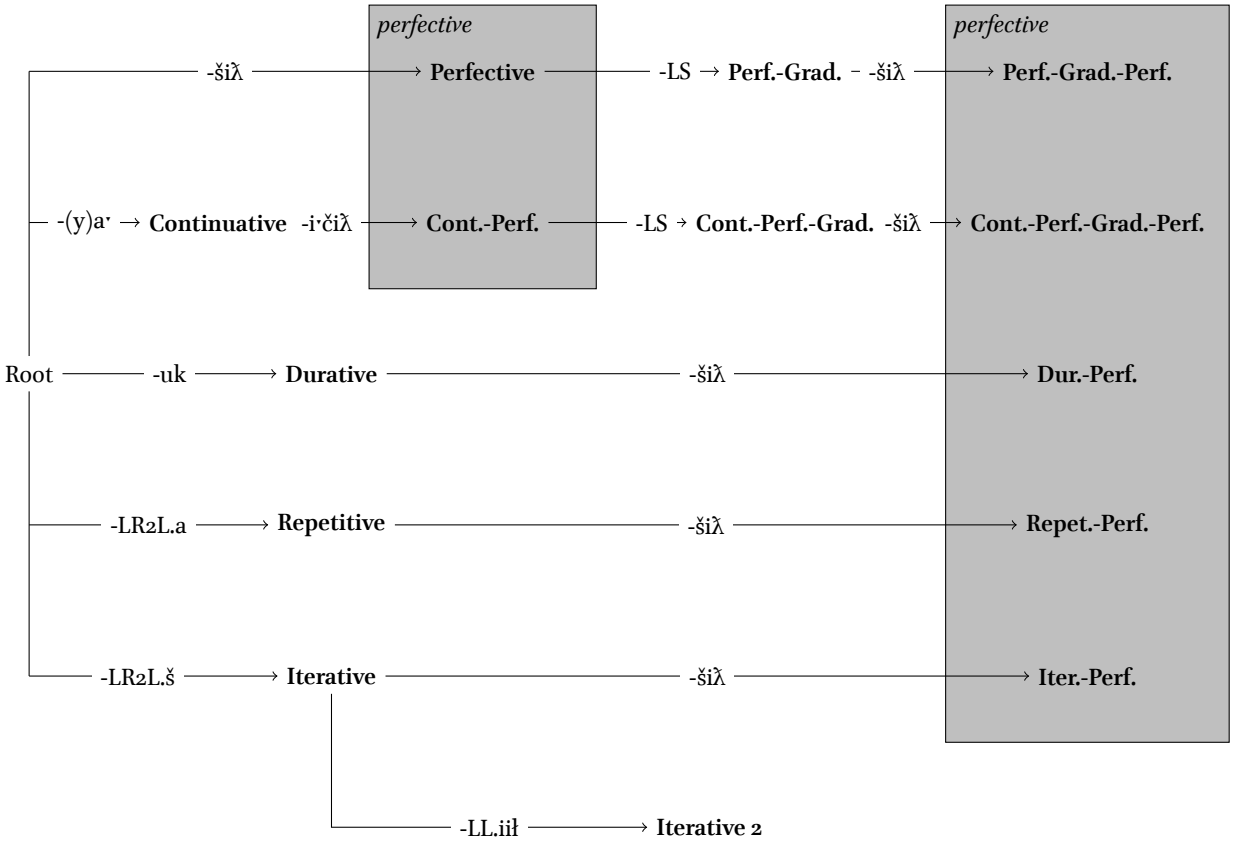
Adam Werle has convinced me (*p.c.*) that this view is inaccurate, and that the "inceptive" is in fact the same as the momentaneous. The *-iˑčiƛ* form is simply the form that the momentaneous takes under certain morphophonological conditions, namely: (1) after the continuative; (2) on monosyllabic roots that have a coda. In the limited tests I did with consultants, this appears to be correct. There are a small number of verb roots that can take both an inceptive and a momentaneous-graduative, but not a bare momentaneous, aspect. In the cases I tested, speakers were convinced that the momentaneous-graduative and inceptive forms had exactly the same meaning. One example is the root *muł-* which refers to the tide coming up. The continuative *mułaa* means 'tide coming up' while speakers tend to translate *muułšiƛ* as 'tide is coming in,' insisting this is distinct from *mułaa*. *muułšiƛ* looks like a momentaneous-graduative (with a lengthened first vowel), but speakers said there was not a word **mułšiƛ*, which would be the bare perfective.[15] I asked if there existed a word *mułiičiƛ* and both speakers I asked (Fidelia Haiyupis, northern dialect, and Bob Mundy, Barkley sound dialect) said yes, and insisted it had the exact same meaning as *muułšiƛ*. This follows from Werle's understanding of the *-iˑčiƛ* form as the momentaneous applying after a continuative.

There is also the fact that there are certain monosyllabic, closed syllable roots which always take the *-iˑčiƛ* and never *-šiƛ*. These forms are idiosyncratic and have to be learned. For instance, the perfective form of the negator *wik* is *wikiičiƛ* and never **wikšiƛ*. Likewise the adjective *ƚ̓ac* 'fat' becomes *ƚ̓aciičiƛ* 'become fat' and not **ƚ̓acšiƛ*, *ƛaw* 'be near' becomes *ƛawiičiƛ* 'come near' and not **ƛawčiƛ*, and *ʔuḥ* 'be'

[15]There exists a fairly large number of verb forms that have what looks like a graduative template (LS) but do not seem to have any graduative meaning, and the template cannot be removed. As far as I know this only happens with momentaneous (or perfective, as I will call it below) forms and durative forms. *muułšiƛ* 'tide coming in' belongs to this group of perfective forms that include a LS template. It is joined by *yaacšiƛ* 'walk' from the root *yac-* 'walk', and *tuupšiƛ* 'become dark' from *tupk-* 'black.' The durative forms with an LS template include the *yaacuk* 'walking' also from the root *yac-* 'walk,' *šiiƛuk* 'move house' from *šiƛ* 'move,' and *ƛiiḥak* 'paddling' from *ƛiḥ* 'paddle.' In my implementation, I simply treat these as irregular verb forms, but more work needs to be done to understand why this lengthening template applies to these particular roots.

becomes *ʔuḥiičiƛ* 'become', not **ʔuḥšiƛ*. According to this analysis then, the "inceptive" is not a unique aspect form but a morphophonologically conditioned alternate of the so-called momentaneous. This collapse makes the aspect system of Nuuchahnulth look a little more typical of languages around the world. There is a perfective aspect, marked with a large number of allophones but namely *-šiƛ* and *-i·čiƛ*, and then a variety of imperfective aspects (repetitive, iterative, durative, continuative, and graduative). Verb stems that are perfective may take the graduative (once) to become imperfective, and imperfective verb stems may take the perfective *-šiƛ*. The simplified flow chart is in (3.2) below.

Figure 3.2: Revised verbal aspect flowchart



Despite this revised analysis, most of my work was done under the traditional understanding of the aspect system (Fig. 3.1), and I will continue to use the inceptive marking IN in this document. When I turn to the implementation, I will describe the implementation of an aspect system that includes the

inceptive (§3.2.4).

3.2 HPSG Analysis and Implementation

I will now go over how I have modeled the above syntactic facts about clauses in my HPSG implemented grammar. Though the framework is particular, much of this analysis should be intelligible to people working in other frameworks. For those more familiar with other syntactic formalisms, I will attempt to give some basic guidance to decoding the formalism.

In HPSG, each node in a tree is a large attribute-value matrix defining the properties of the node (this includes leaf nodes or words). Attributes are things like HEAD and a value may be something like *noun*. This is written as [HEAD *noun*]. Values can be a simple atomic symbol or they can be another attribute-value matrix. For instance, *noun*, which is a possible value for HEAD, is itself a matrix with further information inside it, such as [FORM *finite*]. HPSG is dedicated to fidelity to the surface string order, and there is no movement. Syntactic relations are described through valence lists present at each node in the tree. The two most common of these lists are SUBJ (subject) and COMPS (complements). As the tree is constructed, information is added to (or more precisely, unified with) SUBJ and COMPS values, which is how valence information is preserved. Long-distance dependencies which in other theories are modeled through movement are here modeled by moving a valence item from the SUBJ or COMPS list into a SLASH list, which propagates up the tree until the extracted element is found.

In addition to the matrices present at each point in the tree, the phrase structure rules (PSRs) have to be defined for each possible ordering. So there may be a *HEAD-COMPLEMENT-RULE* which defines how a head node combines with a non-head node to its right. This is analogous to *merge* in Minimalism, although in HPSG the rules about which merges are allowed are specified within each PSR. A PSR may specify that one of its daughters has to have a certain property: for instance, when discharging a long-distance dependency, the head daughter should have something on its SLASH list, and the non-head daughter needs to have properties consistent with what the head daughter says about the item on its SLASH. This unification is indicated through reentrencies (drawn as boxes with the same label) which specify that two items in the attribute-value matrix are in fact the same.

In another case, a PSR might say that its head daughter needs to be [HEAD.AUX +]. In this case,

that rule cannot operate on a node that is defined as [HEAD.AUX –]. However, we allow for values to be underspecified. A node may not know if it is an auxiliary or not, in which case it is simply [HEAD.AUX *bool*], our way of denoting underspecification. A node of this type can unify with PSRs that require [AUX +] and [AUX –]. However, once it goes through that kind of rule, its AUX value is set. This is how the framework allows words and even phrases to be used in different ways in different tree structures. Complex forms of type hierarchies are important to unification in HPSG. While the type *bool* only has two subtypes, + and –, the types available to *aspect* may be far more complex, which then allows for more complex types of underspecification and unification.

My grammar is built on top of analyses present in the Grammar Matrix (Bender et al. 2002), and where possible I reuse distinctions and analyses present there. In particular, I use some of the features defined in the Grammar Matrix (like PRD, AUX), and inherit from generic phrase structure types like *DECL-HEAD-SUBJ-PHRASE* and *BASIC-UNARY-PHRASE*. I will not expect familiarity with all these predefined types, and will attempt to give all the relevant components of rules and type definitions, including those that are defined in the Grammar Matrix. However, most definitions given here are subsets of full definitions given in my implemented grammar, which can be found at `http://bitbucket.org/davinman/nuuchahnulth-grammar/`. I will not go over every analysis here, but only those I believe are the most significant for later discussion: the predicate and participant distinction (3.2.1), the second position clausal elements (3.2.2), the second position suffixes (3.2.3), and verbal aspect (3.2.4).

3.2.1 Predicates and participants

As argued in §3.1.1, nouns, adjectives, and verbs are all events, and yet when used as participants, the grammar needs to distinguish nouns from adjectives and verbs (§3.1.2). I use the value PRD (predicative) on the HEAD feature to model the predicate/participant distinction in Nuuchahnulth. I have a supertype, *predicate-lex*, which states that its HEAD.PRD value is +. All the lexical types that are predicative—verbs, and adjectives, and common nouns—inherit from this supertype. So every lexical entry for a verb, adjective, or common noun inherits the property [HEAD.PRD +], and can be treated as a predicate where the grammar demands it.

Participants are simply defined as [HEAD.PRD –]. A word can be defined as [HEAD.PRD –] by its lexical

inheritance (e.g., proper nouns are defined as non-predicative), or through the application of a rule. As detailed in §3.1.2, all dependent clauses headed by the enclitic *=ʔiˑ* are participants. I will address the analysis for this in §3.2.2. However, common nouns also need to be treated as participants as well as predicates. I achieve this through a lexical rule (that is, something that must apply prior to syntactic rules) that alters the syntactic properties of the noun. Recall that as predicates, common nouns have an event variable and a subject. Part of my type definition for a common noun is given in (52).

(52)
$$\left[\begin{array}{ll} \textit{COMMON-NOUN-LEX} & \\ \textsc{synsem.local} & \left[\begin{array}{ll} \textsc{cat} & \left[\begin{array}{ll} \textsc{head.prd} & + \\ \textsc{val} & \left[\begin{array}{ll} \textsc{subj} & \left\langle \boxed{1} \right\rangle \\ \textsc{comps} & \langle\rangle \end{array}\right] \end{array}\right] \\ \textsc{cont.hook} & \left[\begin{array}{ll} \textsc{index} & \boxed{3} \\ \textsc{xarg} & \boxed{2} \end{array}\right] \end{array}\right] \\ \textsc{arg-st} & \left\langle \boxed{1} \left[\textsc{local.cont.index} \quad \boxed{2} \left[\textsc{person} \quad \textsc{3rd}\right]\right]\right\rangle \\ \textsc{rels} & \left\langle \left[\begin{array}{ll} \textsc{pred} & \textit{pred} \\ \textsc{arg0} & \left[\boxed{3}\ \textit{EVENT}\right] \\ \textsc{arg1} & \left[\boxed{2}\ \textit{REF-IND}\right] \end{array}\right] \right\rangle \end{array}\right]$$

This rule can most easily be read bottom-to-top. It states that common nouns are semantically a relation between two arguments: an event, and a referential index.[16] The referent argument is identified with the INDEX attribute of the only thing in the noun's syntactic ARG(UMENT)-ST(RUCTURE). ARG-ST is used in HPSG as a translation layer between the semantics (the RELS list) and the syntax (in the SYNSEM

[16]Note the underspecified PRED value. Not to be confused with my use of "syntactic predicate," the PRED(ication) value in the DELPH-IN HPSG implementation is the name of the relation. So the Nuuchahnulth word *ʕiniiƛ* 'dog' has the meaning ʕINIIƛ, or for intelligibility for an English-language readership, DOG.

layer above). All items on a word's ARG-ST must correspond to items in its valence lists (most notably, SUBJ(ect) and COMP(lement)S). The lone item in the noun's ARG-ST is identified with its subject, and it has no complements. The semantic argument that is the available in the compositional syntax, at the path SYNSEM.LOCAL.CONT.HOOK.INDEX, is that of the event variable in the relation, and so the noun is treated as eventive in the compositional semantics. The variable to the referent is kept on the XARG, a sort of semantic scratch paper that is typically used for subjects. Finally, the HEAD.PRD attribute is set to +, indicating that common nouns, and all subtrees headed by a common noun, are predicative. This is a syntactic reflex indicating that the INDEX is pointing to an event.

The above *COMMON-NOUN-LEX* type functions when nouns are acting as predicates. To treat nouns as participants, they must go through a lexical rule first. The major parts of the lexical rule are in (53).

(53)
$$\left[\begin{array}{l} \textit{NOUN-RELATIVIZER-LEX-RULE} \\ \textsc{synsem.local} \left[\begin{array}{ll} \textsc{cat.head} & \left[\begin{array}{ll} \textit{noun} & \\ \textsc{prd} & - \end{array}\right] \\ \textsc{val} & \left[\begin{array}{ll} \textsc{subj} & \langle\rangle \\ \textsc{comps} & \langle\rangle \end{array}\right] \\ \textsc{cont.hook.index} & \boxed{1} \end{array}\right] \\ \textsc{dtr} \left[\begin{array}{ll} \textsc{synsem.local} & \left[\begin{array}{ll} \textsc{cat.head} & \left[\begin{array}{ll} \textit{noun} & \\ \textsc{prd} & + \end{array}\right] \\ \textsc{cont.hook.xarg} & \boxed{1} \end{array}\right] \end{array}\right] \end{array}\right]$$

This rule takes a daughter that is headed by a noun. It creates a new lexical item that has no subject or complements, and is not predicative, making it a participant. It moves the noun's XARG value into its INDEX, so that in the compositional semantics, it is being treated a referent and not an event. The article will do something similar to this, but as part of the second position inflection, I will address it with other second position elements below.

3.2.2 Second position inflection

As detailed in §3.1.3, Nuuchahnulth clauses are headed by their second-position inflection. I define the second position elements as selecting for a complement that is [HEAD.PRED +]. I call this complex of a second position element and its predicate a *predicate phrase* (abbreviated PredP). By design, within a PredP there is no differentiation between 'verb,' 'adjective,' and 'noun,' as the distinction is irrelevant in this context.

Second position elements take a predicate to their left and inherit all their predicate's syntactic participants. The basic type definition for a second position clitic is given in (54).

(54)
$$\left[\begin{array}{l} \textit{2P-LEX-ITEM} \\ \text{SYNSEM.LOCAL.CAT} \left[\begin{array}{ll} \text{HEAD.MOD} & \langle\rangle \\ \text{VAL} & \left[\begin{array}{ll} \text{SUBJ} & \left\langle \boxed{1} \left[\text{LOCAL.CAT.HEAD.PRD} \quad - \right] \right\rangle \\ \text{COMPS} & \left\langle \left[\begin{array}{ll} \text{OPT} & - \\ \text{LOCAL.CAT} & \left[\begin{array}{ll} \text{HEAD.PRD} & + \\ \text{VAL} & \left[\begin{array}{ll} \text{SUBJ} & \left\langle \boxed{1} \right\rangle \\ \text{COMPS} & \boxed{2} \end{array}\right] \end{array}\right] \end{array}\right] \right\rangle \oplus \boxed{2} \end{array}\right] \end{array}\right] \end{array}\right]$$

This lexical definition states that second position clitics are non-modifying words which have both a subject and a complements list. Its first complement is a non-optional predicate, which has a subject and some number of complements (possibly zero). Its first complement's subject is identified as its own subject, and its first complement's complements list is appended to its own complements list. So if this lexical item finds an intransitive predicate complement, it becomes a transitive item: Its subject is its complement's subject, and its only complement is the intransitive predicate it picked up. If this lexical item finds a transitive predicate, it becomes ditransitive. Once again, it will have a subject identified with that transitive predicate, and then its complements list will include two items: first the transitive predicate itself, and then the transitive predicate's own complement. And so on.

As indicated in §3.1.3, there are two major types of clausal second position lexemes: the auxiliary predicate head, and the article. The predicative versions are part of the mood complex, and belong to the type *MOOD-2P-VERB-LEX* (55), which inherits from (is a subtype of) *2P-LEX-ITEM* above. This rule needs to state that this lexical item makes a predicate and inherits its complement's semantic event. Then the lexical entry for each morpheme further specifies the clitic's particular properties: the mood of the complement, and the person and number properties of the subject.

(55)
$$\left[\begin{array}{l}\textit{MOOD-2P-VERB-LEX}\\ \textsc{synsem.local}\ \left[\begin{array}{ll}\textsc{cat} & \left[\begin{array}{ll}\textsc{head.prd} & +\\ \textsc{val.comps} & \left\langle\left[\ldots\textsc{index}\ \boxed{1}\right],\ldots\right\rangle\end{array}\right]\\ \textsc{cont.hook.index} & \boxed{1}\end{array}\right]\end{array}\right]$$

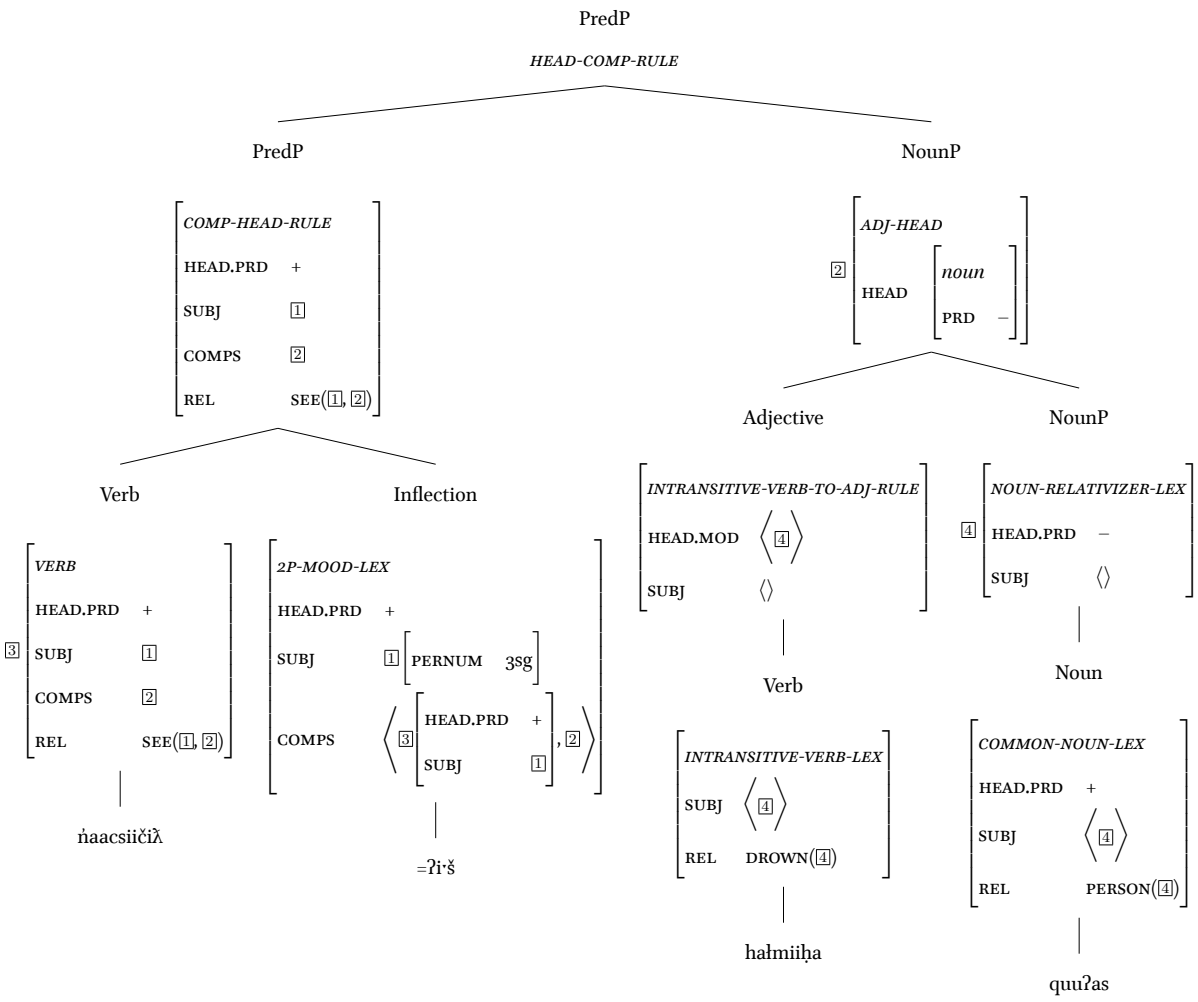
The article lexeme also inherits from *2P-LEX-ITEM*, but adds different constraints (56). The article needs to state that it creates a participant (that is, a non-predicate), that it is picking up its complement's subject's semantics (that is, the referent and not the event), and that that referent is in the third person.

