Multi-predicate Constructions in Nuuchahnulth

David Inman

A dissertation
submitted in partial fulfillment of the
requirements for the degree of

Doctor of Philosophy

University of Washington

2019

Reading Committee:

Emily M. Bender, Chair

Program Authorized to Offer Degree:
Linguistics

University of Washington

Abstract

Multi-predicate Constructions in Nuuchahnulth

David Inman

Chair of the Supervisory Committee:
Chair Emily M. Bender
Department of Linguistics

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.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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) hitaaqɬ̓ɬiʔaɬ qʷayaċiik.

hitaaqɬ̓ɬiɬ=!aɬ 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) mamuukẇiɬsin hił maatmaas.

mamuuk-ẇiɬs=(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) [The dog]$_{\text{participant}}$ [barks]$_{\text{predicate}}$.

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

wik=!iˑč=ʔaał ƛ̓iixćus 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) quṁaačłnik hił ċuumaʕaas.

quṁaa-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 ṅaacsamitsƛ̓a hiłqḥ ṅačiqs.

ʔuuš ṅaacsa=(m)it=s=ƛ̓aˑ hił-(q)ḥ ṅačiqs

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) ʔuukʷiɬẇiɬasaḥ haaʕin čims.

ʔu-L.(č)iɬ-ẇiɬas=(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 ƛ̓iḥmaṁit ʔunaaƙaƛ yaaqʷapakʔitq ƙʷičiƛ.

ẏuuqʷaa=!aƛ=weˑʔin ƛ̓iḥmaṁit 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)

---

[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) ʔiqsiɬapƛ̓aa 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)

---

[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 ƛ̓iḥnaaƙ̓aƛ̓ hinatimyisnaƙ̓aƛ̓ 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 Sayaaƙ̓apis 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 *ṅiiƙ̓ʷiƛ̓* '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 *ʔinḵʷas* ‘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/čak* '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 *pikčasćuẏak* '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.

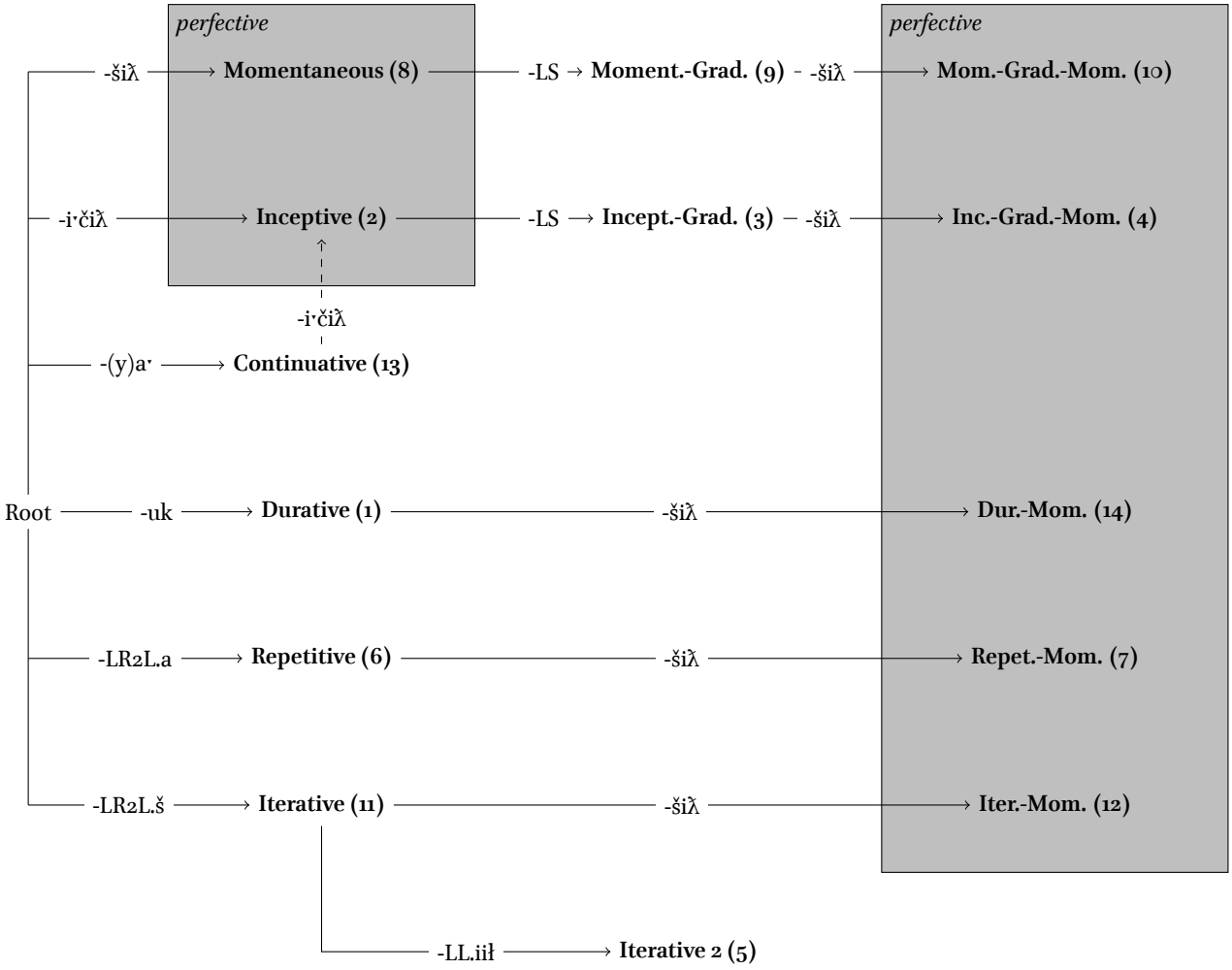
1. Durative *mitxʷaa*
2. Inceptive *mitxʷiičiƛ*
3. Graduated Inceptive *miitxʷičiƛ*
4. Pre-inceptive *miitxʷičiƛšiƛ*
5. Inceptive iterative[14] *miitxmiitxʷičiiɬ*
6. Repetitive *miitxmiitxʷa*
7. Repetitive inceptive *miitxmiitxšiƛ*
8. Momentaneous *mitxšiƛ*
9. Graduative *miitxšiƛ*
10. Pre-graduative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