(56)
$$\left[\begin{array}{l}\textit{ARTICLE-LEX}\\ \textsc{synsem.local}\ \left[\begin{array}{ll}\textsc{cat} & \left[\begin{array}{ll}\textsc{head.prd} & -\\ \textsc{val.comps} & \left\langle\left[\ldots\textsc{subject}\ \left[\ldots\textsc{index}\ \boxed{1}\right]\right],\ldots\right\rangle\end{array}\right]\\ \textsc{cont.hook.index} & \boxed{1}\left[\textsc{png.per}\ \ 3\text{rd}\right]\end{array}\right]\end{array}\right]$$

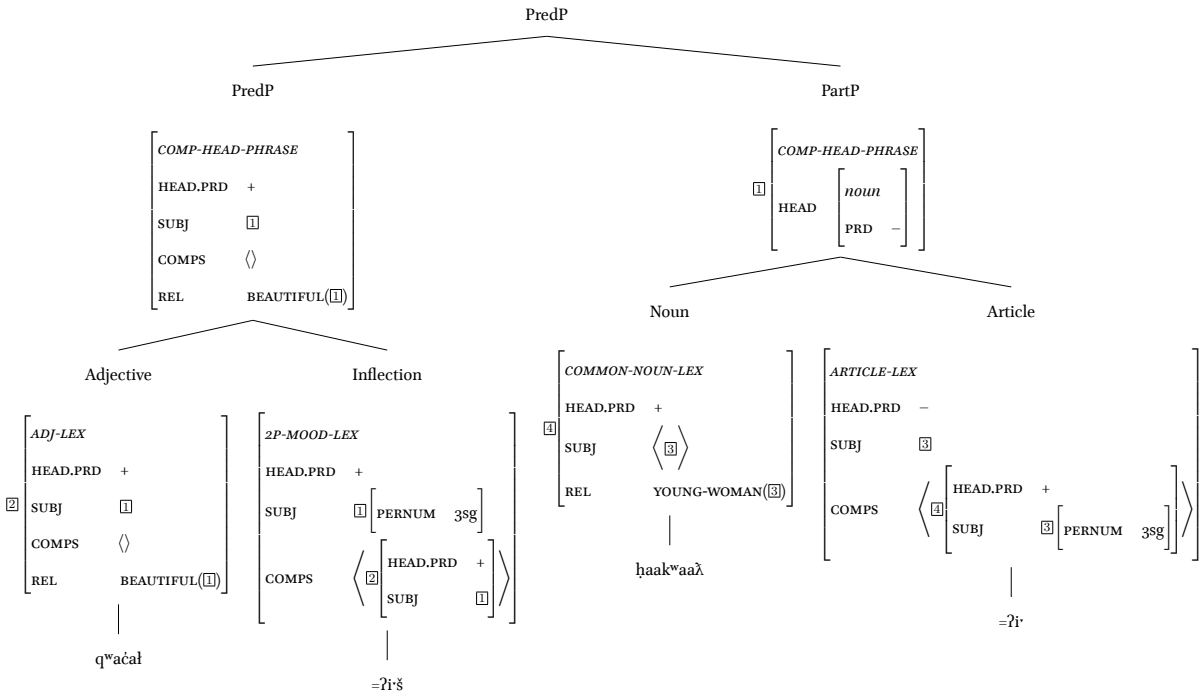
The above definitions for second position elements license trees that have simple second position elements. I will give sample trees for the three types of predicates introduced in §3.1.1: verbs (8), adjectives (9), and nouns (10). Trees for each of the sentences are given in (57), (58), and (59) respectively. The attribute-value matrices have been somewhat simplified to fit on the page, and identifying semantic features (through HOOK.INDEX and HOOK.XARG) have been elided. Identification of semantic features

is shown simply by identifying a slot (e.g., the x the relation SEE(x, y)) with an entire feature structure. In the implemented grammar, this is done through the identification of values with the HOOK features. Finally, there are some phrase structure rules that have not yet been introduced. They are present to complete the trees. The main points I am illustrating are second position argument composition and the predicate-participant distinction, which is created by the HEAD.PRD value at each level of the tree.

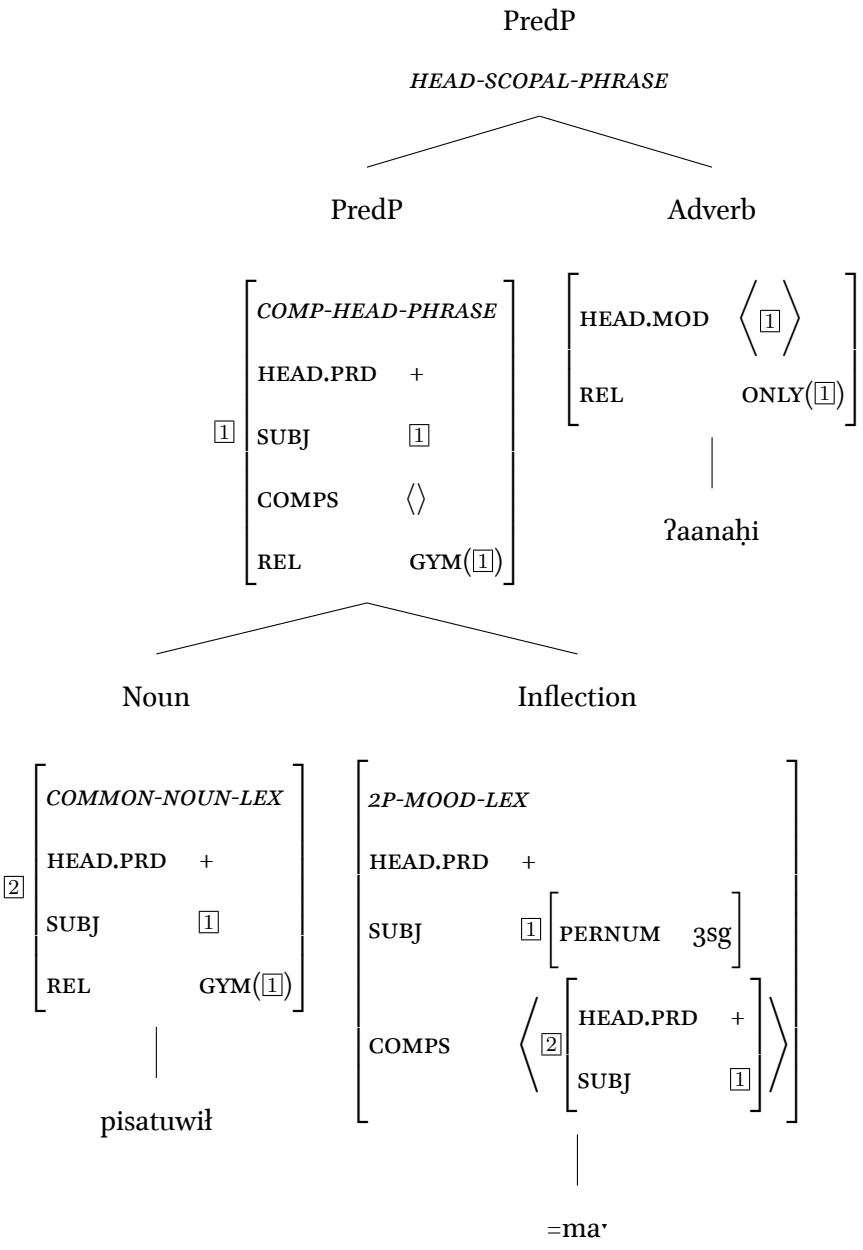
(57)



(58)

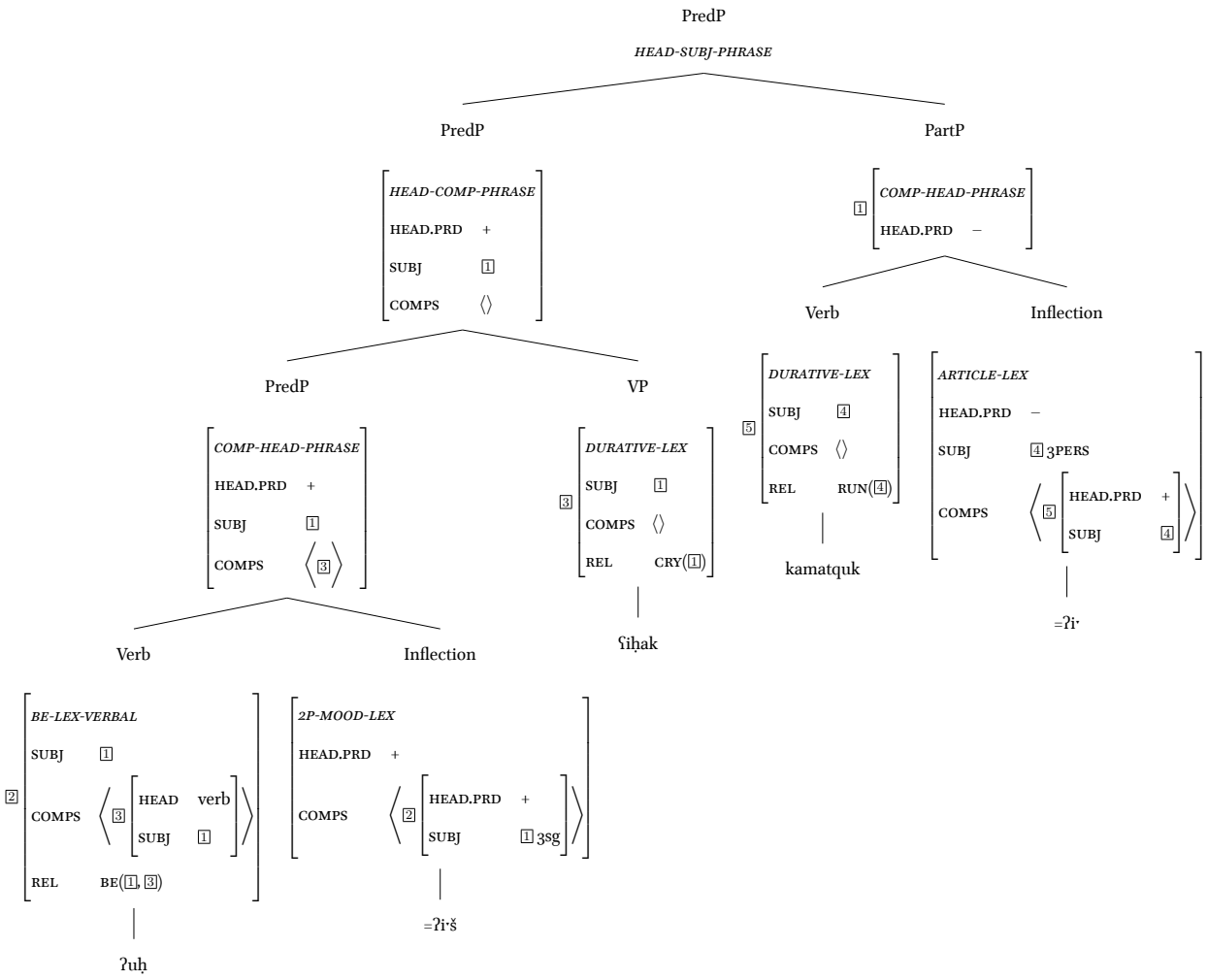

PredP
PredP
PartP
COMP-HEAD-PHRASE
HEAD.PRD +
SUBJ 1
COMPS ⟨⟩
REL BEAUTIFUL(1)
COMP-HEAD-PHRASE
HEAD noun
PRD −
Noun
Article
Adjective
Inflection
ADJ-LEX
HEAD.PRD +
SUBJ 1
COMPS ⟨⟩
REL BEAUTIFUL(1)
2P-MOOD-LEX
HEAD.PRD +
SUBJ 1 PERNUM 3sg
COMPS ⟨ 2 HEAD.PRD + SUBJ 1 ⟩
COMMON-NOUN-LEX
HEAD.PRD +
SUBJ ⟨3⟩
REL YOUNG-WOMAN(3)
ARTICLE-LEX
HEAD.PRD −
SUBJ 3
COMPS ⟨ 4 HEAD.PRD + SUBJ 3 PERNUM 3sg ⟩
qʷaćał
=ʔiˑš
ḥaakʷaaƛ̓
=ʔiˑ

(59)

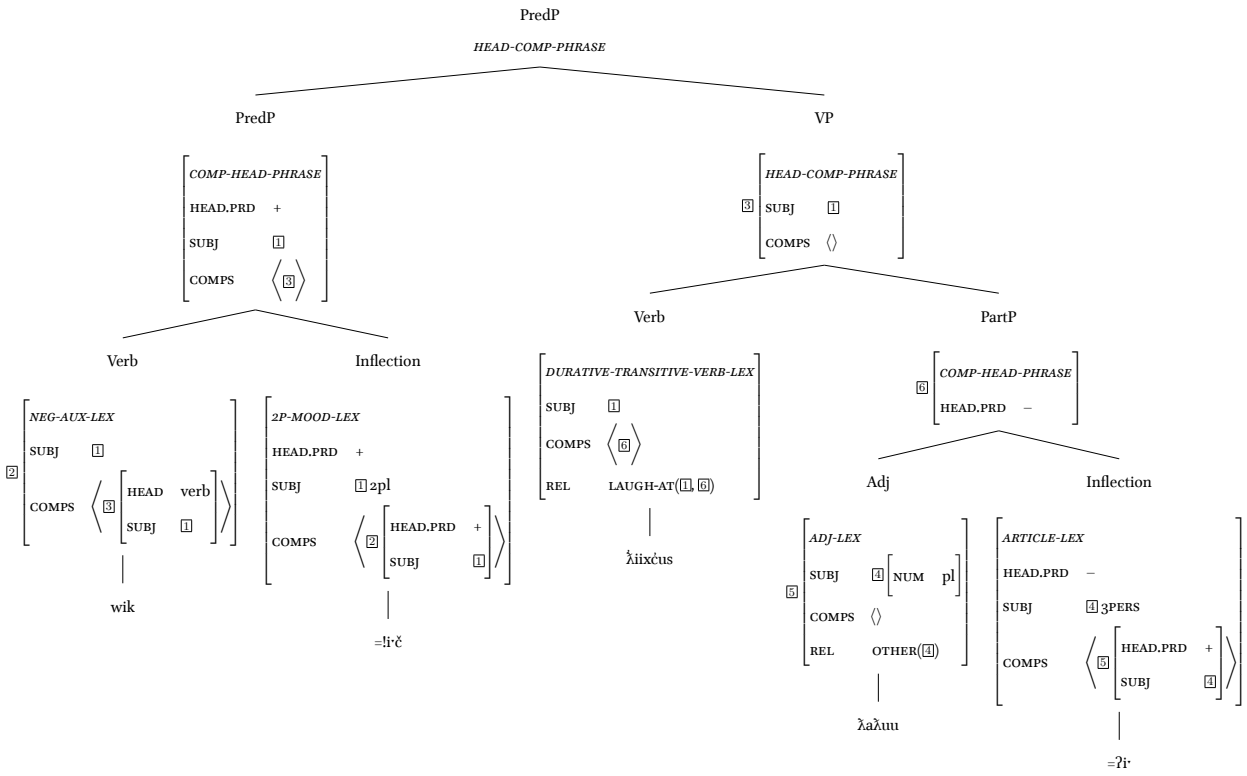


(57–59) show predicates of different lexical categories. This is straightforward because all these lexical categories are [PRD +], and thus can be the complement of the inflecting second position element. In the same way, predicative elements like verbs (60) and adjectives (61) can become participants through composition with the article *=ʔiʼ*, as shown below.

(60)


PredP
HEAD-SUBJ-PHRASE
PredP
PartP
HEAD-COMP-PHRASE
HEAD.PRD +
SUBJ 1
COMPS ⟨⟩
1 COMP-HEAD-PHRASE
HEAD.PRD −
Verb
Inflection
PredP
VP
COMP-HEAD-PHRASE
HEAD.PRD +
SUBJ 1
COMPS ⟨3⟩
3 DURATIVE-LEX
SUBJ 1
COMPS ⟨⟩
REL CRY(1)
5 DURATIVE-LEX
SUBJ 4
COMPS ⟨⟩
REL RUN(4)
ARTICLE-LEX
HEAD.PRD −
SUBJ 4 3PERS
COMPS ⟨5 HEAD.PRD + SUBJ 4⟩
Verb
Inflection
ʕiḥak
kamatquk
=ʔi·
2 BE-LEX-VERBAL
SUBJ 1
COMPS ⟨3 HEAD verb SUBJ 1⟩
REL BE(1, 3)
2P-MOOD-LEX
HEAD.PRD +
COMPS ⟨2 HEAD.PRD + SUBJ 1 3sg⟩
ʔuḥ
=ʔi·š

(61)

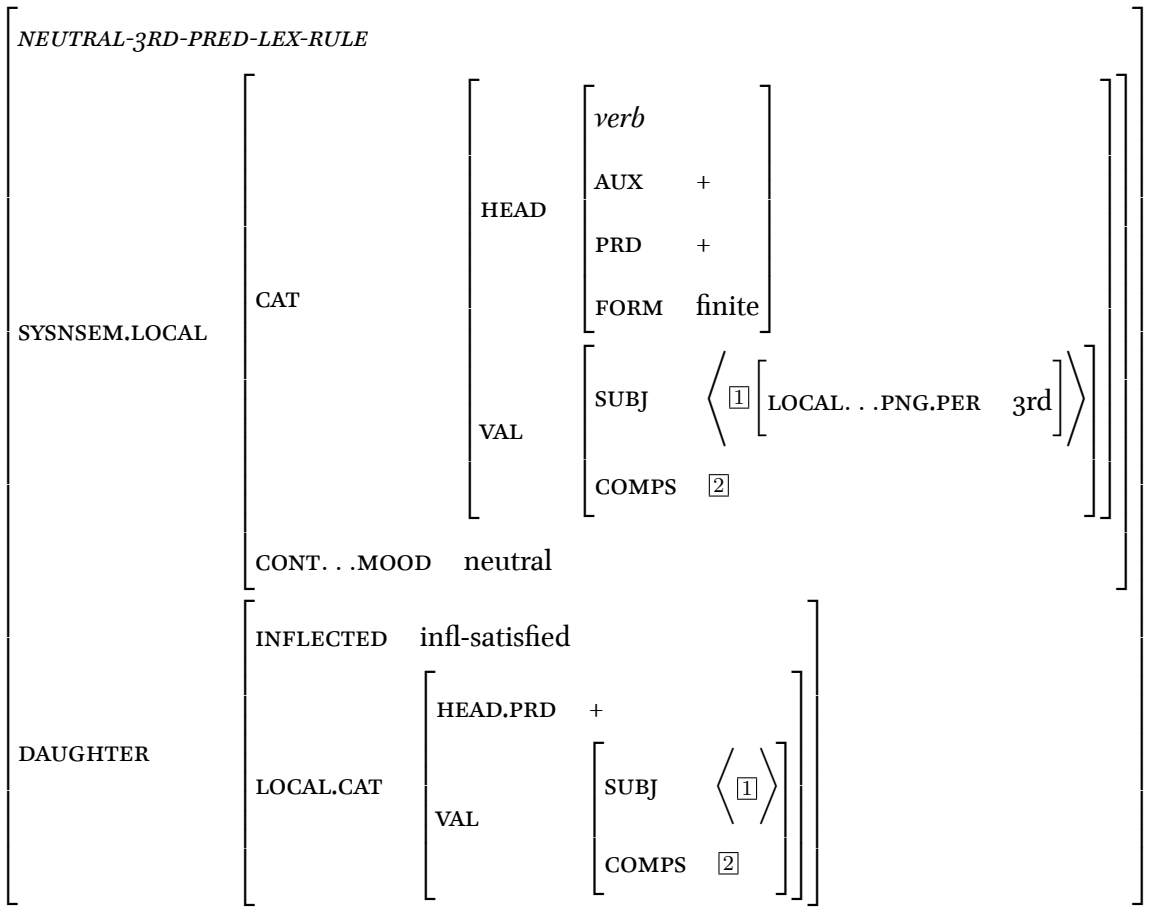


This analysis depends on viewing the second position enclitic complex as its own syntactic word. Since my implementation currently lacks a morphophonological component, I have whitespace-separated the second position enclitic complex. It also requires that only one of the enclitics inherit from (54): one of the enclitics must be the head of the syntactic word. Every enclitic is optional, with the exception of the subject-mood portmanteaus. Given this, I have modeled the subject-mood portmanteau as the root, with preceding enclitics attaching to the subject-mood portmanteau as "prefixes" and following morphemes attaching as "suffixes" that modify the appropriate syntactico-semantic properties.

This creates an analytical issue for the third person neutral mood, which is null-marked. Notionally, there is an invisible "=O" in the string, but to avoid it being written in the output, I use some work-arounds in the DELPH-IN architecture. There are two cases where the null third person element is introduced: (1) when there are other enclitics (the habitual or causative, for example) but no subject-mood portmanteau; (2) when there are no enclitics at all, only the understood null third person neutral mood. My grammar handles the two cases differently.

In case 1, the string "=o" is generated just like any other enclitic. I define a special inflectional flag SOME-INFLECTION and set its value to – just for the third person neutral. This means that a string consisting only of "=o" is not fully inflected and not allowed to be a word. For all of the prefixes and suffixes, I allow them to overwrite the string "=o" with themselves, and these inflectional rules set the SOME-INFLECTION flag to +. This means that the first prefixing or suffixing element to be added to the enclitic makes it a fully inflected word, and removes the "=o" from the output. So the string "=ʔaała" (habitual) is underlyingly "=o=ʔaała", and the subject and mood information is generated by the "=o".

In case 2, there is no additional enclitic to overwrite the "=o" string, so this approach does not work. In this case, I create a lexical rule which takes any fully-inflected predicative word and creates a second position auxiliary out of it with the information of the third person neutral mood embedded in its semantics. I do not believe this analysis is notionally different from a null morpheme. It has the vice of being a little more complicated, but the virtue of not outputting any unpronounced elements in the string. The predicate-to-third-person-neutral rule looks like this:

(62)


Finally, the second-position clausal clitics need to be able to attach to a preceding modifier of the predicate. In the case of the main clause predicates, they may attach to preceding adverbs, and for the article it may attach to preceding adjectives. Because there is no movement in HPSG, my analysis cannot simply say that clitics "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), but second position phenomena is one of the areas that requires extra analytical work in HPSG.

In both the cases where the mood clitic attaches to a preceding adverb (20) and when the article attaches to a preceding adjective (23), the second position enclitic containing the subject information is attaching to a modifier of a later predicate. In the version of the lexical entry seen in (54), these clitics are selecting for predicate complements, to which they assign semantic information (such as tense), and

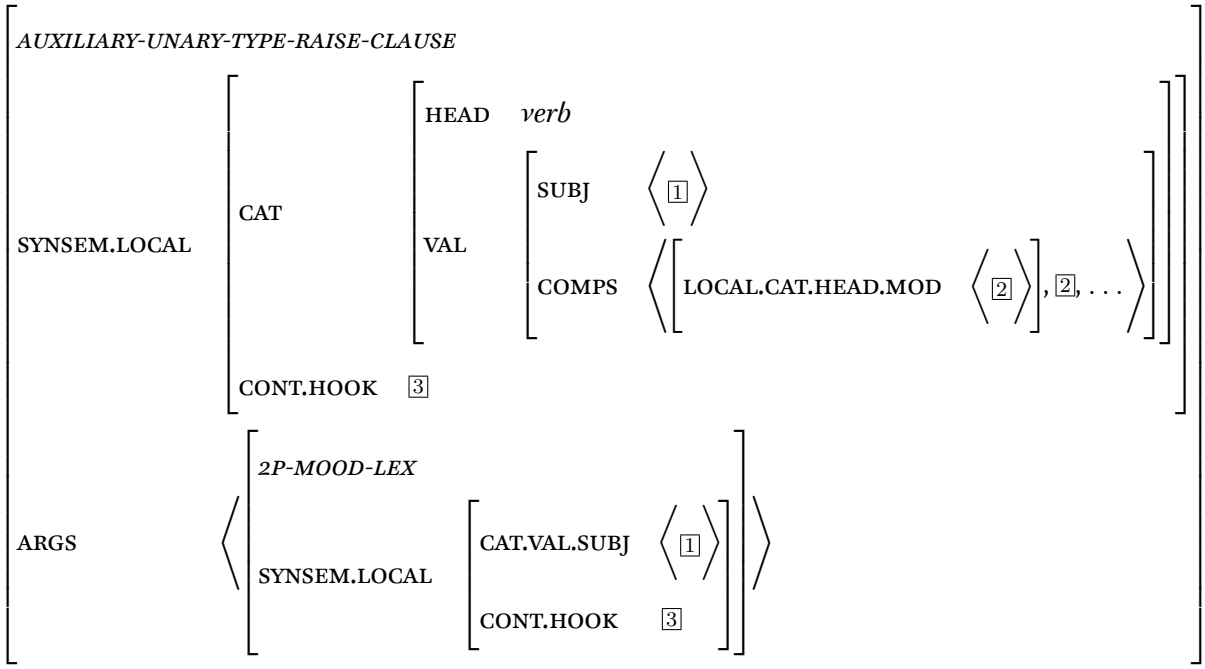
taking on their subject and complements. However, in the case where the clitics attach to a modifier, I cannot model the clitics as selecting for a predicate. I must have the clitic select for a modifier, and assign its semantic information to the modifier's modified value.