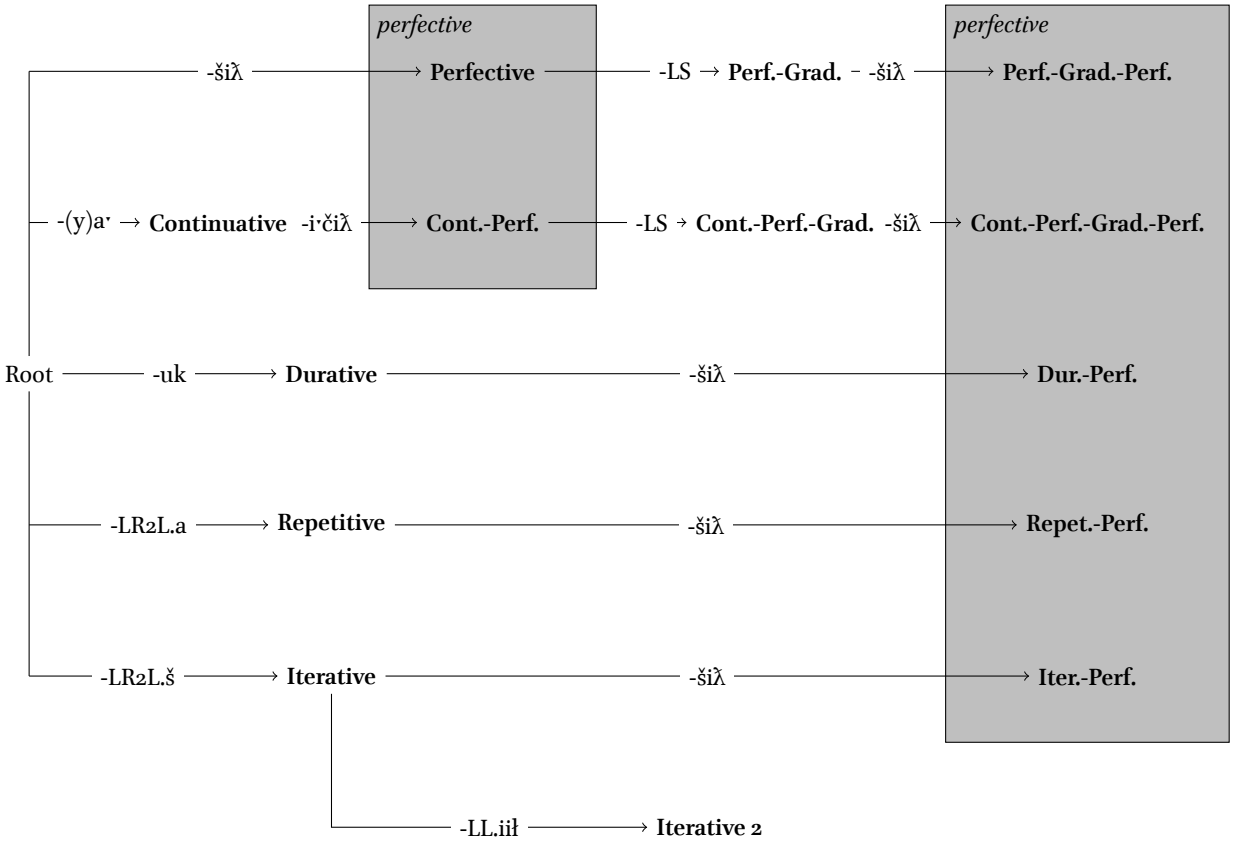
Adam Werle has convinced me (*p.c.*) that this view is inaccurate, and that the "inceptive" is in fact the same as the momentaneous. The *-iˑčiƛ* form is simply the form that the momentaneous takes under certain morphophonological conditions, namely: (1) after the continuative; (2) on monosyllabic roots 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)
$$\left[\begin{array}{l} \textit{NOUN-RELATIVIZER-LEX-RULE} \\ \text{SYNSEM.LOCAL} \left[\begin{array}{ll} \text{CAT.HEAD} & \left[\begin{array}{l} \textit{noun} \\ \text{PRD} \quad - \end{array}\right] \\ \text{VAL} & \left[\begin{array}{ll} \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle\rangle \end{array}\right] \\ \text{CONT.HOOK.INDEX} & \boxed{1} \end{array}\right] \\ \text{DTR} \left[\begin{array}{ll} \text{SYNSEM.LOCAL} & \left[\begin{array}{ll} \text{CAT.HEAD} & \left[\begin{array}{l} \textit{noun} \\ \text{PRD} \quad + \end{array}\right] \\ \text{CONT.HOOK.XARG} & \boxed{1} \end{array}\right] \end{array}\right] \end{array}\right]$$