I define a lexical rule which creates the appropriate modifier-selecting structure from lexical entries of the type (54). Because the mood enclitics are creating a structure that is a semantic event and the article enclitic is creating a structure that is a semantic referent, the manipulations done to these two categories need to be somewhat different. I have two types for this: *AUXILIARY-UNARY-TYPE-RAISE-CLAUSE* and *AUXILIARY-UNARY-TYPE-RAISE-ARTICLE*. Each of these inherit common properties from a common supertype, *AUXILIARY-UNARY-TYPE-RAISE-SUPER*, the key parts of which are replicated below.[17]

(63)
$$\left[\begin{array}{l}\textit{AUXILIARY-UNARY-TYPE-RAISE-SUPER}\\ \textsc{synsem.local.cat}\ \left[\begin{array}{ll}\textsc{head} & \left[\begin{array}{ll}\textsc{type-raise} & +\\ \textsc{aux} & +\end{array}\right]\\ \textsc{val.comps} & \left\langle\left[\textsc{synsem.local.cat}\ \left[\begin{array}{ll}\textsc{head.aux} & -\\ \textsc{posthead} & -\\ \textsc{opt} & -\end{array}\right]\right], \boxed{1}\left[\textsc{synsem}\ldots\textsc{posthead}\ +\right]\right\rangle\oplus\boxed{2}\end{array}\right]\\ \textsc{args}\ \left\langle\left[\textsc{synsem.local.cat}\ \left[\begin{array}{ll}\textsc{head} & \left[\begin{array}{ll}\textsc{type-raise} & -\\ \textsc{aux} & +\end{array}\right]\\ \textsc{val.comps} & \left\langle\boxed{1}\left[\textsc{synsem}\ldots\textsc{posthead}\ -\right]\right\rangle\oplus\boxed{2}\end{array}\right]\right]\right\rangle\end{array}\right]$$

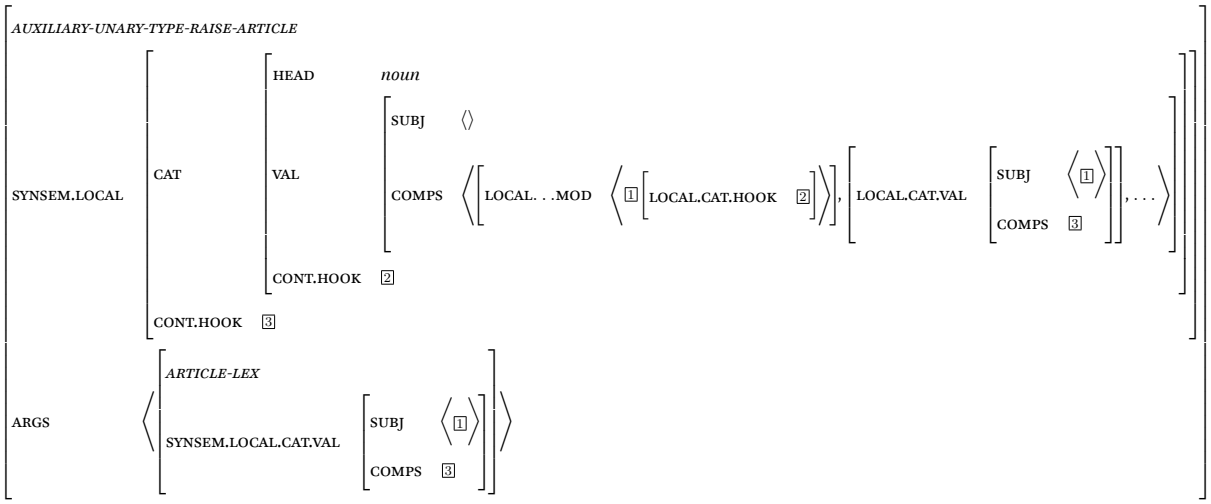
This supertype states that type auxiliary type raising is a unary operation that takes some auxiliary which has not been type raised, marks it as type raised, and adds one item to its complements list. The item that was previously the first complement and was [POSTHEAD −] (that is, had to be realized to the left) is now the second complement and is [POSTHEAD +] (that is, realized to the right). The supertype does not say much about the added complement, as that is left for its two daughter rules, in (64) and (65) below.

[17]For brevity, I have pretended in (63) that I can modify the POSTHEAD value from + to −. In fact, in my implementation I have to copy up every other value, changing only POSTHEAD.

(64)


This rule specifies that the old subject is the same as the new subject, and the semantic value and type of the construction (the HOOK) is the same as the old one. That is to say, it is still an event, and has the same subject. The new complement introduced has a MOD value which is identical to the second complement (what was previously the first complement). So the *AUXILIARY-UNARY-TYPE-RAISE-CLAUSE* appends a new element to the beginning of the complements list which is a modifier of the old first complement. The article type raising rule is in (65). It contains a few differences to account for the difference in semantic type.

(65)



This rule creates a noun instead of a verb. Like its sister rule, the first item on the complements list is a modifier. However, instead of that modified value being identified with the second complement, it is identified with the second complement's subject. This is because that complement can be any predicate: noun, verb, or adjective. Since predicates are events that have their referential index associated with their subject, the modifying adjective needs to grab a hold of the subject value. Related to this, the rule's semantic content (its HOOK) is identified with that modified element's hook, rather than the HOOK of the original *article-lex*. With these rules in place, I can now parse sentences with a leading adverb, and participant phrases with a leading adjective. The enclitic will simply go through the appropriate type-raising lexical rule first.

3.2.3 Second position suffixes

In §3.1.4 I give some examples of second position suffixes. The two classes that I have implemented are the "main predicate" suffixes and the "auxiliary predicate" suffixes. I will first show my implemented analysis of the main predicate suffixes. As a reminder, all these types are partial representations of the full type, which is present in the implemented grammar. Certain features—such as well-formedness for inflection and restricting daughter types by morphological class—are omitted in the interest of space and clarity.

I will here point out that an analysis of second position suffixes in Nuuchahnulth in HPSG has been

done in Waldie (2004). However, Waldie's analysis uses linearization: an augmentation to basic HPSG theory that allows for word scrambling. My analysis, grounded in the DELPH-IN formalism, does not have linearization. In my analysis, I am constrained by the surface order of suffixation and incorporation.

3.2.3.1 Main predicate suffixes

Main predicate suffixes are the class of verbal suffixes that may attach to a noun, in which case the noun satisfies the verb's complement, an adjective, in which case the adjective modifies the verb's (possibly dropped) complement, or an adverb, in which case the adverb modifies the verb itself.

All incorporating suffixes are modeled through the application of two successive lexical rules. The first lexical rule applies to the incorporated element (the noun, adjective, adverb, or, in the case of auxiliary predicate suffixes, verb) and modifies its properties. Then the rule that attaches the suffix applies, and relates its syntactico-semantic features to the type that prepared the root for incorporation.

All of these rules share some similarities, which I abstract into a higher type, *INCORPORATING-LEX-RULE* (66). This rule states that all incorporation rules apply to non-auxiliaries, and create verbs that are predicative, non-root, non-finite forms. The parent node will have some non-predicative subject and no modifiers.

(66)
$$\left[\begin{array}{ll} \textit{INCORPORATING-LEX-RULE} & \\ \textsc{synsem.local.cat} & \left[\begin{array}{ll} \textsc{val.subj} & \left\langle \left[\textsc{local.cat.head.prd} \quad - \right] \right\rangle \\ \textsc{head} & \left[\begin{array}{ll} \textit{verb} & \\ \textsc{prd} & + \\ \textsc{aux} & - \\ \textsc{form} & \text{non-root-nonfinite} \\ \textsc{mod} & \langle\rangle \end{array}\right] \end{array}\right] \\ \textsc{daughter} & \left[\textsc{synsem.local.cat.head.aux} - \right] \end{array}\right]$$

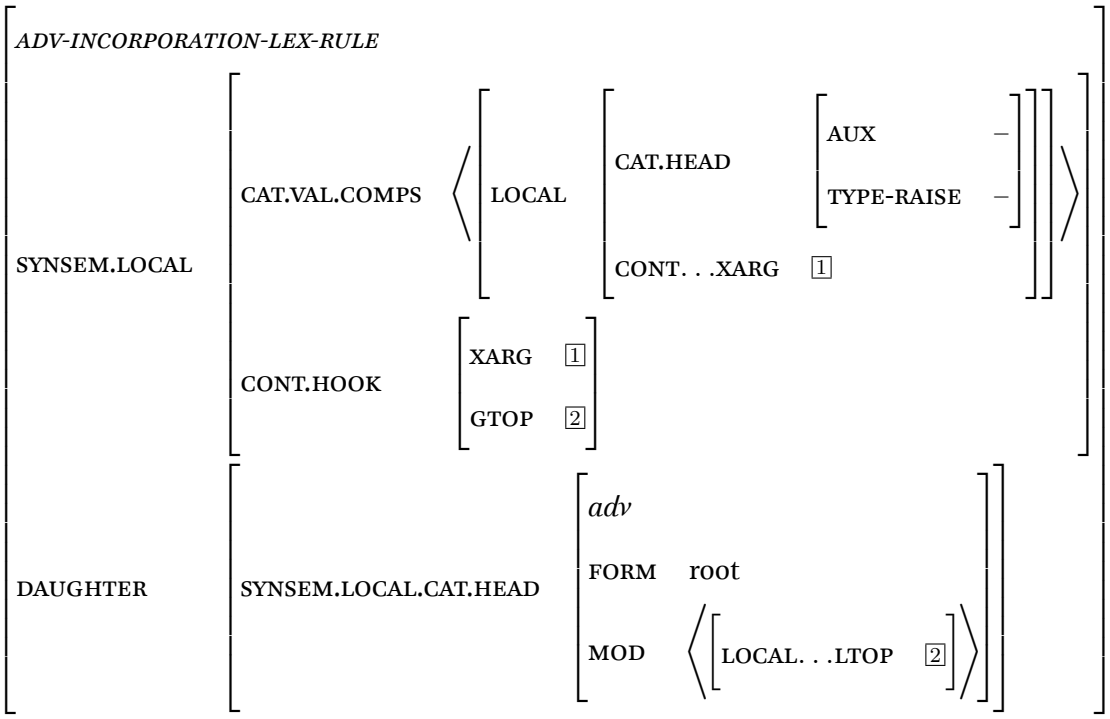
The subtypes of *INCORPORATING-LEX-RULE* that prepare nouns, adjectives, and adverbs for incorporation are given in (67, 68, 69) below.

(67)
$$\begin{bmatrix} \textit{NOUN-INCORPORATION-LEX-RULE} & \\ \textsc{synsem} & \begin{bmatrix} \textsc{local.cat.val.comps} & \langle\rangle \end{bmatrix} \\ \textsc{daughter} & \begin{bmatrix} \textsc{synsem.local.cat.head} & \begin{bmatrix} \textit{noun} & \\ \textsc{form} & \textsc{root} \\ \textsc{mod} & \langle\rangle \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

The noun incorporation rule simply states that it needs a root form noun daughter with nothing in its modifying list, and will not have any complements.

(68)
$$\begin{bmatrix} \textit{ADJ-INCORPORATION-LEX-RULE} & \\ \textsc{synsem} & \begin{bmatrix} \textsc{local.cat.val.comps} & \left\langle \begin{bmatrix} \textsc{local.cont.hook.index} & \boxed{1} \end{bmatrix} \right\rangle \end{bmatrix} \\ \textsc{daughter} & \begin{bmatrix} \textsc{synsem.local.cat} & \begin{bmatrix} \textsc{head} & \begin{bmatrix} \textit{adj} & \\ \textsc{form} & \textsc{root} \end{bmatrix} \\ \textsc{val.subj} & \left\langle \begin{bmatrix} \textsc{local}\ldots\textsc{index} & \boxed{1} \end{bmatrix} \right\rangle \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

The adjective incorporation rule states that it needs an adjective daughter, also in root form, and goes on to identify the adjective's subject's index with its own complement's index.

(69)


The adverb rule is the most complex. Parallel to the other rules, it takes a daughter that is in root form and an adverb. It inserts a value into its complements list which is not an auxiliary and not type-raised.[18] It identifies the XARG of its complement—that is, the complement's subject—with its own XARG. Since the syntactic structure of incorporated adverbs is *Adverb-SuffixVerb Object*, this XARG identification will, down the line, have the effect of tying the suffix verb's subject to the (yet-to-be-added) complement's subject.

Finally, there is the identification of the daughter's modified element's LTOP with the parent's GTOP. I will admit this is a bit of a hack. Adverbs are, in MRS, "quantificationally equivalent" with what they modify. This is to allow adverbs to float in the semantic interpretation, and it is modeled with a special kind of semantic relation called a qeq (or quantificational equivalency) and a type called a "handle" which relates things quantifications. A simple semantic expression for 'I only sing' then looks like (70).

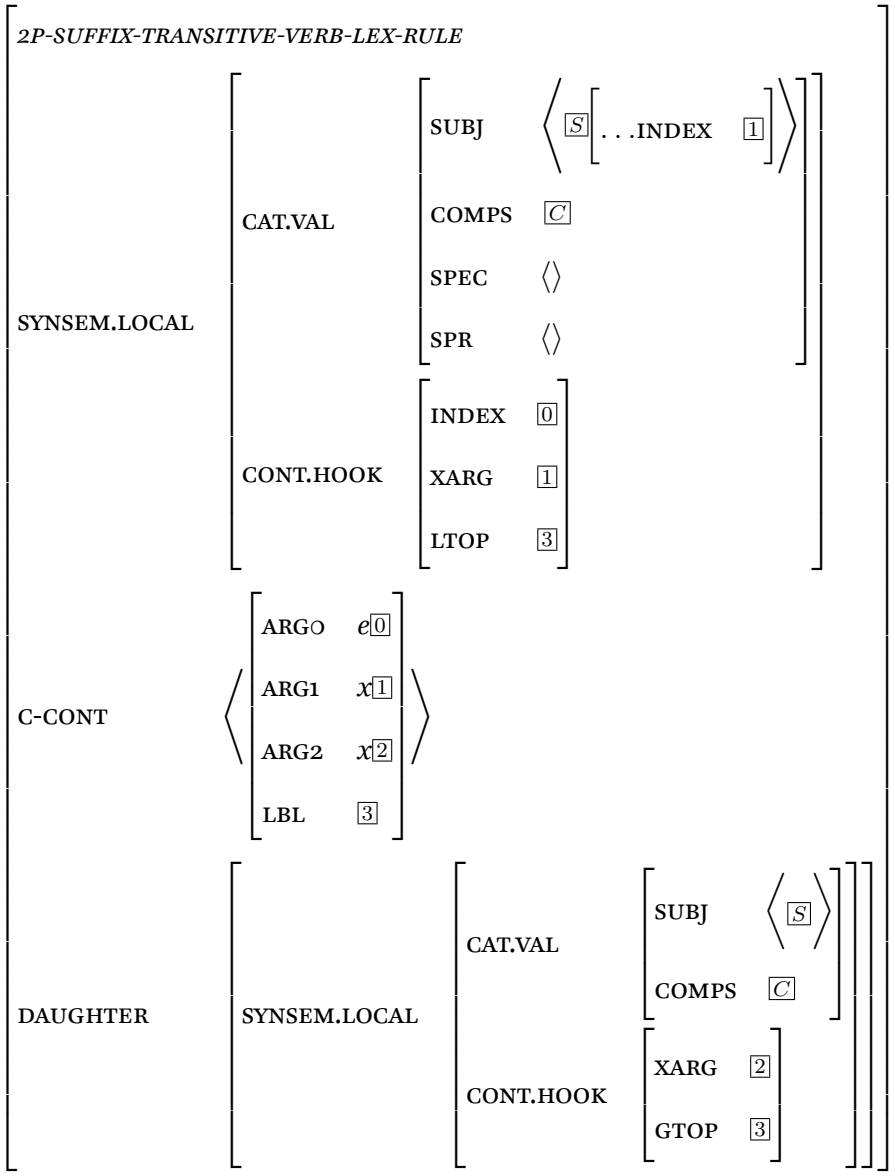
[18]This is important so that certain rules not mentioned, for instance intransitive-verb-to-adjective, cannot be the complement of an incorporated adverb.

(70)
$$\left\langle \begin{bmatrix} \textit{ONLY} & \\ \textsc{lbl} & h \\ \textsc{arg0} & e \\ \textsc{arg1} & h\boxed{1} \end{bmatrix}, \begin{bmatrix} \textit{SING} & \\ \textsc{lbl} & h\boxed{2} \\ \textsc{arg0} & e\begin{bmatrix} \textsc{tense} & \text{present} \end{bmatrix} \\ \textsc{arg1} & x\begin{bmatrix} \textsc{pernum} & \text{1sg} \end{bmatrix} \end{bmatrix}, \begin{bmatrix} \textit{QEQ} & \\ \textsc{higher} & \boxed{1} \\ \textsc{lower} & \boxed{2} \end{bmatrix} \right\rangle$$

In the *ADV-INCORPORATION-LEX-RULE* (69), I need to preserve the adverb's semantic LBL value (stored in LTOP in the syntax) so that, when the suffix verb is attached, that LBL from its QEQ relation is around for me to associate with the verb. This is not what the GTOP value is intended for, but it works, and that GTOP is not associated with anything else once the suffix verb is applied, so no harm done.[19]

Once one of the above rules has applied, the main predicate suffix can be added. There is one rule for preparing each of the lexical categories (noun, adjective, and adverb), but there is one rule for adding suffixes, given in (71), which I will explain in detail.

[19]The reader may have noticed that all my rules so far are treating the suffix verbs as though they are transitive only—there is only at most one item in the COMPS list. However, in §3.1.4.1 I noted one ditransitive suffix verb. I do in fact parse ditransitives in my implemented grammar, but it requires parallel copies of all these incorporating rules, in order to account for a longer COMPS list. I pull a similar trick to the GTOP trick here in those rules, where I temporarily store the second complement in the intermediate rule's SPEC. This is not what this list is intended for, but once again, after the suffix verb applies, that list is hidden. As with all these rules, the full versions can be seen in my implemented grammar at `https://bitbucket.org/davinman/nuuchahnulth-grammar`.

(71)


This rule introduces a new semantic relation (C-CONT) that has not yet been assigned a semantic predication value. All this rule states is that it is an event (ARG0 *e*) that relates two referents. The parent also will be an event, with its INDEX being the same as the introduced relation's ARG0. It will also inherit the relation's ARG1 as its XARG and its LBL as its LTOP (these are standard relationships for verbs).

The rule passes up its daughter's subject and complements. All of its possible daughters will minimally have a subject, defined in the parent type (66). The noun incorporation rule does not add any complements, while the adjective and adverb incorporation rules do, so a main predicate suffix applied

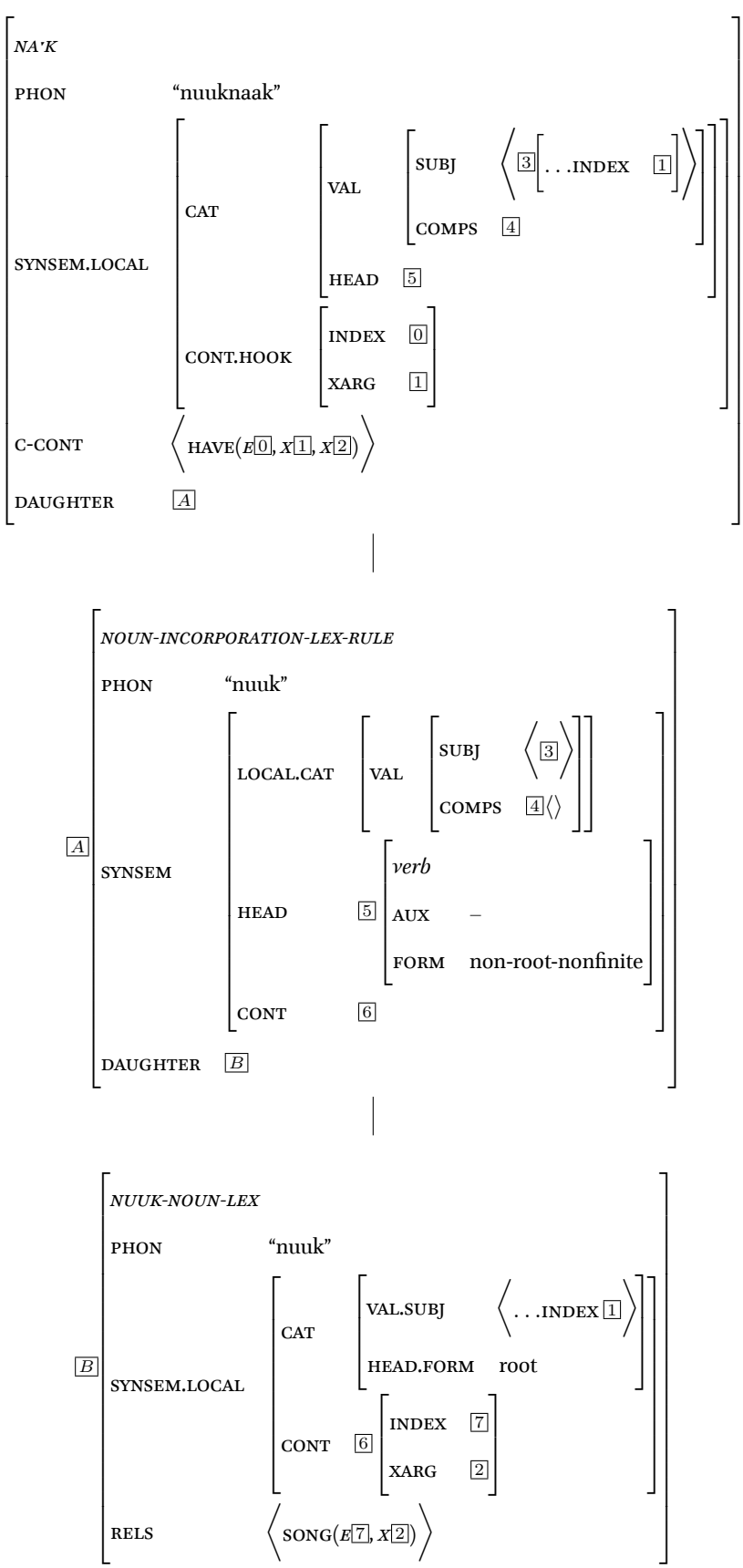
to an incorporated noun will only have a subject, while incorporated adjectives and adverbs will have an object. Finally, the new relation's LBL is identified with the daughter's GTOP. This was only defined for incorporating adverbs, and this will have the effect of allowing the adverb to scope over the verb in the semantics.

All that is missing is the new relation's predication value, the small-caps symbol that indicates what meaning is. For instance, the suffix *-na·k* inherits from the type *2P-SUFFIX-TRANSITIVE-VERB-LEX-RULE* and adds only the following:

(72)
$$\begin{bmatrix} \textit{NA·K} \\ \textsc{phon} \quad \text{“-na·k”} \\ \textsc{c-cont} \quad \left\langle \begin{bmatrix} \textsc{pred} \quad \textsc{have} \end{bmatrix} \right\rangle \end{bmatrix}$$

To make this more concrete, I give a derivation of the word *nuuknaak* 'have a song' in (73) below, somewhat condensed and abbreviated for space.

(73)


NA'K
PHON "nuuknaak"
SYNSEM.LOCAL
CAT
VAL
SUBJ ⟨ 3 [. . .INDEX 1] ⟩
COMPS 4
HEAD 5
CONT.HOOK
INDEX 0
XARG 1
C-CONT ⟨ HAVE(E0, X1, X2) ⟩
DAUGHTER A
NOUN-INCORPORATION-LEX-RULE
PHON "nuuk"
A
SYNSEM
LOCAL.CAT
VAL
SUBJ ⟨ 3 ⟩
COMPS 4⟨⟩
HEAD 5
verb
AUX –
FORM non-root-nonfinite
CONT 6
DAUGHTER B
NUUK-NOUN-LEX
PHON "nuuk"
B
SYNSEM.LOCAL
CAT
VAL.SUBJ ⟨ . . .INDEX 1 ⟩
HEAD.FORM root
CONT 6
INDEX 7
XARG 2
RELS ⟨ SONG(E7, X2) ⟩

The *ʔu-* root is modeled as a special lexeme that has properties that allow it to go through the incorporation rules in such a way that it obtains the right subject and complement(s) once the suffix applies. This means going through the adverb and adjective incorporation rules, since those are the rules that pass up the complements list of the suffix verb. The rule for *ʔu-* is given in (74).

(74)
$$\left[\begin{array}{ll}
\textit{ʔU-LEX} & \\
\textsc{phon} & \text{“ʔu”} \\
\textsc{synsem.local} & \left[\begin{array}{ll}
\textsc{cat} & \left[\begin{array}{ll}
\textsc{val} & \left[\begin{array}{ll}
\textsc{subj} & \left\langle \left[\textsc{local.cat.head.prd} - \right] \right\rangle \\
\textsc{comps} & \left\langle \boxed{2} \left[\textsc{local} \left[\begin{array}{ll} \textsc{cat.head.prd} & - \\ \textsc{cont.hook.index} & \boxed{1} \end{array}\right] \right] \right\rangle
\end{array}\right] \\
\textsc{head} & \left[\begin{array}{ll}
\textit{adjective-or-adverb} & \\
\textsc{prd} & + \\
\textsc{aux} & - \\
\textsc{form} & \text{root-and-nonroot} \\
\textsc{mod} & \left\langle \boxed{2} \right\rangle
\end{array}\right]
\end{array}\right] \\
 & \textsc{cont.hook.xarg} \boxed{1}
\end{array}\right]
\end{array}\right]$$

The lexical entry shares many properties with *INCORPORATING-LEX-RULE* (66), since this lexeme will go directly through the *-INCORPORATION-* rules. It associates its complement's index with its own XARG, so that the semantics of the suffix verb's ARG2 get associated with it. I also have identified it as a supertype of adjectives and adverbs and placed its complement on its modifying list, since I want this lexeme only to go through the adverb and adjective incorporating rules. *ʔu-* forms always have a full list of the suffix verb's complements, which is the identical to what happens with adjectives and adverbs. The difference between adjectives and adverbs and *ʔu* is that *ʔu* has no semantics. Finally, the morpheme *ʔu-* itself, despite being a root form, is defined as the union of a root and a non root. This is a bit strange, but it is so the main predicate incorporating lex rules here (66), which require a root form, can accept *ʔu*, but so can the auxiliary predicate incorporation rules below (75), which require a non-root form.

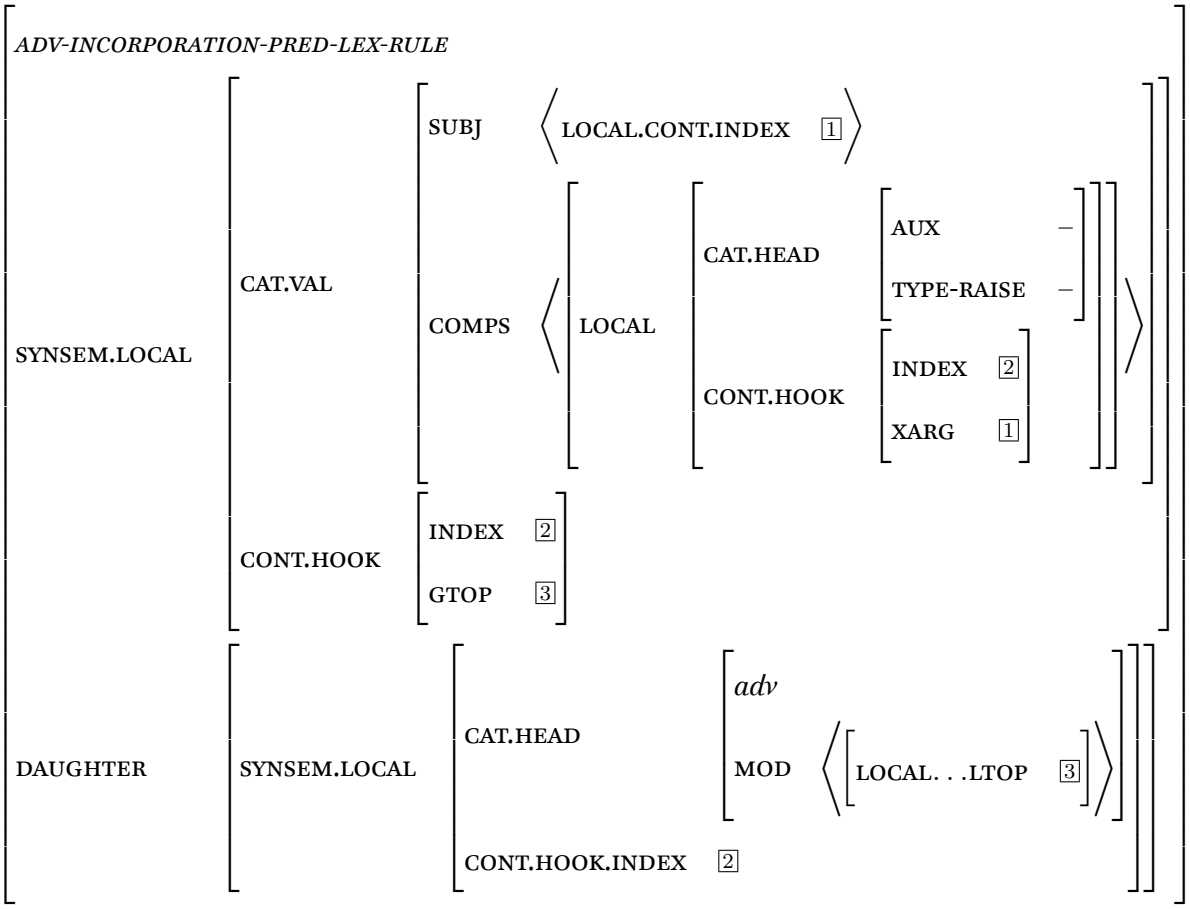
3.2.3.2 Auxiliary predicate suffixes

The strategy I apply to auxiliary predicate suffixes is extremely similar to that for main predicate suffixes. Like main predicate suffixes, incorporation proceeds in two steps: first a lexical rule that moves the needed syntactic properties into place, and then a final inflecting lexical rule that supplies the suffix itself. Because auxiliary predicate suffixes handle all predicates in the same way (§3.1.4.2), I only need two "preparatory" lexical rules: one for predicates (75), and one for adverbs (76). As with the main predicate suffixes, these lexical types inherit from *INCORPORATING-LEX-RULE* (66).

(75)
$$\left[\begin{array}{l} \textit{PRED-INCORPORATION-LEX-RULE} \\ \textsc{synsem.local.cat.val} \left[\begin{array}{ll} \textsc{subj} & \left\langle \boxed{1} \right\rangle \\ \textsc{comps} & \boxed{2} \end{array}\right] \\ \textsc{daughter} \left[\begin{array}{l} \textsc{synsem.local.cat} \left[\begin{array}{ll} \textsc{head} & \left[\begin{array}{ll} \textsc{prd} & + \\ \textsc{form} & \text{non-root} \end{array}\right] \\ \textsc{val} & \left[\begin{array}{ll} \textsc{subj} & \left\langle \boxed{1} \right\rangle \\ \textsc{comps} & \boxed{2} \end{array}\right] \end{array}\right] \end{array}\right] \end{array}\right]$$

This lexical rule asserts that its daughter is a predicate (a noun, adjective, or verb) and not a root form. It then passes up that word's subject and complements.

(76)



This rule does much of the same work that the previous adverb incorporation rule does. The modifications are that, rather than identifying the complment's INDEX with the mother's XARG as in (69), the complement's INDEX is identified with the mother's INDEX. This will have the effect of allowing the adverb to modify the complement. The complement's XARG is also identified with the subject. This has the effect of generating the subject-control properties of the suffix. The rest of the structure is the same as in (69), and in fact in my implementation, the commonalities are stored in an abstract type that both daughters inherit from.

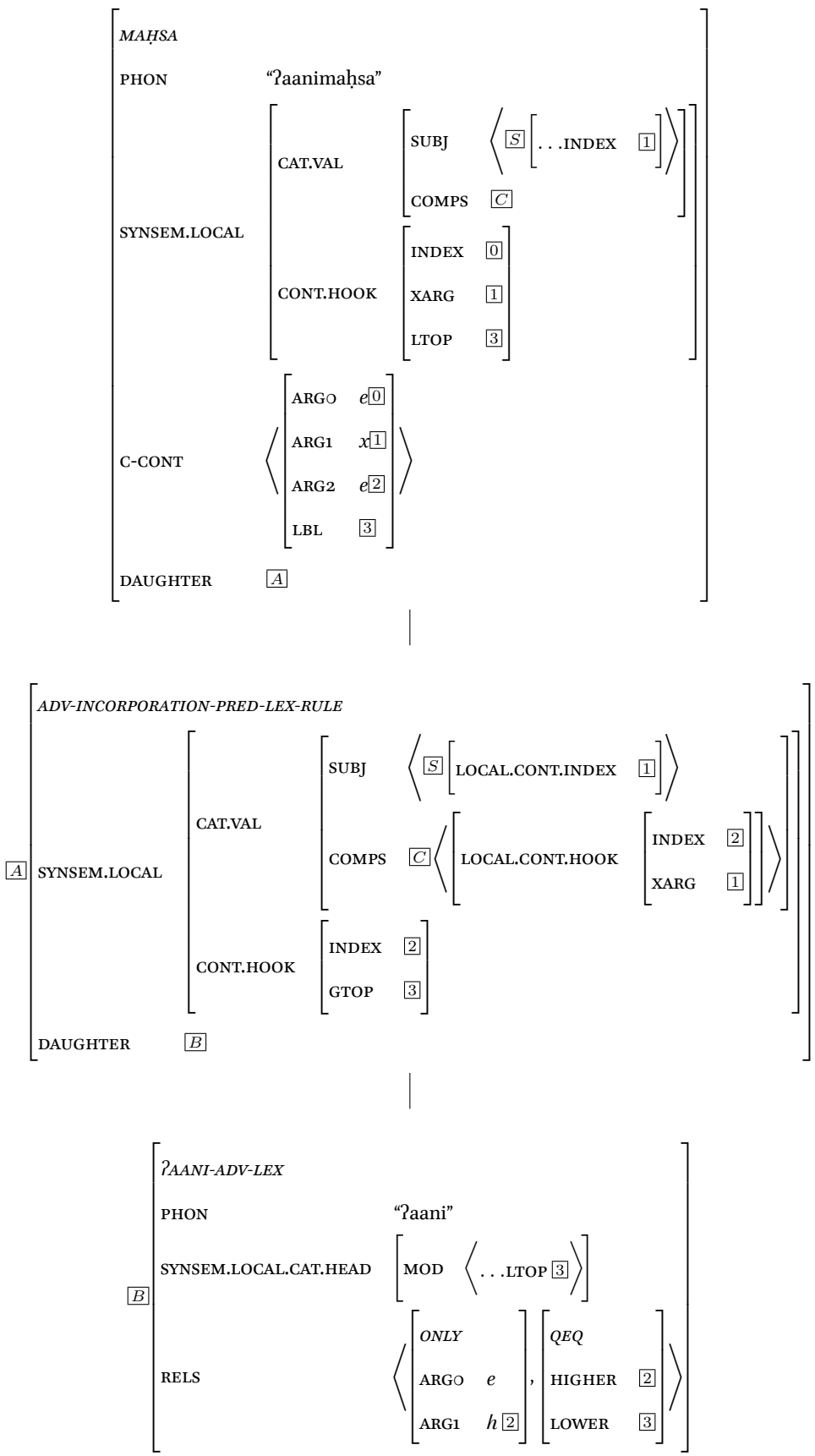
Once again, a final type applies the actual suffix verb itself, this time called *2P-SUFFIX-PRED-VERB-LEX-RULE*. This type is once again highly similar to the version seen for main predicate suffixes in (71). In fact, there is only one difference: the ARG2 of the C-CONT is an event type rather than a referent and is identified with the daughter's INDEX rather than its XARG. Other than that, the rules are identical. Again, I put the common restrictions in a supertype from which both subtypes inherit. The daughter subtype

2P-SUFFIX-PRED-VERB-LEX-RULE with the relevant changes is given in (77).

(77)
$$\left[\begin{array}{l} \textit{2P-SUFFIX-PRED-VERB-LEX-RULE} \\ \textsc{c-cont} \quad \left\langle \left[\textsc{arg2} \quad e\boxed{2} \right] \right\rangle \\ \textsc{daughter} \quad \left[\textsc{synsem.local.cont.hook.xarg} \quad \boxed{2} \right] \end{array}\right]$$

I give a sample derivation of the word *ʔaanimaḥsa* 'only want to' in (78).

(78)

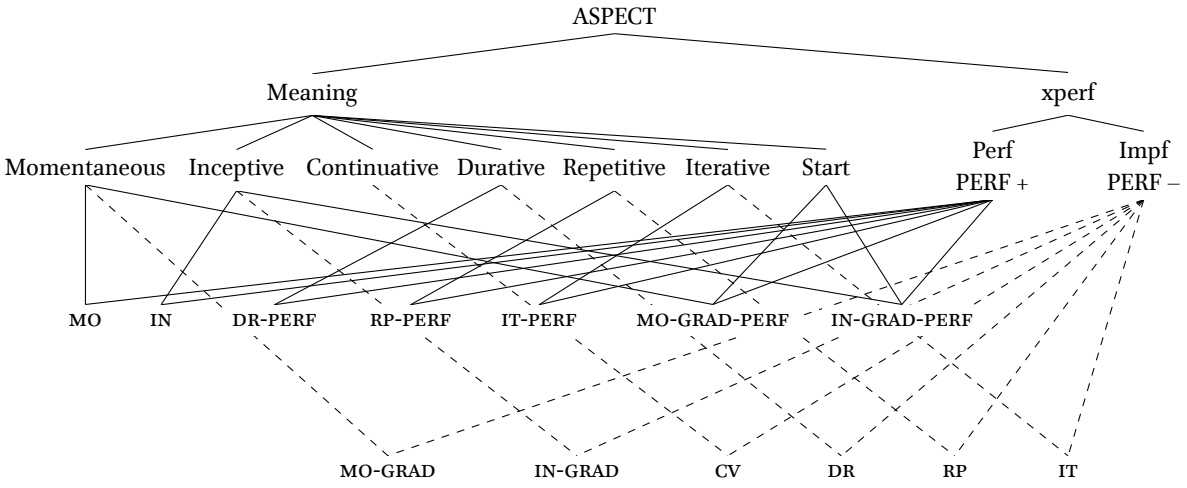

MAḤSA
PHON
“ʔaanimaḥsa”
SYNSEM.LOCAL
CAT.VAL
SUBJ
S
. . .INDEX
1
COMPS
C
CONT.HOOK
INDEX
0
XARG
1
LTOP
3
C-CONT
ARG0
e 0
ARG1
x 1
ARG2
e 2
LBL
3
DAUGHTER
A
ADV-INCORPORATION-PRED-LEX-RULE
A
SYNSEM.LOCAL
CAT.VAL
SUBJ
S
LOCAL.CONT.INDEX
1
COMPS
C
LOCAL.CONT.HOOK
INDEX
2
XARG
1
CONT.HOOK
INDEX
2
GTOP
3
DAUGHTER
B
ʔAANI-ADV-LEX
B
PHON
“ʔaani”
SYNSEM.LOCAL.CAT.HEAD
MOD
. . .LTOP 3
RELS
ONLY
ARG0
e
ARG1
h 2
QEQ
HIGHER
2
LOWER
3

The only special care that has to be taken with *ʔu* attachment is blocking certain auxiliary suffixes from taking it, while allowing it for others. I do this by defining morphological hierarchies. Some suffixes, like *-maḥsa*, inherit from a type which underspecifies its daughter as either a predicate lexeme or *ʔu*. Others, like *-ẇiṫas*, inherit from a type which forbids its daughter to be *ʔu-*.

3.2.4 Verbal aspect

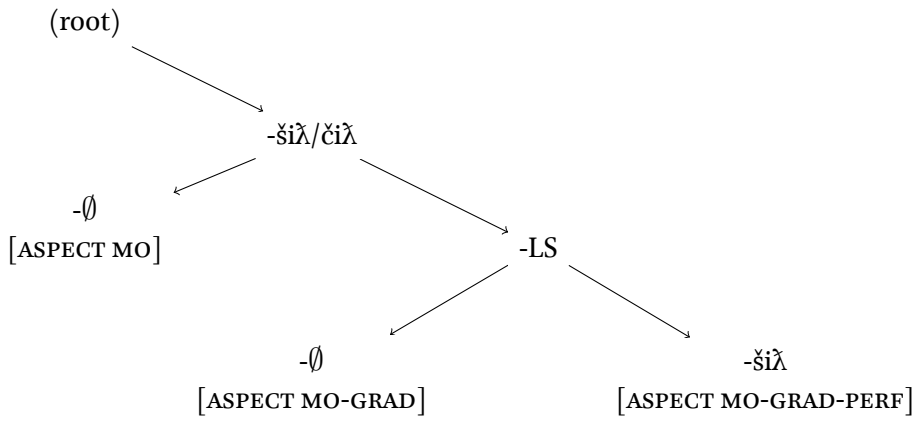
As indicated in (§3.1.5), I have implemented the traditional aspect system in my analysis. This is implemented in two parts. The first is a hierarchy of aspectual forms. For each final form present in Fig. 3.1, there is a node corresponding to it. Aspect is broken into two components: Meaning (which encompasses categories like momentaneous, inceptive, repetitive, and so on), and xperf (which defines whether something is perfective or imperfective). I have added an additional type to the meaning hierarchy labeled "start," which is meant to represent a final perfective form (in momentaneous graduative perfective and inceptive graduative perfective). This hierarchy is shown in Fig. 3.3, where all possible aspect forms (less the Iterative 2) are leaf nodes that inherit from at least one meaning subtype and one perfective subtype. Perfective types (the second from last row) inherit from Perf, and imperfective types (the last row) inherit from Impf. This will allow later parts of the grammar to refer to perfective and imperfective aspects, without having to worry about which aspect a word specifically is (4.3).

Figure 3.3: Traditional aspectual hierarchy



While this describes the aspectual forms and their properties, this is not yet a way of morphologically applying them to a root. In fact, this hierarchical description makes straightforward application impossible. The momentaneous form MO is defined as being PERF +, and the momentaneous graduative MO-GRAD is defined as being PERF −. So the aspect value MO-GRAD cannot, in this schema, apply to a lexeme that has the aspectual type MO, because a thing cannot be both PERF + and PERF −. The way I handle this is to apply suffixes and aspectual meaning in separate rules. Fig. 3.4 below shows the pathway for lexical rule applications for momentaneous-derived forms. A root can takes the morphology for momentaneous and graduative forms separately from the application of the aspectual values to the verb. This prevents PERF values from clashing.

Figure 3.4: Application of morphology to momentaneous forms



3.3 Summary

Because of predicate flexibility in Nuuchahnulth, I have defined special terminology to distinguish between semantic and syntactic phenomenon. I use *relation* 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, and thus correlate with semantic *arguments*.

Verbs, adjectives, and common nouns may all be used predicatively, but proper nouns cannot be. All

of these lexical categories can be used as participants, but verbs and adjectives require an "article," which I argue is a relativizer. Each clause is headed by a second-position inflectional element which provides, among other things, subject agreement. Adverbs may precede the clausal predicate, in which case the second position inflection appears after the adverb.

A series of suffixes may also occur in second position, but with respect to their complement and not the clause as a whole. The only two types of second position suffixes I model are main predicate suffixes, which relate two or three referents to each other (with meanings like 'have,' 'take,' and 'give,') and auxiliary predicate suffixes, which are subject-controlling predicates that relate a referent to an event (with meanings like 'going to' and 'want to').

Finally, I describe the complex aspect system in Nuuchahnulth, and its traditional interpretation and a proposed revised interpretation. In either interpretation, the system has a few perfective forms and a large number of imperfective forms.

All of these facts are modeled in an implemented grammar based in the HPSG formalism. The predicate/participant distinction, which is modeled through a boolean-valued feature [PRED +|–], which keeps track of the eventiveness or referentiality of the element's semantic index. Nouns, adjectives, and verbs are all modeled as events minimally with syntactic subjects, which must go through a lexical or syntactic rule in order to be used as participants, and expose a referential index instead of an event. Second position clausal elements are modeled as syntactic words that attach to the leftmost element in the phrase, while second position suffixes are modeled as lexical incorporation. The aspectual system is modeled as a type hierarchy which separates notional meaning from perfectiveness. This requires the morphology to be added separately from the semantics of aspect. With this basic sketch of the clause and my HPSG analysis of it, I will be able to describe my understanding of serial verbs (§4) and the predicate linker (§5), and how I model these phenomena.

Chapter 4

SERIAL VERBS

In this section I will introduce what I mean when I refer to serial verb constructions (SVCs) in Nuuchahnulth (§4.1), give the data on the construction (§4.2), and finally my analysis as implemented in my grammar (§4.3).

4.1 Serial Verb Definition

The definition of a 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.

As stated, 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 and where the verbs share the semantics of the second position inflectional complex is a clause containing a "serial verb construction." Each matrix and dependent clause is marked with a second-position clitic, and so the boundaries of a clause are fairly easy to determine.[1] Because of the restriction that serial verb constructions lack an overt coordinator, constructions containing a linker morpheme (§5) do not count as SVCs.

This definition is also restricted to verbs, and not other kinds of multi-predicate constructions. Non-verbs do not participate in the kinds of constructions I will investigate here, and non-verbal multi-predicate constructions are fairly limited in type: they require overt coordination through a coordinand or through a linker construction. The former is outside the scope of this dissertation, and the latter will be addressed in §5.

[1]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.

4.1.1 Non-SVCs

I will give a few examples of common constructions which fall outside my definition of a serial verb construction, although there may be some similarities. The first is juxtaposed clauses (79).

(79) hačˀa pawałšiƛ̓ [pause] ʔuušp̓iq [pause] ʔuušp̓iqqačˀa wawaa.

hačˀa pawał-šiƛ̓ ʔuušp̓iq ʔuušp̓iq=qaˑčˀa wawaa.
maybe lost-MO something.bad.happens.MO something.bad.happens.MO=DUBV say.CV
‘ “Maybe he got lost... something happened... perhaps something happened,” they said.’ (**C**, *tupaat* Julia Lucas)

(79) comes from a text about a man who was lost at sea and returns. Although one could claim that the first two verbs, *pawałšiƛ̓* and *ʔuušp̓iq*, are in a SVC, the prosody used in the utterance indicates something else. The repeated *ʔuušp̓iq*, complete with a second position clitic, suggests that these are clauses (the first two under null-marked third person neutral mood) that are adjacent. This kind of structure occurs in speech as people are rephrasing or redescribing an event. (80) has the same structure, and is from a description of Raven in a narrative text.

(80) ʔayiisšiƛ̓, hiy̓iisšiƛ̓ haʔumukʔi.

ʔaya-ɬiis-šiƛ̓ hiš-ɬiis-šiƛ̓ haʔum=uk=ʔiˑ
many-consume-MO all-consume-MO food=POSS=ART
‘He ate a lot, he ate all of the food.’ (**B**, Marjorie Touchie)

Like (79), (80) is in the third person, and I believe this is two separate clauses, and not a serialization structure. When these sorts of constructions occur outside the third person, the adjacent clauses require an overt morpheme, and so this apparent ambiguity (serialization vs adjacent clause) does not occur.