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

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

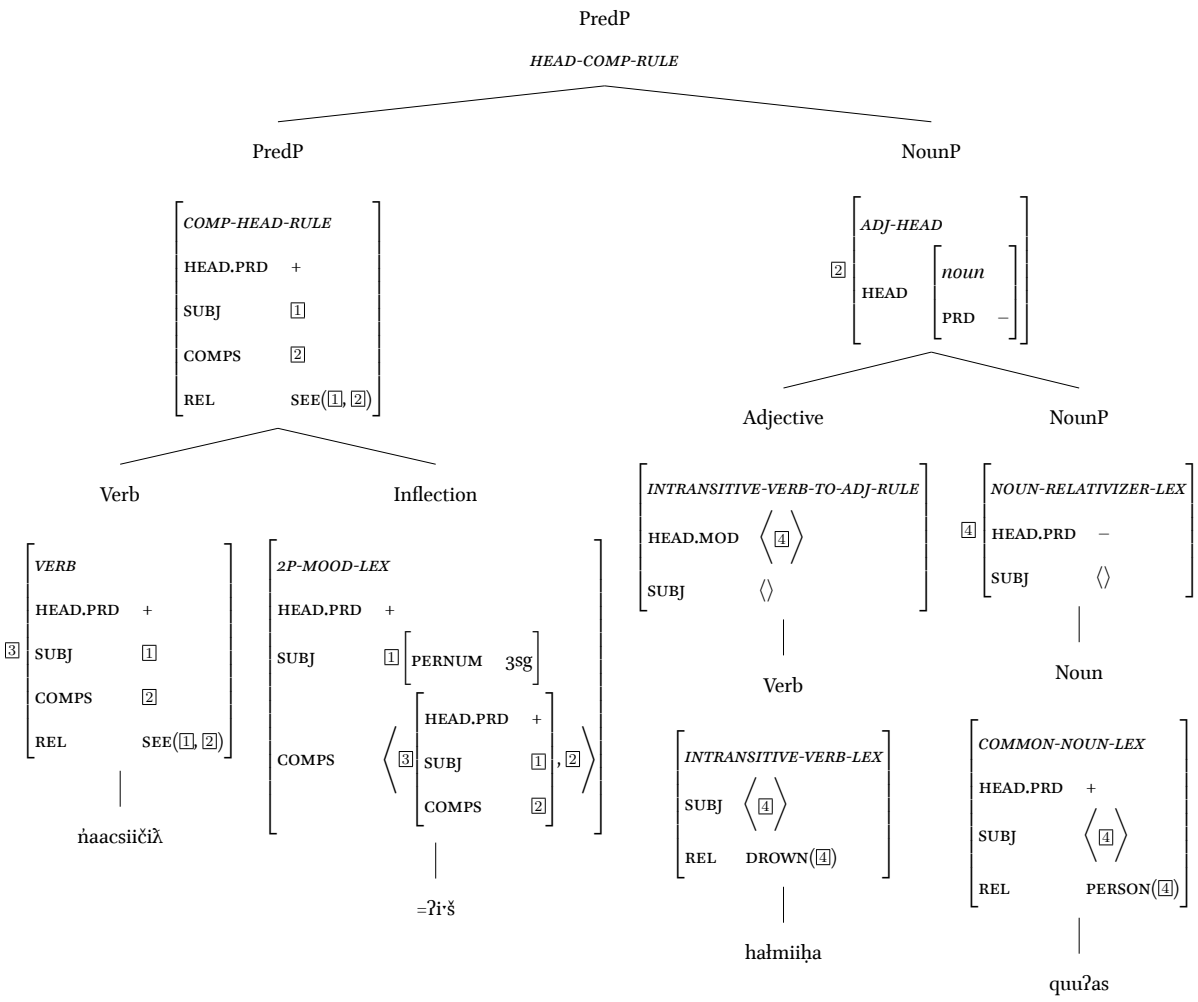
The article lexeme also inherits from *2P-LEX-ITEM*, but adds different constraints (56). The article needs to state that it creates a participant (that is, a non-predicate), that it is picking up its complement's subject's semantics (that is, the referent and not the event), and that that referent is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