The second kind of construction that falls outside my definition of a SVC is Nuuchahnulth temporal expressions. The way to express a duration of time is to juxtapose the time period with the rest of the clause. If the time expression is in the durative aspect, the interpretation is ‘for *x* time’ (81). If the time expression is in a perfective aspect, the interpretation is ‘after *x* time’ or ‘at the end of *x* time’ (82).

(81) suč̓ačłintiis hił ċuumaʕaas.

suč̓a-či·ł=int=(y)iis	hił	ċuumaʕaas
five-day.DR=PST=WEAK.1SG	be.at	Port.Alberni

'I was in Port Alberni for five days.' (**Q**, Sophie Billy)

(82) ʔaḥʔaaʔaƛqač̓a ṅupqʔičḥšiʔeƛ ṅaacsaaƛ ḥiškʷiiʔatḥ č̓apac hintšiƛ ʔuucayu̓k ḥiškʷiiʔatḥ.

ʔaḥʔaaʔaƛ=qa·č̓a	ṅup-qʔičḥ-šiƛ=!aƛ	ṅaacsa=!aƛ	ḥiškʷiiʔatḥ	č̓apac	hintšiƛ
and=DUBV	one-year.DR-MO=NOW	see=NOW	Hesquiaht	canoe	arrive.MO.GR

ʔu-L.cay̓uk	ḥiškʷiiʔatḥ
X-go.DR	Hesquiaht

'And one year later the Hesquiahts saw a boat arriving toward Hesquiaht.' (**C**, *tupaat* Julia Lucas)

Although these two types of temporal expression are distinct, it is possible to use the second construction, which uses a perfective form, to express a duration, i.e. *it has become X length of time that Y has been done*, as in 83. The opposite (interpreting the durative form to mean 'after') is not possible to my knowledge.

(83) ʔaḥʔaaʔaƛ muučiiłšiƛna hił siy̓a ʔaḥʔaaʔaƛ ḥaakʷaaƛuk Matthew, kʷaaʔuucukqs.

ʔaḥʔaaʔaƛ	muu-či·ł-šiƛ=na·	hił	siy̓a	ʔaḥʔaaʔaƛ	ḥaakʷaaƛ=uk	Matthew
and	four-day.DR-MO=NEUT.1PL	be.at	1SG	and	young.girl=POSS	Matthew

kʷaaʔuuc=uk=qs
grandchild=POSS=DEFN.1SG

'We were there for four days, me and Matthew's daughter, my granddaughter.' (**C**, *tupaat* Julia Lucas)

What differentiates these expressions from serial verb constructions, as well as linker constructions (see §5) is the interpretation of the subject. While the temporal component can take the subject-mood portmanteau (81, 83), the person expressed in the subject clitic is not in any way the subject of the temporal expression. In (81), 'I' is not the subject of 'five days.' This is also the case for the subjects of the

verbs in (82, 83). Instead, the time expression seems to be opaque to the subject information present in the clause. This is not the case for serial verbs, as I will show below.

4.2 Data

4.2.1 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.

4.2.1.1 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 84), emotional affect (e.g., feel-sorry + make-pathetic as in 85), some kinds of adverbial-like expressions using semantically light verbs like "do" and "go ahead" (e.g., only-do + lie-down as in 86, and go-ahead + go as in 87), and metaphoric motion and action (e.g., go-back + become-alive as in 88).

(84) **ʔuucuʔuk**w̓it̓asaḥ **yaacuk** c̓uumaʕas.

ʔuucuʔuk-w̓it̓as=(m)aˑḥ **yaacuk** c̓uumaʕas

go.to.DR-going.to=REAL.1SG **walk.DR** Port.Alberni

'I'm going to walk to Port Alberni.' (**B**, Bob Mundy)

(85) wik̓iis **x̣ax̣aał łaakʷiił** siy̓a.

wik=!iˑs **x̣ax̣aał** **łaakʷiił** siy̓a

NEG=CMMD.2SG>1SG **feel.sorry** **mistreat** 1SG

'Don't feel sorry for me, mistreating me.' (**C**, *tupaat* Julia Lucas)

(86) **ʔanasɬ**intwaʔš **ɬawiɬšƛ.**

ʔana-siła=int=waˑʔš **ɬawiɬ-šiƛ**

only-do=PST=HRSY.3 **lie.down-MO**

'He just laid down.' (**Q**, Sophie Billy)

(87) naẏiiʔaḵaƛin **kuẇiła wałaak.**

naẏiiʔak=!aƛ=(m)in **kuẇiła** **wałaak**

immediately=NOW=REAL.1PL **go.ahead** **go.to.DR**

'We immediately went ahead and went.' (**B**, Marjorie Touchie)

(88) **huʔacači**ʔaqƛsuuk **tiičačiƛ.**

huʔa-ca-čiƛ=!aaqƛ=suuk **tiič-°ačiƛ**

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.

(89) **ʔanasiła**ʔi **kuẇiła ʔucačiƛ** makuwił.

ʔana-siła=!iˑ **kuẇiła** **ʔu-ca-čiƛ** makuwił

only-do=CMMD.2SG **go.ahead** **X-go.to-MO** store

'Just go to the store.' (**C**, *tupaat* Julia Lucas)

(90) **huʔacačiƛ**ẇiɬasaḥ **šiiƛuk wałaak** yuuɬuʔiɬʔatḥ.

huʔa-ca-čiƛ-ẇiɬas=(m)aˑḥ **šiiƛuk** **wałaak** yuuɬuʔiɬʔatḥ

back-go-MO-going.to=REAL.1SG **move.house.DR** **go.to** Ucluelet

'I'm going to move back to Ucluelet.' (**B**, Bob Mundy)

It is possible for one of the verbs and its object (that is, the full VP of one of the serial verbs) to interrupt the other verb and its object, as in (91, 92).

(91) ʔuucƚiiḥs$_{v_1}$ [ƛ̓iḥaa]$_{v\_2}$ Queens Cove$_{obj_1}$.

ʔuucƚiiḥ$_{v_1}$=s [ƛ̓iḥ-(y)aˑ]$_{v\_2}$ Queens Cove$_{obj_1}$

go.toward.DR=STRG.1SG drive-CV Queens Cove

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

(92) hiniicintiisʔinɬ$_{v_1}$ [ʔucič̓ƛ$_{v_2}$ ciquuwɬi$_{obj_2}$]$_{vp\_2}$ ƚaatʾaʔiskqs$_{obj_1}$.

hina-iic$_{v_1}$=int=(y)iis=ʔinɬ [ʔu-ci-čiƛ$_{v_2}$ ciq-uwiɬ=ʔiˑ$_{obj_2}$]$_{vp\_2}$ L.<t>-ƚaʾa=ʔis=uk=qaˑs$_{obj_1}$

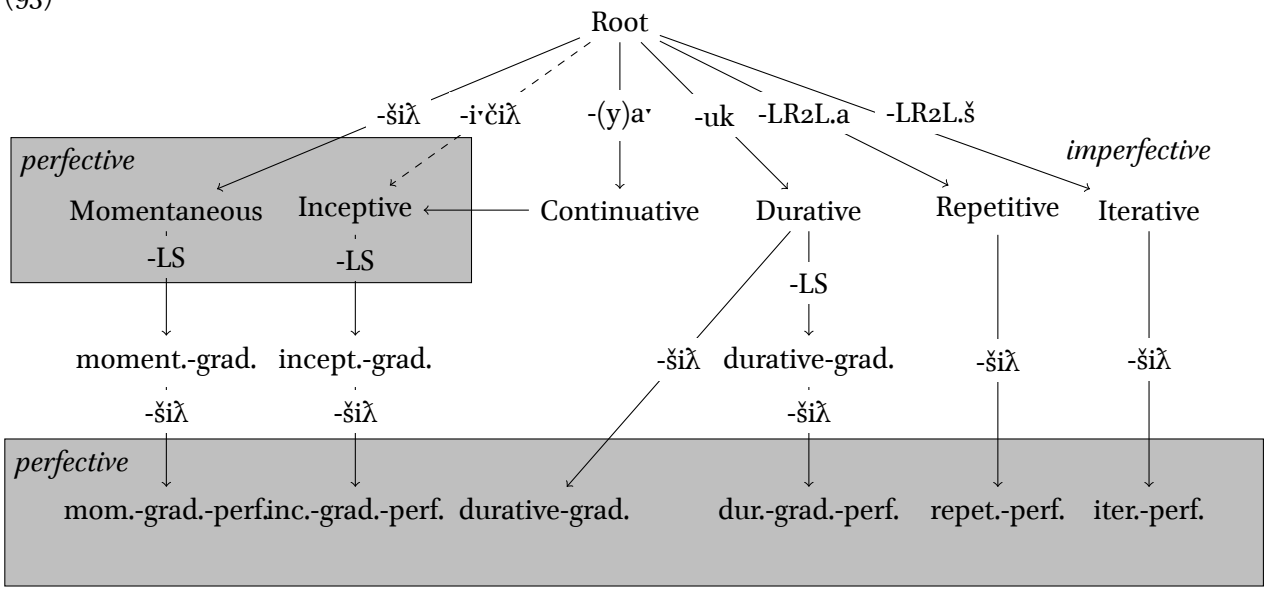
EMPTY-carry=PST=WEAK.1SG=HABIT X-go.to-MO pray-building PL-child=DIM=POSS=DEFN.1SG

'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 derivations in (93) give a simplified view of my understanding of how these aspects are related to each other. Much of this is taken from Davidson (2002), as well as personal correspondence with Davidson, who deserves much credit for working out this system. My understanding of the inceptive as underlyingly continuative + perfective is indebted to Werle.[2] To simplify the graph, I have combined repetitive-perfective, graduative-perfective, and iterative-perfective into a single node, since verbs in this form cannot undergo further aspectual change.

[2]Note that this means that the morphology for the continuative and inceptive do not "stack," unlike the other aspect forms. So momentaneous + graduative is realized as *-šiƛ̓* and also a long-short template. However continuative + inceptive is simply *-iˑčiƛ̓*, not *-(*y*)*aˑ-iˑčiƛ̓*. In my implementation, I treat the inceptive as a fully separate aspect, although I believe it is conceptually continuous + perfective.

(93)



The requirements on SVC aspectual agreement only seem to extend to the level of perfective vs imperfective. In (94), the two verbsare both in the durative aspect. In the ungrammatical 95, the second verb has been moved to the momentaneous, which is a perfective aspect, and mismatches with the first verb, which remains in an imperfective aspect.

(94) ʔuuciẏukẇiɬass yuuɬuʔiɬʔatḥ yaacuk.

ʔuuciẏuk-ẇiɬas=s yuuɬuʔiɬʔatḥ yaacuk

go.DR-going.to=STRG.1SG Ucluelet walk.DR

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

(95) *ʔuuciẏukẇiɬass yuuɬuʔiɬʔatḥ yaacšiƛ.

ʔuuciẏuk-ẇiɬas=s yuuɬuʔiɬʔatḥ yaacšiƛ

go.DR-going.to=STRG.1SG Ucluelet walk.PF

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

(96) and (97) show the same pattern. In (96), the first verb *ƛiḥaa* is in the continuative aspect, which is imperfective, and the second verb *waałšiƛ* is in graduative, which is also imperfective. In (97), the

same two verb roots are used, but instead of imperfective, graduative *waałšiƛ*, there is momentaneous, perfective *wałšiƛ*. This aspectual mismatch causes (97) to be ungrammatical.

[[TODO: CHANGE BASED ON 3/24 SESSION]]

(96) ƛiḥaamitniš siẏa łuučḿuupukqs waałšiƛ.

ƛiḥ-(y)aˑ=(m)it=niˑš siẏa łuučḿuup=uk=qs wał-šiƛ-LS

drive-CV=PST=STRG.1PL 1SG sister=POSS=DEFN.1SG go.home-MO-GR

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

(97) *wałšiƛẃiɬasniš ƛiḥaa.

wał-šiƛ-ẃiɬas=niˑš ƛiḥ-(y)aˑ

go.home-MO-going.to=STRG.1PL drive-CV

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.

(98) ʔucičƛiis šiiƛuk mituunii.

ʔu-ci-čiƛ=(y)iis šiiƛuk mituunii

X-go-MO=WEAK.1SG move.house.DR Victoria

'I moved to Victoria.' (**Q**, Sophie Billy)

[[TODO: šiiƛuk is ambiguous between PF and IMPF, so don't use it, use one of SB's other examples.]]

(99) ʔuucɬiiḥiis šiiƛuk mituunii.

ʔuucɬiiḥ=(y)iis šiiƛuk mituunii

go.toward.DR=WEAK.1SG move.house.DR Victoria

'I moved to Victoria.' (**Q**, Sophie Billy)

4.2.1.2 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 *hiɬ* 'be at' as well as intransitive locations like *hitaas* or *ƛ̓aaʔaas* 'be outside' and *hitinqis* 'be at the beach.'

(100) hiɬʔii wiinapuƛ.

hiɬ=ɬiˑ wiinapuƛ

be.at=CMMD.2SG stop.MO

'Stop there.' (**B**, Bob Mundy)

(101) hitaasitaḥ ciiqciiqa.

hitaas=(m)it=(m)aˑḥ ciq-LR2L.a

be.outside=PST=REAL.1SG speak-RP

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

As with Type I, it is possible in this construction for the transitive location verb *hiɬ* 'be at' to be split from its object by the other verb (102), or the other verb and its object (103).

(102) hiłqiimitʔišʔał huuxsʔatu nučii.

hił-qii=(m)it=ʔiˑš=ʔaˑł huuxsʔatu nuč-iˑ

be.at-on.top=PST=STRG.3=HABIT rest.DR mountain-NMLZ

'He rests on top of mountains.' (**N**, Fidelia Haiyupis)

(103) hiłqiiʔaƛin ɬaacsiičiƛ čums nučii.

hił-qii=!aƛ=in ɬaacsa-iˑčiƛ čums nuč-iˑ

be.at-on.top=NOW=WEAK.1PL see.CV-IN bear mountain-NMLZ

'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 (100) and imperfective verbs (102). 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 (103) and imperfective verbs (101).

Unlike Type I verbs, there is a strict ordering requirement. The location verb must always come before the action verb (104, 105).

(104) hitaasitaḥ ciiqciiqa.

hitaas=(m)it=(m)aˑḥ ciq-LR2L.a

outside-PST=REAL.1SG speak-RP

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

[[TODO: You forgot to change this to =imt, that may be why bob rejected it, find other ex. or retry with Bob]]

(105) *ciiqciiqamitaḥ hitaas.

ciq-LR2L.a=(m)it=(m)aḥ hitaas

speak-RP=PST=REAL.1SG outside

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

(106) hiłʔaƛin mamuuk wałyookqs.

hił=!aƛ=in mamuuk wałyuu=ʔak=qaˑs

be.at=NOW=STRG.1SG work.DR home=POSS=DEFN.1SG

'We are working at my home.' (**Q**, Sophie Billy)

(107) *mamuuk̓ƛin hił wałyookqs.

mamuuk=!aƛ=in hił wałyuu=ʔak=qaˑs

work=NOW=STRG.1SG be.at home=POSS=DEFN.1SG

Intended: 'We are working at my home.' (**Q**, Sophie Billy)

[[TODO: Are these the best ex's? Comes from a long session with FH, might have been fatigued about linker questions]]

(108) ƛ̓aaʔaasči ʕaaqʕaaqa.

ƛ̓aaʔaas=či ʕaq-LR2L.a

outside=CMGO.2SG yell-RO

'Go yell outside.' (**N**, Fidelia Haiyupis)

(109) *nunuukči ƛaaʔaas.

nunuuk=či ƛaaʔaas

sing.DR=CMGO.2SG outside

Intended: 'Go sing outside.'[3] (**N**, Fidelia Haiyupis)

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[3](109) 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 §5.

One of my speakers, *tupaat* Julia Lucas did accept, under elicitation and after dealing with many such constructions over many sessions, sentences like (105, 107, 109). However, she has never produced utterances of this type in any texts I have collected from her, and my earlier elicitation work had her rejecting these sentences. 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.

4.2.1.3 III. Adposition-like verbs

A fuller discussion of adposition-like words will have to wait for §5.2.3. 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 (110, 111). This includes verbs with basic commative, 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 adposition-like verb) and its object (112).

(110) hiinasiƛayaʔiš haaẇacsaċumʔi ʔuuḥẇał kʷaacsaċum.

hina-aˑsiƛ-LS.aya=ʔiˑš	haaẇacsaċum=ʔiˑ	ʔu-L.ḥẇał	kʷaacsaċum
EMPTY-on.a.platform.MO-GRAD=STRG.3SG	table=ART	X-use	chair

'Using the chair he climbed onto the table.' (**N**, Fidelia Haiyupis)

(111) ʔuupaaɬẇiɬasniš ẏukʷiiqsu ʔucačiƛ Campbell River.

ʔuupaaɬ-ẇiɬas=ni·š ẏukʷ-i·qsu 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)

(112) 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 adposition-like verbs inflect for aspect, and in this way are similar to the locative verb *hił*. Like *hił* and like Type II SVCs, adpositio-likes can serialize with both perfective (111, 113) and imperfective verbs (110, 112). Unlike Type I and II SVCs, the "interrupting verb phrase" cannot be a transitive verb with an argument.

(113) ʔucačiʔaƛukʷitaḥ ɬaṅeʔis ċuumaʕas ʔukʷink yaaqsčaʕinʔitq.

ʔu-ca-čiƛ=!aƛ=uk=(m)it=(m)a·ḥ ɬaṅa=ʔis ċuumaʕas ʔu-(č)ink yaq-L.(k)sčaʕin=ʔi·tq

X-go-MO=NOW=POSS=PST=REAL.1SG child=DIM Port.Alberni X-with who-friendly=DEFN.3

'My child went to Port Alberni with his friend.' (**B**, Bob Mundy)

(114) *ʔukʷinƙaƛukʷitaḥ ʔucačiƛ ɬaṅeʔis yaaqsčaʕinʔitq.

ʔu-(č)ink=!aƛ=uk=(m)it=(m)a·ḥ ʔu-ca-čiƛ ɬaṅa=ʔis yaq-L.(k)sčaʕin=ʔi·tq

X-with=NOW=POSS=PST=REAL.1SG X-go-MO child=DIM who-friendly=DEFN.3

Intended: 'My child went with his friend.' (**B**, Bob Mundy)

4.2.1.4 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 (*-ƛ̓iis* and *haʔuk*, as in 115) and cry and cry for (*ʕiḥak* and *ʔuʔuuẏuk*, as in 116). Speakers frequently will use both versions in a sentence.

(115) ʔu**ʔiiċ**aʔaƛ̓̆ **haʔuk.**

ʔu-**ƛ̓iic**=ƛ̓aƛ̆=ƛ̓iˑ **haʔuk**

x-**eat.dr**=now=cmmd.2sg **eat**

'Eat it!' (**Q**, Sophie Billy)

(116) **ʕiḥak**itʔiš **ʔuʔuuẏuk**[4] ʔumʔiiqsakʔi.

ʕiḥ-ak=(m)it=ʔiˑš **ʔuʔuuẏuk** ʔumʔiiqsu=ʔak=ʔiˑ

cry-dr=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 (117). This characteristic doubling can also occur with *ʔiiqḥuk* 'tell' (118).

(117) **waa**ʔaƛ̓̆iič **ʔuumaċk^{w}** ʔuušḥẏimskqs.

waa=ƛ̓aƛ̆=(y)ii=č **ʔu-L.maċuk** ʔuuš-(q)ḥẏuˑ-mis=uk=qaˑs

say=now=weak.3=hrsy **x-talk.about** some-be.related.or.friends-nmlz=poss=defn.1sg

'I heard he was talking about my friends or family.' (**Q**, Sophie Billy)

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[4]Compare SS ʔuʔuuyuk. TODO

(118) ʔuḥʔaƛ̓iič ṅuẇiiqskqs **ʔuumaćkʷ ʔiiqḥuk** ʔumʔiiqskqs.

ʔuḥ=ʔaƛ̓=(y)ii=č ṅuẇiiqsu=ʔak=qa·s **ʔu-L.maćuk ʔiiqḥ-uk** ʔumʔiiqsu=ʔak=qa·s

be=NOW=WEAK.3=HRSY father=POSS=DEFN.1SG **talk.about tell-DR** 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.

(119) ʔu**ʔiis**ʔaƛ̓in **haʔuk** suuḥaa.

ʔu-**!iis**=!aƛ̓=!in **haʔuk** suuḥaa

X-**eat**=NOW=CMMD.1PL **eat.DR** spring.salmon

'Let's eat spring salmon!' (**B**, Bob Mundy and Marjorie Touchie)

As with Type I serialization, aspectual agreement is required (120-122).

(120) **haʔuk**ẇiɬasin ʔu**ʔiis** suuḥaa.

haʔuk-ẇiɬas=(m)in ʔu-**!iis** suuḥaa

eat.DR-going.to=REAL.1PL X-**eat** spring.salmon

'We're going to eat spring salmon.' (**B**, Bob Mundy and Marjorie Touchie)

(121) ***haʔuk**ẇiɬasin ʔu**ʔiisšiƛ̓** suuḥaa.

haʔuk-ẇiɬas=(m)in ʔu-!iis-šiƛ̓ suuḥaa

eat.DR-going.to=REAL.1PL X-**eat-MO** spring.salmon

Intended: 'We're going to eat spring salmon.' (**B**, Bob Mundy and Marjorie Touchie)

(122) **haʔukši**ʔaƛ̓in ʔu**ʔiisšiƛ̓** suuḥaa.

haʔuk-šiƛ̓=!aƛ̓=(m)in ʔu-**!iis-šiƛ̓** suuḥaa

eat.DR-MO=NOW=REAL.1PL X-eat-MO spring.salmon

'We start eating spring salmon.' (**B**, Marjorie Touchie)

4.2.1.5 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 (§4.3) 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 (§4.3), 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, (123) is from an exhortative text, and immediately follows the command "Don't throw your clothes on the floor."

(123) sukʷiʔi ƙašsaap

su-kʷiƛ=!iˑ ƙaš-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 (124), my consultant said it was in the wrong order, and didn't make sense.

(124) # ƛ̓ašsaaƛ̓pi sukʷiƛ̕

ƛ̓aš-saˑp=!iˑ su-kʷiƛ̕

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. (125) was a sentence given by a consultant, and when I asked about (126) her response was that it sounded backwards.

(125) ʔucičiʔim pankuupaa ẏakšiƛ̕ siičił.

ʔu-ci-čiƛ̕=!im pankuupaa ẏak-šiƛ̕ 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)

(126) ?? ẏakšiʔim siičił ʔučič̓ƛ̕ pankuupaa.

ẏak-šiƛ̕=!im si-L.(č)ił ʔu-ci-č̓ƛ̕ pankuupaa

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 (127) or giving formal instructions to children (128).

(127) ƛ̓iptqšiʔin ƛ̓anisẏakukqin wałaak hitinqisʔi.

ƛ̓iptq-šiƛ̕=!in ƛ̓an-°is-ẏak=uk=qin wałaak hitinqis=ʔiˑ

pack-MO=CMMD.1SG camp-at.beach.DR-for=POSS=DEFN.1SG go.to.MO at.beach=ART

'Let's pack our camping stuff and go to the beach.' (**B**, Marjorie Touchie)

(128) naʔaataḥʔatmaʔaała nunuukʔi ṅaacsa huyaałʔi.

naʔaataḥ=!at=maˑ=ʔaała nunuuk=ʔiˑ ṅaacsa huyaał=ʔiˑ

listen=PASS=REAL.3=HABIT sing=ART see.DR 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 (128) 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?]]

TODO recast the below

(129) naʔaataḥʔaqƛ̓iʔaał ʔiisaak ʔuukʷił ʔaʔiič̓um.

naʔaataḥ=!aqƛ̓=!iˑ=ʔaał ʔiisaak ʔu-L.(č)ił ʔaʔiič̓um

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.

(130) naʔaatḥi ṅaacuuḥ huuḥtikšiiḥ.

naʔaatḥ=ʔiˑ ṅaacuuḥ 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. Neither does aspect agree across overt clausal coordination. The examples below show the verbs in this construction disagreeing (131) and then agreeing (132) in aspect. There is a slight difference in meaning.

(131) 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)

(132) 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 (130), Type V SVCs do not allow VPs to be interrupted, as seen in Types I-IV.

The context for (133–135) 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, (133) was suggested by my consultant, and I suggested (134) and (135).

(133) 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)

(134) 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)

(135) *cassaaps čˀaxʷaciis ʕiniiƛ.

cas-saˑp=s čˀaxʷac-iis ʕiniiƛ

chase-MO.CAUS=STRG.1SG bucket-hold.DR dog

Intended: 'Carrying the bucket, I chased the dog.' (**C**, *tupaat* Julia Lucas)

Although it confused me at the time, I now understand the VP adjacency constraint on Type V SVCs to explain the ungrammaticality of (135). There is an aspectual mismatch in the verbs, so this sentence is not of Type I (manner + action), and it does not match the lexical types for II-IV, containing no location word, no adposition-like verb, and no transitive-intransitive semantic doubling. The only difference in (135) from the previous examples is that *cassaap* is separated from its object *ʕiniiƛ*. That is not allowed under this construction.

I tested this theory with another speaker from another dialect region, Sophie Billie. (136) and (137) show a minimal pair where in (137) there is the "typical" V1 VP2 Obj1 structure of other SVCs. Despite the verb of motion 'go' and the action 'carry', this is not a Type 1 motion + manner construction. Sophie consistently translated *hiniic ṗatqukkqs* as 'pack my belongings' or 'get my luggage,' as a preparatory step for moving to Vancouver. The interpretation of (136) is sequential action: First pack/carry one's things, then go to Vancouver.

(136) hiniiċƛintiis ṗatqukkqs ʔučičƛ Vancouver.

hina-iic=!aƛ=int=(y)iis ṗatquk=uk=qaˑs ʔu-ci-čiƛ Vancouver

EMPTY-carry=NOW=PST=WEAK.1SG baggage=POSS=DEFN.1SG X-go-MO Vancouver

'I packed my belongings and went to Vancouver.' (**Q**, Sophie Billie)

(137) hiniiċƛintiis ʔučičƛ Vancouver ṗatqukkqs.

hina-iic=!aƛ=int=(y)iis ʔu-ci-čiƛ Vancouver ṗatquk=uk=qaˑs

EMPTY-carry=NOW=PST=WEAK.1SG X-go-MO Vancouver baggage=POSS=DEFN.1SG

Intended: 'I packed my belongings and went to Vancouver.' (**Q**, Sophie Billie)

Finally, there are a few properties which span all constructions. Cross-serial dependencies are never possible (138, 139).

(138) ʔuuḥẃałʔiš kʷaacsaċum ƛ̓amaasiƛ haaẃacsaċumʔi.

ʔu-L.ḥẃał=ʔiˑš kʷaacsaċum ƛ̓amaasiƛ haaẃacsaċum=ʔiˑ

x-use=STRG.3 chair climb.MO table=ART

'Using a chair he climbed onto the table.' (**C**, *tupaat* Julia Lucas)

(139) *ʔuuḥẃałʔiš ƛ̓amaasiƛ kʷaacsaċum haaẃacsaċumʔi.

ʔu-L.ḥẃał=ʔiˑš ƛ̓amaasiƛ kʷaacsaċum haaẃacsaċum=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. (140) is an example of Type V (separable action) serialization and Type III (adposition-like) serialization in a single clause. As in the English, it is not obvious from the sentence alone whether the adposition 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.

(140) ƛ̓iptqšiʔi hiniic muč̓ičtup ʔuuʔatup ʔumʔi.

ƛ̓iptq-šiƛ-!iˑ hina-iic.DR muč̓ič-(s)tup ʔuuʔatup ʔumʔi

pack-MO=CMMD.2SG EMPTY-carry clothing-stuff do.for your.mother

'Pack and carry clothes for your mother.' (**C**, *tupaat* Julia Lucas)

4.2.2 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 (141) (Type I), where the causative only affects the semantics of the verb *ca* 'go' and not to the verb *ƛ̓ičiƛ* 'shoot'.

(141) ʔaḥʔaaʔaƛ̓na ƛ̓ičiƛ ʔucaap ḥaa hupałʔi.

ʔaḥʔaaʔaƛ̓=na· ƛ̓i-čiƛ ʔucaap ḥaa hupał=ʔi·

and.then=NEUT.1PL shoot-MO make.go.to D3 sun.or.moon=ART

'Then we shoot them toward the moon.' (C, *tupaat* Julia Lucas)

It is also possible for the causal morpheme to affect both verbs in an SVC (142) (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 (143) (Type I) and (144) (Type V).

[[TODO Get a different example]]

(142) ʔućaʔaṗat ṫuḥćiti hił ʔapẇinʔatʔi.

ʔucaap=!at ṫuḥćiti hił ʔapẇin=!at=ʔi·

make.go=PASS head be.at shoulder=POSS.INALIEN=ART

'He put his head on his shoulder.' (C, *tupaat* Julia Lucas)

(143) ʔaḥʔaaʔaƛ̓ʔał hiłʔap ṫiqʷaasʔaṗaƛ̓ʔał ḥaakʷaaƛ̓ʔi Monica.

ʔaḥʔaaʔaƛ̓=ʔał hił=!ap ṫiqʷ-aas=!ap=!aƛ̓=ʔał ḥaakʷaaƛ̓=ʔi· 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)

(144) ʔuuwaʔaƛquuk c̓ic̓atmiɬ[5] hašaḥsapsuuk k̓ašsaap.

ʔu-L.waƛ=!aƛ=quuk c̓ic̓atmiɬ hašaḥ-saˑp=suuk k̓aš-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 (128). 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 (145)[6] and with two transitive verbs, where one receives a passive interpretation and the other does not, as in (146).

(145) ʔuḥʔats ʕiniiƛ ƛawiičiʔat kamatquk.

ʔuḥ=!at=s ʕiniiƛ ƛaw-iˑčiƛ=!at kamatq-uk

be=PASS=STRG.1SG dog near-IN=PASS run-DR

'It was the dog that ran toward me.' (C, *tupaat* Julia Lucas)

(146) ʔaḥʔaaʔaƛsa huʔaas ṅaacsiičiƛ naani ʔuuḥẇałʔat naaniiɬqḥ.

ʔaḥʔaaʔaƛ=sa huʔaas ṅaacsa-iˑčiƛ naani ʔuuḥẇał=!at naani-°iɬ-(q)ḥ

and.then=NEUT.1SG again see.CV-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 (147), 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. (148)

[5]The normal word for a seaserpent scale is c̓ipałmis (see Sapir & Swadesh 1939 p. 281). However, Julia Lucas insists that it is c̓ic̓atmiɬ.

[6]In (145) the passive also appears on the clefting copula *ʔuḥ*. Voice agreement is a required feature of clefts.

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).

(147) ƛawiičʔats ɬuučḿuupukqs hił ċuumaʕaas.

ƛaw-°i·čƛ=!at=s ɬuučḿuup=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)

(148) ƛawiičʔats ɬuučḿuupukqs hiłʔat ċuumaʕaas.

ƛaw-°i·čƛ=!at=s ɬuučḿuup=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.

4.2.3 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) adposition-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 adposition 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.]]

4.3 HPSG Analysis and Implementation

Chapter 5

THE LINKER

The linker morpheme in Nuuchahnulth -(*q*)*ḥ*, like serial verb constructions (§4, 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.

5.1 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 §5.3.

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 morphological attachment properties of this special coordinator (§5.1.2), followed by its syntactic properties (§5.1.3–5.1.8).

5.1.1 Comparison with other coordination

The linker differs from the other coordinators in the language. Various types of 'and' coordination are done with the word *ʔaḥʔaaʔaƛ* and participant coordination with *ʔuḥʔi*(*i*)*š*. These words coordinate

clauses, VPs, and participant phrases, while I will claim that the linker coordinates predicates.

Much like English *and*, the coordinator *ʔaḥʔaaʔaƛ* may occur at the beginning or middle of a sentence. I distinguish sentence-initial and sentence-medial *ʔaḥʔaaʔaƛ* by prosody, pause, and the presence of clausal clitics.

In its most common use at the beginning of a sentence, *ʔaḥʔaaʔaƛ* can host the clausal clitics (149, 150) or that can be deferred to the predicate (151).

(149) ʔaḥʔaaʔaƛitweʔinʔaała wiinapi haʔukw̓it̓asin waaʔat, nay̓iiʔak̓aƛquuč t̓iqsčiił haʔumʔi.

ʔaḥʔaaʔaƛ=(m)it=weˑʔin=ʔaała	wiinapi	haʔuk-w̓it̓as=(m)in	waa=!at	nay̓iiʔak=!aƛ=quu=č	
and=PST=HRSY.3=HABIT	hold.still.DR	eat-going.to=STRG.1PL	say=PASS	immediately=NOW=PSSB.3=HRSY	
t̓iq-sči-°ił	haʔum=ʔiˑ				
sit-beside-indoors.DR	food=ART				

'Then he would stop and wait for someone to say "We are going to eat," and immediately he would sit down by the food.' (**B**, Marjorie Touchie)

(150) ʔaḥʔaaʔaƛsa huʔaas n̓aacsiičiƛ naani.

ʔaḥʔaaʔaƛ=saˑ	huʔaas	n̓aacsa-iˑčiƛ	naani
and=NEUT.1SG	again	see.DR-INCEP	grizzly.bear

'And then I also saw a grizzly bear used.' (**C**, *tupaat* Julia Lucas)

[[TODO: Find a better example of below]]

(151) ʔaḥʔaaʔaƛ ʔuk̓ʷič̓ap̓aƛsuuk ʔiiḥ ciyapuxs.

ʔaḥʔaaʔaƛ	ʔu-k̓ʷič=!ap=!aƛ=suuk	ʔiiḥ	ciyapuxs
and	X-wear=CAUS=NOW=NEUT.2SG	big	hat

'And you wear a big hat.' (**C**, *tupaat* Julia Lucas)

Sentence-intermediate *ʔaḥʔaaʔaƛ* can coordinate two VPs, which share the clitic subjects (152, 153).

(152) ʔaa nunuukšiƛnišʔaał ʔaḥʔaaʔaƛ huułhuuła huuuu tuupšiʔeƛquu.

ʔaa nunuuk-šiƛ=ni·š=ʔaał ʔaḥʔaaʔaƛ huł-LR2L.a huuuu tup-šiƛ-LS=!aƛ=quu
oh sing.DR-MO=STRG.1PL=HABIT and dance-RP whoa.long.time dark-MO-GR=NOW=PSSB.3

'Oh, we sing and dance, hey for a long time, when it gets dark.' (**C**, *tupaat* Julia Lucas)

(153) ʔaƛa čaakupiiḥ čaaniʔišʔaałʔał t̓aaqyiił ʔaḥʔaaʔaƛ ʕapkšiƛ ʔuukʷił.

ʔaƛa čakup-L.iiḥ čaani=ʔi·š=ʔaał=ʔał t̓aaqyiił ʔaḥʔaaʔaƛ ʕapk-šiƛ
two man-PL little.while=STRG.3=HABIT=PL stand.inside.DR and grapple-MO

ʔu-L.(č)ił
x-do.to

'Two men stand inside for a little while and try to grapple each other [in wrestling games].' (**C**, *tupaat* Julia Lucas)

As with English *and*, *ʔaḥʔaaʔaƛ* can be used in this way to imply order (154).

(154) ʔutwiiʔaqƛ̓in nunuuk ʔaḥʔaaʔaƛ haʔukšiƛ.

ʔu-(t)wii=!aqƛ=(y)in nunuuk ʔaḥʔaaʔaƛ haʔuk-šiƛ
x-first=FUT=WEAK.1PL sing.DR and eat.DR-MO

'First we will sing and then eat.' (**C**, *tupaat* Julia Lucas)

Though less common, *ʔaḥʔaaʔaƛ* can also be used to coordinate participants (155).

(155) ʔaƛamitʔišʔaałʔał ʕaaḥuusʔatḥ ʔaḥʔaaʔaƛ ḥiškʷiiʔatḥ.

ʔaƛa=(m)it=ʔi·š=ʔaał=ʔał ʕaaḥuusʔatḥ ʔaḥʔaaʔaƛ ḥiškʷiiʔatḥ
two=PST=STRG.3=HABIT=PL Ahousaht and Hesquiaht

'There were two, the Ahousahts and the Hesquiahts.' (**C**, *tupaat* Julia Lucas)

The coordinator *ʔuḥʔi(i)š* is more constrained. It only coordinates participants (156).

(156) ʔuḥintʔinɬ ʔukʷiiɬ ṅuẇiiqsknaqs ʔuuḥẇaɬ ḥumiis ʔuḥʔiiš ċistuup.

ʔuḥ=int=ʔinɬ ʔu-(č)iiɬ ṅuẇiiqsu=ʔak=naqs ʔu-L.ḥẇaɬ ḥumiis ʔuḥʔiiš ċis-(š)tuːp
be=PST=HABIT x-make father=POSS=PST.DEFN.1SG x-use red.cedar and line-kind

'It was my dad that made it using red cedar and rope.' (**Q**, Sophie Billy)

ʔaḥʔaaʔaƛ̓ coordinates clauses (which differ in subject), VPs (which share a subject), and participants. *ʔuḥʔi(i)š* coordinates only participants. The linker, as I will argue below, coordinates a different syntactic category: predicates. As a suffix, it has a greater degree of freedom in its sites of attachment, and its scope of coordination differs from the free morpheme coordinators.

5.1.2 Attachment properties

The linker shows considerable flexibility in the stems it attaches to, attaching to nouns (157), adjectives (158), verbs (159), and adverbs (160).

(157) ɬuucmaqḥitqaċ̓aʔaał taakšiƛ̓ ṗiišmita.

ɬuucma-(q)ḥ=(m)it=qaːċ̓a=ʔaał taakšiƛ̓ ṗiišmita
woman-LINK=PST=DUBV=HABIT always gossip.CV

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

(158) ɬikʷaamitwaʔiš čims ḥaaʔakqḥ.

ɬikʷ-(y)aː=mit=waːʔiš čims ḥaaʔak-(q)ḥ
dig-CV=PST=HRSY.3 bear strong-LINK

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

(159) ciqinḵ̓aƛ̓na ƛ̓iḥaaqḥ.

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

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

(160) ẏuuqʷaaqḥs ʕasqii ʔaanaḥi wik hinʔałšiƛ.

ẏuuqʷaa-(q)ḥ=s ʕasqii ʔaanaḥi wik hinʔał-šiƛ

also-LINK=STRG.1SG bald only NEG realize-MO

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

[Context: My friend is going bald. I'm also going bald but I don't look in the mirror much and haven't noticed.[1]]

However, the linker cannot attach complementizers (161, 162).

(161) ʔuušcukʔisit ʔani ʔunaḥʔisitqa.

ʔuušcuk=ʔis=(m)it ʔani ʔunaḥ=ʔis=(m)it=qaˑ

difficiult=DIM=PST COMP small=DIM=PST=EMBD

'It was a little difficult (to do) because it's small.' (**B**, Bob Mundy)

(162) *ʔuušcukʔisit ʔaniqḥ ʔunaḥʔisitqa.

ʔuušcuk=ʔis=(m)it ʔani-(q)ḥ ʔunaḥ=ʔis=(m)it=qaˑ

difficult=DIM=PST COMP-LINK small=DIM=PST=EMBD

Intended: 'It was a little difficult (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 3). 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 §5.1.7. 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.

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

5.1.3 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.[2] It is possible for either predicate in an utterance to host the linker, as in (163, 164).

(163) 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)

(164) 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 (165) or second (166) predicate in the utterance.

(165) 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)

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[2]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 §5.1.9.

(166) 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 (167, 168) below.

(167) qiiʔiɬs ƛupkaaqḥ.

qiiʔiɬ=s ƛupk-(y)aˑ-(q)ḥ

lie.in.bed.a.long.time=STRG.1SG awake-DR-LINK

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

(168) *ƛupkaaqḥs qii.

ƛupk-(y)aˑ-(q)ḥ=s qii

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

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

(168) has undergone two changes relative to (167): (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 (165, 166). But the latter change creates an utterance with "linked" predicate followed by the syntactically non-predicative adverb *qii* (168). In contrast, (167) contains two full predicates. Because the adverb *qii* cannot be a syntactic predicate, (168) 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 (169, 170).

(169) ʔuuʕaqstuƛaḥ ʔanik hił ʔaḥkuu.

ʔuuʕaqstuƛ=(m)aˑḥ ʔani=k hił ʔaḥkuu

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

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

(170) *ʔuuʕaqstuƛaḥ ʔanik hiłḥ ʔaḥkuu.

ʔuuʕaqstuƛ=(m)aˑḥ ʔani=k hił-(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 (170), where it is the sole predicate of the dependent clause. I was able to replicate a similar example with a Checleseht speaker from the other end of the dialect continuum (171, 172).

(171) ṅaacsiičƛintiis ʔin hił čimsʔii maḥteekitk.

ṅaaca-iˑčiƛ=int=(y)iis ʔin hił čims=ʔiˑ maḥtii=ʔak=ʔiˑtk

see.DR-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)

(172) *ṅaacsiičƛintiis ʔin hiłḥ čimsʔii maḥteekitk.

ṅaaca-iˑčiƛ=int=(y)iis ʔin hił-(q)ḥ čims=ʔiˑ maḥtii=ʔak=ʔiˑtk

see.DR-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.

5.1.4 Sharing second position suffixes and clitics

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

(173) hiɬḥʔum maḥt̓iiʔakqs wiinapuƛ̓.

hiɬ-(q)ḥ=ɬum	maḥt̓iˑ=ʔak=qs	wiinapuƛ̓
be.at-LINK=CMFU.2SG	house=POSS=DEFN.1SG	stop.MO

'Stop at my house.' (**N**, Fidelia Haiyupis)

The command portmanteau *=ɬum* in (173) syntactically scopes[3] over both predicates. My consultant did not accept this 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 (174): I am taking a friend home and we are leaving a gathering.

(174) waałšiƛ̓ẇit̓asniš ƛ̓iḥaaqḥ.

wał-šiƛ̓-LS-ẇit̓as=niˑš	ƛ̓iḥ-(y)aˑ-qḥ
go.home-MO-GRAD-going.to=STRG.1PL	drive-CV-LINK

'We're going to drive home.' (**C**, *tupaat* Julia Lucas)

Both verbs in (174) share the semantics of the modal suffix *-ẇit̓as*, because both the driving and the going home are intentional, not-yet-occurred events. I confirmed the sharing of the subject portmanteau

[3]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.

=niˑš by asking if it were possible to say (174) to mean that we were going to walk home but someone else was driving elsewhere. My consultant said no: (174) must mean that it is we who are going to go home and we who are doing it driving in a car.

(175) and (176) 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 (175). My rephrase in (176) with the linker was met with an immediate laugh.

(175) ṅačaałaḥʔaała ṁiƛaaʔaƛquu.

ṅačaał=(m)aˑḥ=ʔaała ṁiƛ-(y)aˑ=!aƛ=quu

read=REAL.1PL=HABIT rain-CV=NOW=PSSB.3

'I read whenever it rains.' (**B**, Bob Mundy)

(176) #ṅačaałaḥʔaała ṁiƛaaqḥ.

ṅačaał=(m)aˑḥ=ʔaała ṁiƛ-(y)aˑ-(q)ḥ

read=REAL.1PL=HABIT rain-CV-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.

5.1.5 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 §5.1.2, 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 (177) and may not come before the verb (178). When a linker is attached, the quantifier must be interpreted as the subject and may either come before (179) or after the verb (180).

Context for (177–180): My family and I are looking for a Christmas present for my sister.

(177) ʔuuwaʔaƛ ʔuuš.

ʔu-L.waƛ=!aƛ ʔuuš

x-find=NOW some

'He/she found something.' (*? Someone found it) (**C**, *tupaat* Julia Lucas)

(178) *ʔuuš ʔuuwaʔaƛ.

ʔuuš ʔu-L.waƛ=!aƛ

some x-find=NOW

Intended: 'He/she found something.' (**C**, *tupaat* Julia Lucas)

(179) ʔuuwaʔaƛ ʔuušqḥ.

ʔu-L.waƛ=!aƛ ʔuuš-qḥ

x-find=NOW some-LINK

'Someone found it.' (*He/she found something) (**C**, *tupaat* Julia Lucas)

(180) ʔuušqḥʔaƛ ʔuuwaƛ.

ʔuuš-qḥ=!aƛ ʔu-L.waƛ

some-LINK=NOW x-find

'Someone found it.' (*He/she found something) (**C**, *tupaat* Julia Lucas)

In (179, 180), 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 (179, 180).

Julia rejected an interpretation of (177) where non-linked *ʔuuš* 'some' was interpreted as the subject. However, in another context she produced (181), where *ʔuuš* 'some' is in fact given a subjective interpretation.

(181) ʔuušʔiišʔaał wiċik, ʔuuš ʕaċik, ʔuuš ʔuḿaaqƛ̓ ʔuuẏip.

ʔuuš=ʔi·š=ʔaał wiċik, ʔuuš ʕaċik, ʔuuš ʔuḿaaqƛ̓ 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 (181), 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 (181) 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 (182–184). The initial sentence puts two clauses together with a complementizer (182), but can be rephrased without a complementizer by using the linker (183, 184).

Context for (182–184): 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. (182) was suggested by my consultant, and we worked to rephrase it as (183) and (184). My consultant was adamant that (182) and (183) meant exactly the same thing. If this is true, then the linker is not adding any deep semantic content.[4]

[4]My analysis ends up putting in a relation AND. While this may not be totally meaningless, it is virtually meaningless.

(182) ċawaakitwaʔiš ṅaacsa niiʔatu c̓apac.

ċawaak=it=waˑʔiš ṅaacsa niiʔatu c̓apac

one=PST=HRSY.3 see.CV sink canoe

‘I hear that one (person) saw the canoe sink.’ (**C**, *tupaat* Julia Lucas)

(183) ċawaakḥitwaʔiš ṅaacsa niiʔatu c̓apac.

ċawaak-(q)ḥ=it=waˑʔiš ṅaacsa.CV niiʔatu c̓apac

one-LINK=PST=HRSY.3 see.DR sink canoe

‘I hear that one (person) saw the canoe sink.’ (**C**, *tupaat* Julia Lucas)

(184) quuʔasqḥitwaʔiš ṅaacsa niiʔatu c̓apacʔi.

quuʔas-(q)ḥ=it=waˑʔiš ṅaacsa niiʔatu c̓apac=ʔiˑ

person-LINK=PST=HRSY.3 see.CV sink canoe=ART

‘I hear that a person saw the canoe sink.’ (**C**, *tupaat* Julia Lucas)

Using the same setup as (182–184), I elicited sentences from another speaker. This consultant initially proposed the sentence in (185). I proposed (186) by removing the linker, which he rejected, and then (187), which he accepted.

(185) ṅaacsiičiƛweʔin ċawaakḥ niiʔatu c̓apac.

ṅaacsa-iˑčiƛ=weˑʔin ċawaak-(q)ḥ niiʔatu c̓apac

see.CV-IN=HRSY.3 one-LINK sink canoe

‘I hear that one (person) saw the canoe sink.’ (**B**, Bob Mundy)

(186) *ṅaacsiičiƛweʔin ċawaak niiʔatu c̓apac.

ṅaacsa-iˑčiƛ=weˑʔin ċawaak niiʔatu c̓apac

see.CV-IN=HRSY.3 one sink canoe

Intended: ‘I hear that one saw the canoe sink.’ (**B**, Bob Mundy)

(187) ẖaacsiičiƛweʔin ċawaakḥ quuʔas niiʔatu c̓apac.

ẖaacsa.CV-i·čiƛ=weʔin ċawaak-(q)ḥ quuʔas niiʔatu c̓apac
see-IN=HRSY.3 one-LINK person sink canoe
'I hear that one person saw the canoe sink.' (**B**, Bob Mundy)

Bob's response to removing the linker in (186) was to say, "It's not complete. One what? What did one see?" Following the basic structure of the Nuuchahnulth clause (§3), the participants of the syntactic predicate *ẖaacsiičiƛ* 'see' should be *ċawaak* 'one' and *niiʔatu c̓apac* 'sink canoe'. But *ċawaak*, as an adjective, cannot be a full NP participant without an article (Jacobsen 1979). So it is stranded and the utterance (186) is nonsensical. The presence of the linker in my consultant's initial proposed sentence (185) forces 'one' to be coreferenced with the subject of 'see', as already shown for the quantifiers in (177–180). The other participant of the seeing act (what is seen) is the dependent clause 'sink canoe'.

Example (187) 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 *ẖaacsiičiƛ* 'see' and its clausal object *niiʔatu c̓apac* 'the canoe sink.' In §5.1.3 I argued that linker constructions were either headed by the predicate lacking linker morphology or the linker itself. The syntax of (187), 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 (187) based on this preliminary analysis is given in (188).

(188) [ẖaacsa.CV-i·čiƛ=weʔin [ċawaak-(q)ḥ quuʔas]$_{\text{linked\_clause}}$ [niiʔatu c̓apac]$_{\text{participant\_of\_see}}$]
see-IN=HRSY.3 one-LINK person sink canoe

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

5.1.6 Ordering in linker constructions

I have already demonstrated that the non-linked predicate may be separated from its complement by an intervening linked predicate (185, 187, 188). The reverse ordering is also possible. The linked predicate

may be separated from its direct object by the non-linked predicate. In (189) the verb *hił* 'be at' and its object 'my house' are contiguous, but in (190) they are separated by the non-linked predicate *mamuuk* 'work'.

(189) hiłḥitin maḥt̓iiʔakqas mamuuk.

hił-(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)

(190) hiłḥitin mamuuk maḥt̓iiʔakqas.

hił-(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 (190) 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 (191) but not when the non-linked predicate was separated from its object (192, 193). 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.

(191) hiłḥsiiš ʔuukʷiił č̓upc̓upšumł maḥt̓iiʔakʔik.

hił-(q)ḥ=siːš ʔu-L.(č)iił č̓upc̓upšumł 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)

(192) ʔuuct̓iiḥs Queens Cove ƛ̓iḥaaqḥ.

ʔuuct̓iiḥ=s Queens Cove ƛ̓iḥ-(y)aː-(q)ḥ

go.toward.DR=STRG.1SG Queens Cove drive-CV-LINK

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

(193) *ʔuucṫiiḥs ƛ̓iḥaaqḥ Queens Cove.

ʔuucṫiiḥ=s ƛ̓iḥ-(y)aˑ-(q)ḥ Queens Cove

go.toward.DR=STRG.1SG drive-CV-LINK Queens Cove

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

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

5.1.7 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 (160), repeated as (194) below.

(194) ẏuuqʷaaqḥs ʕasqii ʔaanaḥi wik hinʔałšiƛ̓.

ẏuuqʷaa-qḥ=s ʕasqii ʔaanaḥi wik hinʔał-šiƛ̓

also-LINK=STRG.1SG bald only NEG aware-MO

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

The two predicates being tied together in (194) 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 (195) 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.'

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

(196) qiiḥsn̓aakcḵin ʔaḥ qʷiyiič [[qʷis] [ʔiiqḥii**qḥ** hitačink maatmaasʔi]] qaḥsaaṗaƛquuweʔin c̓amuʔałʔaƛquu yuułuʔiłʔatqḥ huuʕiiʔatḥuʔałʔaƛquu.

qiiḥsn̓aak-cḵin ʔaḥ qʷiyi=(y)ii=č [[qʷis] [ʔiiqḥii-**(q)ḥ** hitačink maatmaas=ʔiˑ]]
long.time-DIM D1 when=WEAK.3=HRSY do.thus still-link go.against tribe.PL=ART

qaḥ-saˑp=!aƛ=quu=weˑʔin c̓am-uʔał=!aƛ=quu yuułuʔiłʔatḥ-(q)ḥ huuʕiiʔatḥ-uʔał=!aƛ=quu.
kill-MO.CAUS=NOW=PSSB.3=HRSY.3 canoe-see=NOW=PSSB.3 Ucluelet-LINK 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)

TODO: NOTE: What is ʔiiqḥiiqḥ linking? It isn’t qʷis, it’s a sentence shoved in a longer sentence. Go look at preceding sentences. Is there a shorter example?

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]]

5.1.8 Dangling linkers

There is one case I know of where the linker does not appear to be linking its predicate to anything. I believe that the interpretation shows that there is an elided phrase (197).

(197) ʔuʔaałukḥʔiʔał.

ʔu-!aaɬuk-(q)ḥ=!iˑ=ʔał

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

‘Take care!’ (**N**, Fidelia Haiyupis)

The meaning of (197) 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.

Adam: It’s a typical farewell in Barkley dialects but in the north it is not typical.

5.1.9 Semantic and ordering preferences

Despite the relative flexibility of which predicate in a construction gets the linker (§5.1.3), 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 (198–200).

(198) ƛ̓aaʔaasḥiis ciiqmałap.

ƛ̓aaʔaas-(q)ḥ=(y)iis ciiqmałap

outide-LINK=WEAK.1SG speak.publicly

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

(199) ciiqmałapiis hiłḥ ƛ̓aaʔaas.

ciiqmałap=(y)iis hił-(q)ḥ ƛ̓aaʔaas

speak.publicly=WEAK.1SG be.at-LINK outside

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

(200) *ciiqmałapḥiis ƛ̓aaʔaas.

ciiqmałap-(q)ḥ=(y)iis hił-(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. (201) and (202) are repeated from (164) and (163) respectively.

(201) ciiqciiqaqḥitaḥ hitaas.

ciq-LR2L.a-(q)ḥ=(m)it=(m)aʷḥ hitaas

speak-RP-LINK=PST=REAL.1SG be.outside

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

(202) hitaasḥitaḥ ciiqciiqa.

hitaas-(q)ḥ=(m)it=(m)aʷḥ ciq-LR2L.a

be.outside-LINK=PST=REAL.1SG speak-RP

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

(203) *hitaasitaḥ ciiqciiqaqḥ.

hitaas=(m)it=(m)aʷḥ 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 (203) 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 (185) 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]]

5.1.10 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.[5] (§5.1.2)

2. A clause may not consist of only a linked predicate. (§5.1.3)

3. Both predicates in a linker construction shares the second-position inflectional information, including subject. (§5.1.4)

4. The linker does not add semantic content to a predicate. (§5.1.4)

5. The properties of the linker do not alter depending on whether it attaches to a verb or other part of speech. (§5.1.5)

6. It is possible for either predicate in a linker construction to be separated from their complement by the other predicate. (§5.1.6)

7. The linker attaches to the first word in its predicate complex, even if that first word is an adverb that precedes the predicate. (§5.1.7)

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. (§5.1.8)

9. There seems to be a preference for linked predicates to occur first and on location words (§5.1.9).

[5]There is more to say about a possible class of adpositions. This is addressed in §5.2.3.

5.2 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', *ʔuusaaḥi* '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 (5.1.2), 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 *ʔuusaaḥi* 'because of a thing' may not (5.2.1). Similarly, *ʔuyi* 'at the time' only accepts the linker marginally (5.2.2). Most of the adpositive-like verbs can also accept the linker (5.2.3), but not the special non-subject marking[6] adpositives *ʔuukʷiɬ* and *ʔuḥta*. This aligns with Woo's findings, where these words are functional and non-predicative.

The marginal cases of *ʔuusaaḥi* 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.

5.2.1 'Because' words

There are three words in Nuuchahnulth that roughly translate to English 'because': *ʔuusaaḥi* (all dialects), *ʔuunuuƛ*[7] (Barkley and Central, recognized but rare in Northern and Kyuquot-Checleseht) and *ʔunẃiiƛ* (Northern and Kyuquot-Checleseht only).

To lay some terminological groundwork, I will be using the technical terms *protasis* and *apodosis*. The

[6]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.]]

[7]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.

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 (204, 205), 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 (204), if at all.

(204) ʔuunuuƛitaḥ wik ƛuł weʔič. ʕiḥakita naẏaqak.

ʔuunuuƛ=(m)it=(m)aˑḥ wik ƛuł 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)

(205) ʔunẇiiƛiis mačiił ʔin ṁiƛaa.

ʔunẇiiƛ=(y)iis mačiił ʔin ṁiƛ-(y)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 (205) above and (206) below. The complementizer may not be used to introduce the protasis (207, 208).

(206) ʔuunuuƛs hiniiʔiƛ ʔin ṁiƛaa.

ʔuunuuƛ=s hiniiʔiƛ ʔin ṁiƛ-(y)aˑ

because=STRG.1SG inside.MO COMP rain-CV

'I came inside because it is raining.' (**N**, Fidelia Haiyupis)

Context for (207, 208): There are two teams playing tug-of-war. One has access to supernatural medicine and they are the winners.

(207) ʔunʔuuƛ̓ḥitqačaʔał hitaʔap ʔin ʕuʔinak.

ʔunʔuuƛ̓-(q)ḥ=(m)it=qačaʔał hitaʔap ʔin ʕuʔi-naˑk

because-LINK=PST=DUBV=PL win COMP medicine-have

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

(208) # ʔunʔuuƛ̓ḥitqačaʔał ʕuʔinak ʔin hitaʔap.

ʔunʔuuƛ̓ḥitqačaʔał ʕuʔi-naˑk ʔin hitaʔap

because-LINK=PST=DUBV=PL medicine-have COMP win

Intended: 'They won because they had medicine.'[8](**C**, *tupaat* Julia Lucas)

As demonstrated in (207, 208), 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 (209).

(209) 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 (209). 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

[8]The actual meaning of (208), 'they had medicine because they won' would be the opposite of what makes sense in the story. "It's backwards," in my consultant's words.

those constructions. So is the apodosis an argument in the because constructions without the linker in (204–206)?

I believe the answer is no: The apodosis is never an argument of the becausative. (204–206) have the same argument ordering as in (209), but without a linker attached. The protasis is also explicitly subordinated with a subordinate subject-mood portmanteau (the definite and the weak moods, respectively). The apodosis is the main predicate of the sentence and takes the main clause's subject-mood portmanteau. If the becausative is a verb, the structure in (204–206) is very like the SVCs of adpositive-like verbs (§4.2).

Context for (210, 211): Two teams are playing tug of war. Our team is strongest and we won.

(210) 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)

(211) tuunuumitniš ʔunẃiiƛ̓ ḥaaʔakin.
tuunuu=(m)it=niˑš ʔunẃiiƛ̓ ḥaaʔak=(y)in
win=PST=STRG.1PL because strong=WEAK.1PL
'We won because we are strong.' (**N**, Fidelia Haiyupis)

Examples like (210) and (211) 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, possibly under the influence of the English word order. However, this is speculation.

Finally, *ʔuunuuƛ̓*/*ʔunẃiiƛ̓* must take a protasis that is verbal, not nominal (212, which is from the same

context as 204) or adjectival (213). This is somewhat unusual, given the language's flexibility around predication (§3).

Move because of the baby 214 up here

(212) *wikitaḥ ƛuł weʔič ʔuunuuƛ naẏaqakʔisʔi.

wik=(m)it=(m)aˑḥ ƛuł weʔič ʔuunuuƛ naẏaqak=ʔis=ʔiˑ

NEG=PST=REAL.1SG good sleep because baby=DIM=ART

Intended: 'I didn't sleep well because of the baby.' (**B**, Bob Mundy)

(213) *hitaʔapweʔin kaatkimqsuptaał ƫaṅeʔisʔi ʔuunuuƛ našuk.

hitaʔap=weˑʔin kaatkimqsuptaał ƫaṅa=ʔis=ʔiˑ ʔuunuuƛ našuk

win=HRSY.3 race child=DIM=ART because strong

Intended: 'The kid won the race because he is strong.' (**B**, Bob Mundy)

The evidence suggests something like the following for *ʔuunuuƛ* and *ʔunẇiiƛ*. 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 *ʔuunuuƛ* and *ʔunẇiiƛ* behave as verbs with a verbal complement representing the protasis, *ʔuusaaḥi* requires its nominal complement protasis. Examples (214, 215) below are a rephrasing of (204), demonstrating that, opposite from *ʔuunuuƛ*/*ʔunẇiiƛ*, *ʔuusaaḥi* must take a noun phrase protasis and not a verbal clause.

[[TODO this one needs to be checked]]

(214) ʔuusaaḥimta naẏaqakʔi. wikitaḥ ƛuł weʔič.

ʔuusaaḥi=imt=(m)aˑ naẏaqak=ʔiˑ. wik=(m)it=(m)aˑḥ ƛuł 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)

(215) *ʔuusaaḥimta ʕiḥak naɣaqakʔi. wikitaḥ ƛuł weʔič.

ʔuusaaḥi=imt=(m)aˑ ʕiḥak naɣaqak=ʔiˑ. wik=(m)it=(m)aˑḥ ƛuł 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)

[[TODO: Julia has this example pace adam ʔuusaḥiniš tiič c̓aʔak]]

The noun phrase protasis must also occur immediately following *ʔuusaaḥi*, as shown in (216, 217).

(216) ʔuusaaḥi ʕuʔi hitaʔap.

ʔuusaaḥi ʕuʔi hitaʔap

because.of medicine win

'They won because of the medicine.' (**C**, *tupaat* Julia Lucas)

(217) *ʔuusaaḥi hitaʔap ʕuʔi.

ʔuusaaḥi hitaʔap ʕuʔi

because.of win medicine

Intended: 'They won because of the medicine.' (**C**, *tupaat* Julia Lucas)

ʔuusaaḥi may only take a clausal protasis if the protasis is preceded by the complementizer (218, 219).

(218) ʔuusaaḥi hitaʔap ʔin ʕuɣinak.

ʔuusaaḥi hitaʔap ʔin ʕuɣi-naˑk

because.of win COMP medicine-have

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

(219) ʔuusaaḥis wik ƛuł waʔič ʔin waawaałyuqʷa ʕiniiƛ.

ʔuusaaḥi=s wik ƛuł waʔič ʔin wałyuq-LR2L.a ʕiniiƛ

because.of=STRG.1SG NEG good sleep COMP bark-RP dog

'I didn't sleep well because of the dog.' (*C*, *tupaat* Julia Lucas)

ʔuusaaḥi is able to take the linker, although like the use of the complementizer, this changes the syntactic category of its complement, from a noun or participant to a clause.

(220) ʔuusuqtumtʔiš ʔuusaaḥiqḥ wiƛ̓aaɬukʷint.

ʔuusuqta=umt=ʔiˑš ʔuusaaḥi-(q)ḥ wik-ƛ̓aaɬuk=int

hurt=PST=STRG.3 because-LINK NEG-look.after=PST

'He got hurt because he wasn't paying attention.' (*N*, Fidelia Haiyupis)

Like *ʔuunuuƛ̓/ʔunẇiiƛ̓*, *ʔuusaaḥi* 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 *ʔuunuuƛ̓/ʔunẇiiƛ̓*, *ʔuusaaḥi* 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 *ʔuusaaḥi*.

5.2.2 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 (221–225). The temporal complement of *ʔuyi* can be a nominal either occurring after (221) or before (222) *ʔuyi* itself, it can be expressed in a clause with a dependent mood such as the possible mood (223) or the definite mood (224), or it can be dropped from the clause entirely (225).

(221) ʔuyaẇiɬsiis saantii ʔucičƛ̓ ciquuɬi.

ʔuya-ẇiɬs=(y)iis saantii ʔu-ci-čiƛ̓ ciquwiɬ=ʔiˑ

at.a.time-going.to=WEAK.1SG Sunday X-go.to-MO church=ART

'I'm going to church on Sunday.' (**Q**, Sophie Billy)

(222) waałakin yuułuʔiɬʔatḥ kuʔał ʔuyi.

wałaak-LS=(m)in yuułuʔiɬʔatḥ kuʔał ʔuyi

go.to-GR=REAL.1PL Ucluelet morning at.a.time

'We're going to Ucluelet in the morning.' (**B**, Bob Mundy)

(223) ʔuyimaḥʔaała ṅaṅaaṅič kuʔiičiʔeƛquu.

ʔuyi=maˑḥ=ʔaała ṅaṅaaṅič kuʔał-iˑčiƛ=!aƛ=quu

at.a.time=REAL.1SG=HABIT read morning-IN=NOW=PSSB.3

'I read in the mornings.' (**B**, Bob Mundy)

(224) 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)

(225) ʔuyiʔum kitḥšiƛ siičił.

ʔuyi=!um kitḥ-šiƛ si-L.(č)ił

at.a.time=CMFU.2SG 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 (226, 227). 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 (227) is grammatical without the doubling (228).

(226) ʔuyimtinʔaała wałaak May ʔuyiʔeƛ.

ʔuyi=imt=(m)in=ʔaała wałaak May ʔuyi=!aƛ

at.a.time=PST=REAL.1PL=HABIT go.to May at.a.time=NOW

'We would go (there) in May.' (**B**, Bob Mundy)

(227) ʔuyisʔaał yaacuk kuʔał ʔuyi.

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

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

(228) ʔuyisʔaał yaacuk kuʔał.

ʔuyi=s=ʔaał	yaacuk	kuʔał
at.a.time=STRG.1SG=HABIT	walk.DR	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 (228) in particular is identical to other serial verb constructions (see TODO serial verb section). However, the doubling in (226, 227) 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' (229), as did Central speaker Julia Lucas when I presented her with the same construction (230). Marjorie Touchie immediately corrected (229) by telling me that the way to say this would be with *ʔuyi ʔaḿii*.

(229) *ʔuyiqḥʔaƛaḥ ʔaḿii mamuuk hił makuwił.

ʔuyi-(q)ḥ=!aƛ=(m)aˑḥ	ʔaḿii	mamuuk	hił	makuwił
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)

(230) *ʔuyiqḥʔaƛs ʔaḿii mamuuk hił makuwił.

ʔuyi-(q)ḥ=!aƛ=s	ʔaḿii	mamuuk	hił	makuwił
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:

[[Do not even cite this]]

(231) ʔuyiqḥẇiɬass ʔaƛ̓pit tinʕaƛ huʔacačiƛ.

ʔuyi-(q)ḥ-ẇiɬas=s	ʔaƛ-p̓it	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)

[[TODO: below is wrong, should be ʔuʔuyaqḥ]]

I am unable to explain why (231) is grammatical and (230) is not. In all of the Nootka Texts, there is only one example of linked *ʔuyiqḥ*, out of approximately 746 instances of *ʔuyi*.

(232) minkšiʔaƛquu č̓inaaqḥčik nunuuk ʔuʔuyiqḥ ʔuʔuuštaqyuqʷałšy̓akukʔi.

mink-šiƛ=!aƛ=quu	č̓in-(y)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-y̓ak=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 *ʔuusaaḥi* (§5.2.1), *ʔuyi* may be a change-in-progress, from a verb to something preposition-like.

5.2.3 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) *ʔuuḥẃał* 'using', (2) *ʔuuʔink* 'using', (3) *ʔuucḥin* benefactive, (4) *ʔuʔatup* benefactive/recipient, (5) *ʔuukčamałčiqḥ* 'do together with someone', (6) *ʔukʷink* 'go with', (7) *ʔuukʷił* '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 (*ʔuukʷił*, *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) *ʔuuḥẃał*, (3) *ʔuucḥin*, (4) *ʔuʔatup*, (not in Woo's list) *ʔuupaał*, (7) *ʔuukʷił*, and (8) *ʔuḥta*. In short, the words Woo's calls verbs mostly accept the linker, while all of her "little-*v*" words do not.

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

(233) wikcuk̓ʷapʔic ƛ̓iisƛ̓iisa ʔuuḥẃał ƛ̓iisćuuẏak.

wikcuk=!ap=ʔic ƛ̓is-LR2L.a ʔuuḥẃał ƛ̓iisćuuẏak

easy=CAUS=STRG.2SG write-RP using computer

'It's easy for you to write using a computer.' (**N**, Fidelia Haiyupis)

(234) wikcuk̓ʷapʔic ƛ̓iisƛ̓iisa ʔuuḥẇałḥ ƛ̓iisċuuẏak.

wikcuk=!ap=ʔic ƛ̓is-LR2L.a ʔuuḥẇał-(q)ḥ ƛ̓iisċuuẏak

easy=CAUS=STRG.2SG write-RP using-LINK computer

'It's easy for you to write using a computer.' (**N**, Fidelia Haiyupis)

5.2.3.0.2 ***ʔucḥin*** The adpositive verb *ʔucḥin* '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" (236) but thought it was unnecessary.

(235) ʔucḥins mamuuk ʔuušḥẏumsukqs.

ʔucḥin=s mamuuk ʔuuš-(q)ḥẏuˑ-mis=uk=qs

BENEF=STRG.1SG work some-related.or.friend-NMLZ=POSS=DEFN.1SG

'I'm working for my friend.' (**N**, Fidelia Haiyupis)

(236) ʔucḥinqḥʔaƛ̓s mamuuk ʔuušḥẏumsukqs.

ʔucḥin-(q)ḥ=!aƛ̓=s mamuuk ʔuuš-(q)ḥẏuˑ-mis=uk=qs

BENEF-LINK=NOW=STRG.1SG work some-related.or.friend-NMLZ=POSS=DEFN.1SG

'I'm working for my friend.' (**N**, Fidelia Haiyupis)

5.2.3.0.3 ***ʔuuʔatup*** There is speaker disagreement on whether the adpositive verb *ʔuuʔatup* 'on the behalf of, for the benefit of' freely accepts the linker. My consultant *tupaat* Julia Lucas, a Central speaker, accepted it (237, 238) but my Barkley Sound consultants Bob Mundy and Marjorie Touchie did not (239, 240). This may be another case of a change in progress, where for my Barkley consultants, *ʔuʔatup* is coming to more closely resemble *ʔuukʷiɬ* grammatically (§5.2.3.0.5), something approaching a true adposition.

(237) ʔakʼuɬis suẇa ḥiẏaḥi čʼapac ʔuuʔatup ḥaakʷaaƛukʔitk.

ʔakʼuɬi=s suẇa ḥiẏaḥi čʼapac ʔuuʔatup ḥaakʷaaƛ=uk=ʔitk.

loan=STRG.1SG 2SG D1 canoe BENEF girl=POSS=DEFN.2SG

'I'm loaning you that canoe for your daughter.' (**C**, *tupaat* Julia Lucas)

(238) ʔakʼuɬis suẇa ḥiẏaḥi čʼapac ʔuuʔatupḥ ḥaakʷaaƛukʔitk.

ʔakʼuɬi=s suẇa ḥiẏaḥi čʼapac ʔuuʔatup-(q)ḥ ḥaakʷaaƛ=uk=ʔitk.

loan=STRG.1SG 2SG D1 canoe BENEF-LINK girl=POSS=DEFN.2SG

'I'm loaning you that canoe for your daughter.' (**C**, *tupaat* Julia Lucas)

(239) huyaaɬaḥ ʔuuʔatup ɬaatṅeʔis.

huyaaɬ=(m)aˑḥ ʔuuʔatup ɬaatṅa=ʔis.

dance=REAL.1SG BENEF child.PL=DIM

'I dance for the children.' (**B**, Bob Mundy, Marjorie Touchie)

(240) *huyaaɬaḥ ʔuuʔatupḥ ɬaatṅeʔis.

huyaaɬ=(m)aˑḥ ʔuuʔatup-(q)ḥ ɬaatṅa=ʔis

dance=REAL.1SG BENEF-LINK child.PL=DIM

Intended: 'I am dancing for the children.' (**B**, Bob Mundy, Marjorie Touchie)

5.2.3.0.4 ***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.

(241) ciiqmałapiẇɬasniš ʔuupaaɬ ẏukʷiiqsakqs.

ciq-mał-L.api-ẇɬas=niˑš ʔuupaaɬ ẏukʷiiqsu=ʔak=qs.

speak-move.DR-above-going.to=STRG.1PL with younger.sibling=POSS=DEFN.1SG

'I am going to speak along with my younger sister.' (**C**, *tupaat* Julia Lucas)

(242) ciiqmałapiẇiťasniš ʔuupaałqḥ ẏukʷiiqsakqs.

ciq-mał-L.api-ẇiťas=ni·š ʔuupaał-(q)ḥ ẏukʷiiqsu=ʔak=qs.

speak-move.DR-above-going.to=STRG.1PL with-LINK younger.sibling=POSS=DEFN.1SG

'I am going to speak along with my younger sister.' (**C**, *tupaat* Julia Lucas)

(243) ʔuupaałẇiťasaḥ yaaqsčaʕinqas ḵanisẇiťas.

ʔuupaał-ẇiťas=(m)a·ḥ yaaq-L.sčaʕin=qas ḵanis-ẇiťas.

with-going.to=REAL.1SG who-be.friend=DEFN.1SG camp-going.to

'I'm going camping with my friends.' (**B**, Marjorie Touchie)

(244) waałakaḥ naṁint ʔuupaałḥ yaaqsčaʕinqas ḵanisẇiťas.

wałaak-LS=(m)a·ḥ naṁint ʔuupaał-(q)ḥ yaaq-L.sčaʕin=qas ḵanis-ẇiťas.

go.to.MO-GRAD=REAL.1PL Namint with-LINK who-be.friend=DEFN.1SG camp-going.to

'I am going to go with my friends to camp at Namint.' (**B**, Bob Mundy)

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

(245) hałiiłintʔiš ʔiiḥatisʔatḥ ʔuukʷił ċišaaʔatḥ čiicťałẇiťas.

hałiił=int=ʔi·š ʔiiḥatisʔatḥ ʔu-L.(č)ił ċišaaʔatḥ čiicťał-ẇiťas

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)

(246) *hałiiłintʔiš ʔiiḥatisʔatḥ ʔuukʷiłḥ ċišaaʔatḥ čiicťałẇiťas.

hałiił=int=ʔi·š ʔiiḥatisʔatḥ ʔu-L.(č)ił-(q)ḥ ċišaaʔatḥ čiicťał-ẇiťas

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)

5.2.3.0.6 ***ʔuḥta*** Like the more common object marker *ʔuukʷił*, the marker *ʔuḥtaa* also does not accept the linker.

[[TODO: this is infrequent and seems to be being lost]]

Context for (247, 248), discussing family relations.

(247) ʔuḥtaa Jane ʔuʔukʷił Alexandra ẏukʷiiqsu.

ʔuḥtaa Jane ʔuʔukʷił Alexandra ẏukʷiiqsu

DO.TO Jane call Alexandra younger.sibling

'Only Jane can call Alexandra younger.' (**C**, *tupaat* Julia Lucas)

(248) *ʔuḥtaaqḥ Jane ʔuʔukʷił Alexandra ẏukʷiiqsu.

ʔuḥtaa-(q)ḥ Jane ʔuʔukʷił Alexandra ẏukʷiiqsu

DO.TO-LINK Jane call Alexandra younger.sibling

Intended: 'Only Jane can call Alexandra younger.' (**C**, *tupaat* Julia Lucas)

5.2.4 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 *ʔuukʷił* and *ʔuḥta* behave differently, as befitting non-predicative words belonging to a different category.

5.3 HPSG Analysis and Implementation

Chapter 6

CONCLUSION

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Appendix A

ORTHOGRAPHY

Nuuchahnulth orthography is phonemically transparent. The writing system is fairly recent and is within the Americanist phonetic alphabet (APA) tradition, and bears a resemblance to that loose set of standards.

Nuuchahnulth has five vowel qualities, /a, e, i, o, u/ with a short/long distinction. Mid-vowels typically only occur long, although the Barkley and Central dialects have umlaut rules that derives short /e/ from /a/.[1] The consonant inventory is quite large and shown in Table A.1.

Table A.1: Nuuchahnulth consonants

plain plosives	p	t	tɬ	c	č	k	kʷ	q	qʷ		
glottalized plosives	ṗ	ṫ	tɬ̓	ċ	č̓	k̓	k̓ʷ			ʕ̓	ʔ
fricatives			ɬ	s	š	x	xʷ	x̣	x̣ʷ	ḥ	h
resonants	m	n			y	w					
glottalized resonants	ṁ	ṅ			ẏ	ẇ					

I list below the cases where the Nuuchahnulth symbols have a value other than their expected IPA interpretation:

- ɬ is the voiceless lateral fricative, ɬ
- tɬ is the voiceless lateral affricate, t͡ɬ

[1]The Barkley Sound rule is regressive, /aʔi/ → /eʔi/, and it applies consistently across the whole language. The Central rule is progressive, /iʔa/ → /iʔe/, and applies more irregularly, although it appears to occur most in frequent morpheme combinations.

- ƛ̓ is the corresponding ejective, t͡ɬ’
- c is the voiceless alveolar sibilant affricate, t͡s
- ċ is the corresponding ejective, t͡s’
- š is the voiceless postalveolar sibilant ʃ
- č is the voiceless postalveolar sibilant affricate t͡ʃ
- č̓ is the corresponding ejective, t͡ʃ’
- x̣ is the voiceless uvular fricative, χ
- x̣ʷ is the corresponding labialized fricative, χʷ
- ḥ is the voiceless pharyngeal fricative, ħ
- y is the voiced palatal glide, j
- ṁ, ṅ, ẏ, ẇ, are preglottalized: ʔm, ʔn, ʔy, ʔw
- ʕ is the so-called pharyngeal stop, which has been claimed to be a pre-glottalized pharyngeal [ʔʕ] (Shank & Wilson 2000), or in the most complete study, an epiglottal stop with a pharyngeal off-glide [ʡˤ] (Carlson et al. 2001; Esling et al. 2005). To my ears it has multiple realizations, and it is difficult for me to distinguish from ʔ before /a/. It patterns in the phonology with the ejective series,[2] thus its placement in the chart.

[2]In places where the grammar would generate q̓ or q̓ʷ, ʕ is always found instead. ʕ also occurs where cognate Makah words have either q̓ or q̓ʷ.

Appendix B

GLOSSING CONVENTIONS

Many of the glossing conventions I use are non-standard and adapted particularly to the challenges of Nuuchahnulth. I will first address some of the special notations in the segmentation line, and then give the grams I use. There may be some grams not present here, but I have attempted to give all non-Leipzig standard glosses Comrie et al. (2008) here. The glossing conventions here were developed jointly by myself and Adam Werle, and represent only a part of our overall glossing schema. This section is only meant to give enough of a background to make the IGT in this dissertation intelligible and interpretable to linguists.

B.1 Segmentation symbols

There are four parts of Nuuchahnulth phonology that require special symbols in the morpheme segmentation: two types of consonant mutations, variable-length vowels, and segments that only appear after a vowel or nasal.

Consonant mutation is triggered by certain affixes, following patterns called "hardening" and "softening" (Werle 2010). A "hardening" suffix causes the preceding segment to become glottalized, resulting in an ejective in the case of stops and affricates, and otherwise inserts a glottal stop. The hardening pattern for fricatives differs between hardening suffixes and hardening clitics. Suffix hardening typically converts the fricative into a glottalized glide, whereas clitic hardening inserts a glottal stop. There is a special morphophonemic rule that the *ƛ* of the momentaneous aspect (3.1.5) under hardening always becomes *ʔ* instead of *ƛ̓*.

A "softening" suffix causes the preceding segment to become deglottalized, which converts ejectives to plain stops, weakens fricatives to glides, and otherwise inserts a glottal stop. Nuuchahnulth only has suffix (and not clitic) softening.

Following Werle (2010), I use ! to represent hardening, and ° to represent softening, across both clitics and suffixes. The ! notation was first introduced by Boas (1947), and ° by Jacobsen (1996). Like Werle, I abandon Sapir's use of ' and ‘ for mutations, and use the same symbols for both suffix and clitic mutations. Examples of all three types of suffix and clitic hardening and softening are shown in (249–251).

(249) wiinapasʔaṗi.

wiinapi-!as=!ap=!iˑ

stop-outside.DR=CAUS=CMMD.2SG

'Stop (the car or driver of the car).' (**C**, *tupaat* Julia Lucas)

(250) ċiẏiiƛ̓

ċis-!iˑƛ̓

line-outside.MO

'line up outside' (**N**, Fidelia Haiyupis)

(251) hišumyiłʔaqƛ̓niš hawiiʔaƛ̓qu ʔapẇin ṅaas.

hišumł-°ił=ʔaqƛ̓=niˑš	hawiiƛ̓=!aƛ̓=quˑ	ʔapẇin	ṅaas
gather.together-indoors.DR=FUT=STRG.1PL	finish.MO=NOW=PSSB.3	half	day

'Let's get together at midday.' (**N**, Fidelia Haiyupis)

Nuuchahnulth also has vowels that may be long or short depending on where they fall in the word. These vowels are long in the first two syllables of a word, and short in the third syllable or later. Following the established system in Wakashan studies, I represent these syllables in the morpheme line as the vowel followed by a ˑ.[1] Both long and short realizations of variable-length vowels are shown for the ending *=maˑ* in (252, 253).

[1]This innovation is thanks to Rose 1981, who amended Sapir & Swadesh 1939's more cumbersome ˘

(252) ʔaƛiičiʔaƛma ɬašii.

ʔaƛa-iˑčiƛ=!aƛ=maˑ ɬašii

two-IN=NOW=REAL.3 road

'There are two roads (now).' (**B**, Bob Mundy)

(253) ƛułmaa ċušukʔi.

ƛuł=maˑ ċušuk=ʔiˑ

good=REAL.3 new=ART

'The new one is nice.' (**B**, Bob Mundy)

Many affixes in Nuuchahnulth have a leading consonant that regularly disappears under certain phonological conditions, typically when preceded by a non-nasal consonant. Again, following the established literature in South Wakashan and first introduced by Sapir, I write these disappearing consonants in parentheses. Both realizations for the suffix *-L.(č)iɬ* are shown in (254, 255).

(254) ʔaaqičiłk ṅaacsa.

ʔaqi-L.(č)iɬ=k ṅaacsa

what-DO.TO=QUES.2SG see.CV

'What are you watching?' (**C**, *tupaat* Julia Lucas)

(255) ʕuʔikʷiƛs suutił.

ʕuʔikʷiƛ[3]=s sut-L.(č)iɬ

give.medicine.MO=STRG.1SG 2SG-do.to

'I'm giving you medicine.' (**C**, *tupaat* Julia Lucas)

Some of these disappearing consonants change based on their environment. A *č* regularly becomes a *k* after a *u*. This correspondence is not shown. Which consonants of an affix are disappearing also

[3]The momentaneous ending is typically *-kʷiƛ* after *u*, *-čiƛ* after other vowels and nasals, and *-šiƛ* after other consonants. This is a rare instance of *-kʷiƛ* occurring after something other than a *u*, and might be an indication that there was a *u* here in an earlier stage of the language.

changes dialect-to-dialect. I have attempted to segment disappearing consonants as appropriate for each dialect.[4]

B.2 Template notation

Nuuchahnulth has a set of vowel length and reduplication templates, typically triggered by a suffix containing segmental phonology. These templates specify reduplication and vowel length of up to the first two syllables of the word. I gloss these templates with the symbols *L*, *S*, *R*, and *R2*, attached to the suffix which triggers the template. There are two exceptions to the general rule that templatic morphology is associated with segmental phonology. The first is the graduative aspect, which I gloss as though it were an aspect suffix consisting only of the template. The other is certain kinds of plurals, which may consist of only reduplication or lengthening. I gloss these as prefixes consisting of only the templatic information.

In my notation, *L* and *S* indicate *L*ong and *S*hort vowels, and are ordered with respect to their occurrence: LS for a long first vowel and a short second vowel, SS for two short vowels, and so on. *R* indicates an onset-nucleus reduplication pattern, and *R2* a pattern that is onset-nucleus for polysyllabic roots, and full reduplication for monosyllabic roots. R2 is a pattern that only occurs with the iterative and repetitive aspects, and a limited number of plurals. Vowel length is specified prior to reduplication. LR means a long reduplicant (followed by a vowel whose length is unaltered), and RL means a reduplicant followed by a lengthened base. If multiple templates apply, the vowel length specifications of the final morpheme win out, and reduplication remains. Table B.1 gives a list of most types of templates found in the language, including an example of the two patterns for the R2 template.

[4]Notably, my consultant Julia Lucas fairly consistently pronounces the /q/ in the linker suffix -(*q*)*ḥ*. I still transcribe the suffix in the segmentation line with the parentheses, as she sometimes fails to produce the /q/ when attached to quantifiers.

Table B.1: List of Lexical Suffix Templates

template	gloss	surface form
L	ču-L.ʔatu dive-sink.into.water	čuuʔatu dive down into water
LS	hašiɬ-LS.sa have.news-AUG1	haašiɬsa interesting
SS	ʔaya-iˑčiƛ-SS.(q)aq many-IN-AUG2	ʔayičiƛaq became very many
R	ɬuc-R.ɬiiḥ sea.urchin-go.after.food	ɬuɬućiiḥ getting sea urchins
LR	kuḥʷ-LR.inqiɬ hole-at.ribs	kuukuḥinqiɬ hole at the ribs
LRS	qʷi-LRS.itɣak what-fear	qʷiiqʷitɣak whatever one fears
LRL	LRL-mamaɬƛi PL-white.person	maamaamaɬƛi white people
RL	ʔu-RL.čiɣaɬ X-pursue	ʔuʔuukʷiɣaɬ pursue it
R2	R2-nuuk PL-song	nuuknuuk songs
LR2L	ɬapat-LR2L.a think-RP	ɬaaɬaapata consider
LR2L	huuɬ-LR2L.a dance-RP	huuɬhuuɬa dance

B.3 Grams

B.3.1 Aspect

In my glosses, I use the older and more conservative and traditional categorization of aspect, although there is a reanalysis of the system that I accept (§3.1.5). The table below is adapted from a system I helped Adam Werle devise. I use his grams for the conservative names of the aspects. There is a straightforward collapse from the conservative aspect system to the (hypothesized) revised aspect system, which I include in the table. By using the most conservative glossing I avoid losing information. Although not traditionally considered aspect, I include in the table the resultative morpheme, which,

when used, occurs in lieu of aspect.

Table B.2: Aspects in Nuuchahnulth

revised analysis	conservative analysis	gram	forms
perfective	momentaneous	MO	-čiƛ, -šiƛ, -kʷiƛ, -uƛ
	inceptive	IN	-°ačiƛ, -iˑčiƛ
durative	durative	DR	-(ʔ)ak, -(ʔ)uk, -L.ḥiˑ
continuative	continuative	CV	-(y)aˑ
graduative	graduative	GR	-LS
repetitive	repetitive	RP	-LR2L.a
iterative	iterative	IT	-R2.č, -R2.š
resultative	resultative	RS	-yuˑ, -čuˑ

As discussed in (§3.1.5), these aspects can be divided into perfective and imperfective categories. Verbs ending in momentaneous or inceptive aspect are perfective, while the rest are imperfective. The durative and continuative aspect are weakly differentiated, and plausibly there is a supertype, continuous, that subsumes both. In Werle's notation, this is CT. To avoid confusion between "continuous" and "continuative," I have assigned every morpheme either continuative or durative aspect, and avoided the underspecified continuous.

B.3.2 Mood

The category traditionally called "Mood" in Nuuchahnulth is not the same as "mood" as usually used by linguists, which stands in opposition to aspect and tense. Instead, Nuuchahnulth "mood" is a morphological category that fuses mood and evidential information with subject person and number, as well as containing other propositional information (such as interrogative and imperative marking). These moods can be split into matrix clause moods, dependent clause moods, and commands. Commands are special matrix clause moods that contain object agreement, when all other moods only contain subject agreement. Table B.3 gives a list of the moods, their abbreviations, and their third person forms. For commands, I list second person singular forms without an object, or a third person object, as third person agreement is null.

The meanings of these moods are mostly but not entirely consistent across dialects. The strong mood and real mood have the same meaning: a strong claim to reality, with the real mood used in the Barkley Sound dialect and the strong mood used in the Central and Northern dialects. The strong mood is in free variation in the Kyuquot-Checleseht dialect with the weak mood, which has come to be used as a matrix clause mood.

Table B.3: Mood Enclitics

name	gram	third person
Matrix Moods		
real	REAL	=*maˑ*
strong	STRG	=*ʔiˑšˇ*
neutral	NEUT	=∅[5]
question	QUES	=*ḥaˑ*
hearsay	HRSY	=*weˑʔin*, =*waˑʔiš*
inferential	INFR	=*čˇaˑʕašˇ*
dubitative	DUBT	=*qaˑčˇa*
Dependent Moods		
weak	WEAK	=(*y*)*ii*
definite	DEFN	=*ʔiˑtq*
possible	PSSB	=*quu*
dubitative formative	UNK1	=(*w*)*uus*
dubitative relative	UNK2	=(*w*)*uusi*
embedded	EMBD	=*qaˑ*
purposive	PURP	=*!eeʔita*, =*!aaḥi*
article[6]	ARTL	=*ʔiˑ*
hearsay article	ARTH	=*čˇa*
Command Moods		
command	CMMD	=*!iˑ*
‘go’ command	CMGO	=*čˇiˑ*
‘come’ command	CMCM	=*!iˑk*
future command	CMFU	=*!im*

[5]Although the third person neutral is null-marked, the first and second person neutral mood forms are non-null. In the IGT, I do not actually gloss third-person neutral with a ∅, out of an aversion to inserting unpronounced items into an analysis, and due to the fact that my implemented grammar does not make use of null-marked elements in the gloss line.

[6]The article in Nuuchahnulth is also part of the mood complex, occupying the same morphological position and com-

Typically a clause can have only one mood ending, although there are some exceptions: the possible mood in the third person can be followed by the hearsay, yielding a matrix mood meaning something like 'what is typically done, so I hear', and the hearsay mood can be followed by the dubitative.

B.3.3 Other Clause-Bound Morphemes

Other clause-bound morphemes that occur in the second-position enclitic complex (3.1.3) include tense (and some related notions) and valence-changing morphemes.

Table B.4: Tense, Valence-Changing, and Other Clause-Bound Morphemes

meaning	gram	morph
now	NOW	*=!aƛ*
future	FUT	*=ʔaaqƛ*, *=!aaqƛ*
past	PST	*=mit*
habitual	HAB	*=ʔaaɬa*
plural[7]	PL	*=ʔaɬ*
causative	CAUS	*=!ap*
passive[8]	PASS	*=!at*
possessive	POSS	*=ʔak*, *=uk*

The "now" morpheme (NOW) should not be understood as a simple present, as it is often used in conjunction with the past and future tense, and can occur in a sentence that takes place at any time. It indicates that an event is occurring in a sequence, or that the current clause is the next event in a progression.

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plementary with the other moods. More on this can be found in Inman (2018).

[7]This plural is separate from the plural that occurs as part of the mood portmanteaus, and may refer to the plurality of the subject or object of the verb. It is the only way to express the plurality of a dropped third person subject.

[8]The passive morpheme is also used for inalienable possession and generic statements. I do not gloss it differently according to its use.

B.3.4 Predicate-Bound Morphemes

The linker, and what I call the root-maker or stem formative are suffixes bound to the predicate. The linker is described in detail in Chapter 5. The stem formative *-q* (STEM) is used to create a bound root from a free word so that certain affixes can attach. Examples are *saantiquwił* 'church', from the word *saanti* 'Sunday' + *-uwił* 'indoor room'. There is also *ḥimwićaqy̓ak* 'myth', from *ḥimwića* 'myth telling' + *-y̓ak* 'instrument, device for'.

Although it is restricted to verbs (unlike the linker and the stem formative), I include the reflexive *-sɬaɬ* in this category.

Table B.5: Predicate-Bound Morphemes

meaning	gram	morph
linker	LINK	*-(q)ḥ*
root-maker	STEM	*-q*
reflexive	REFL	*-sɬaɬ*

B.3.5 Augmentative and Diminutive

Nuuchahnulth has two augmentatives and at least two diminutives. The *-(q)aq* augmentative more straightforwardly means 'big' while the *-sa* augmentative has a broader augmentative meaning, including 'real', 'true', and 'very'. I give the more common *-sa* the AUG1 label. The diminutives have no appreciable difference in meaning, so I gloss both as DIM.

Table B.6: Augmentative and Diminutive

meaning	gram	morph
augmentative ("real")	AUG1	*-LS.sa*
augmentative ("big")	AUG2	*-SS.(q)aq*
diminutive	DIM	⟨*čk*⟩, *-ʔis*

B.3.6 Semantically Empty Roots

Many suffixes in Nuuchahnulth contain complex semantic content, and often attach to semantically light or meaningless roots. Two semantically contentless roots are used in such cases: *hita-*/*hina-* and *ʔu-*.

The root *ʔu-* is used in place of an object for transitive suffixes to attach to. Many transitive verbs in Nuuchahnulth are suffixes that may attach to the first syntactic word of their direct object (§3.1.4.1). In lieu of attaching to their object, these suffixes may attach to semantically empty *ʔu-* instead. After attaching to *ʔu-*, the direct object of the verb may be expressed as a separate word, or dropped altogether. Because of its nature as a "placeholder" for a syntactic object, I chose X as the gloss for this morpheme.

(256) *ʕumtnaak*

ʕumt-naˑk

name-have

'having a name'

(257) *ʔunaak ʕumt-iˑ*

ʔu-naˑk ʕumt-ii

X-have name-NMLZ

'having a name'

The roots *hita-*/*hina-*[9] are more unpredictable in their distribution. They tend to be a place of attachment for location suffixes (§3.1.4.3), although occasionally other suffixes can attach to them.[10] To distinguish these grams from *ʔu-* X, I gloss this root as EMPTY, as can be seen in (258, 259).

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[9]There appears to be no way to predict whether *hita-* or *hina-* is used for a particular word, although there is a clear phonological resemblance.

[10]An example is *hiniic* 'carry', *hina-iic*. The suffix *-iic* can also attach to *ʔu-*, *ʔuuc* 'carry'.

(258) *hitaqsiƛ*

hita-qsiƛ

EMPTY-in.a.vessel.MO

'enter into a vessel'

(259) *hinułta*

hina-ułta

EMPTY-out.of.canoe

'get out of the canoe'

Table B.7: Semantically Empty Roots

meaning	gram	morph
—	EMPTY	*hita*, *hina*
—	X	*ʔu*

B.3.7 Deictics

Nuuchahnulth dialects each have a set of demonstrative deictics. In the Central, Northern, and Qyuquot-Checleseht dialects there are six: four locative deictics and two topical deictics. The Barkley dialect only has the one topical deictic, and so has five altogether. For the locative deictics I use a numbering scheme 1-4, with 1 being the closest and 4 the furthest away. For the shared topical deictic I use DTOP, and DDYN for the topical 'this.' This distinction among deictics originates from Adam Werle. I use the Central deictics to demonstrate my glossing schema below.

Table B.8: Deictics, Central Dialect

meaning	gram	morph
this	D1	*ʔaḥkuu*
that by you	D2	*ʔaḥńii*
that	D3	*ḥaaẏaḥi*
that (far)	D4	*ḥuuẏaḥi*
this (dynamic)	DDYN	*ḥiẏaḥi*
that (topical)	DTOP	*ʔaḥʔaa*