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

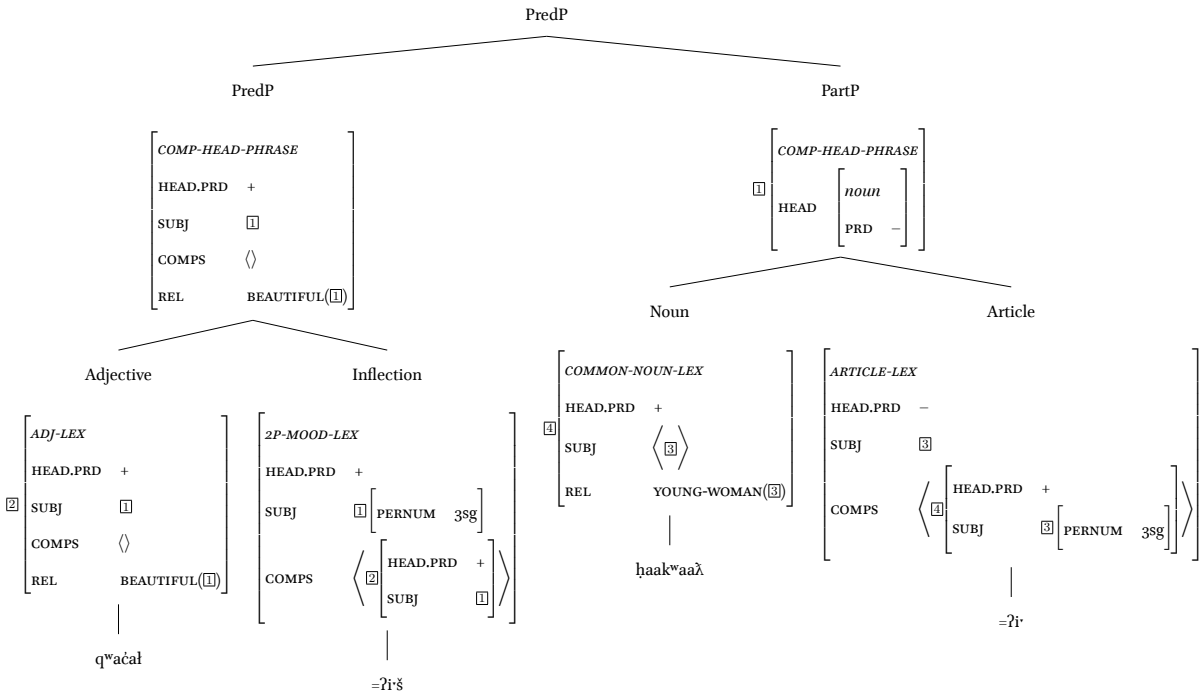
The above definitions for second position elements license trees that have simple second position elements. I will give sample trees for the three types of predicates introduced in §3.1.1: verbs (8), adjectives (9), and nouns (10). Trees for each of the sentences are given in (57), (58), and (59) respectively. 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.

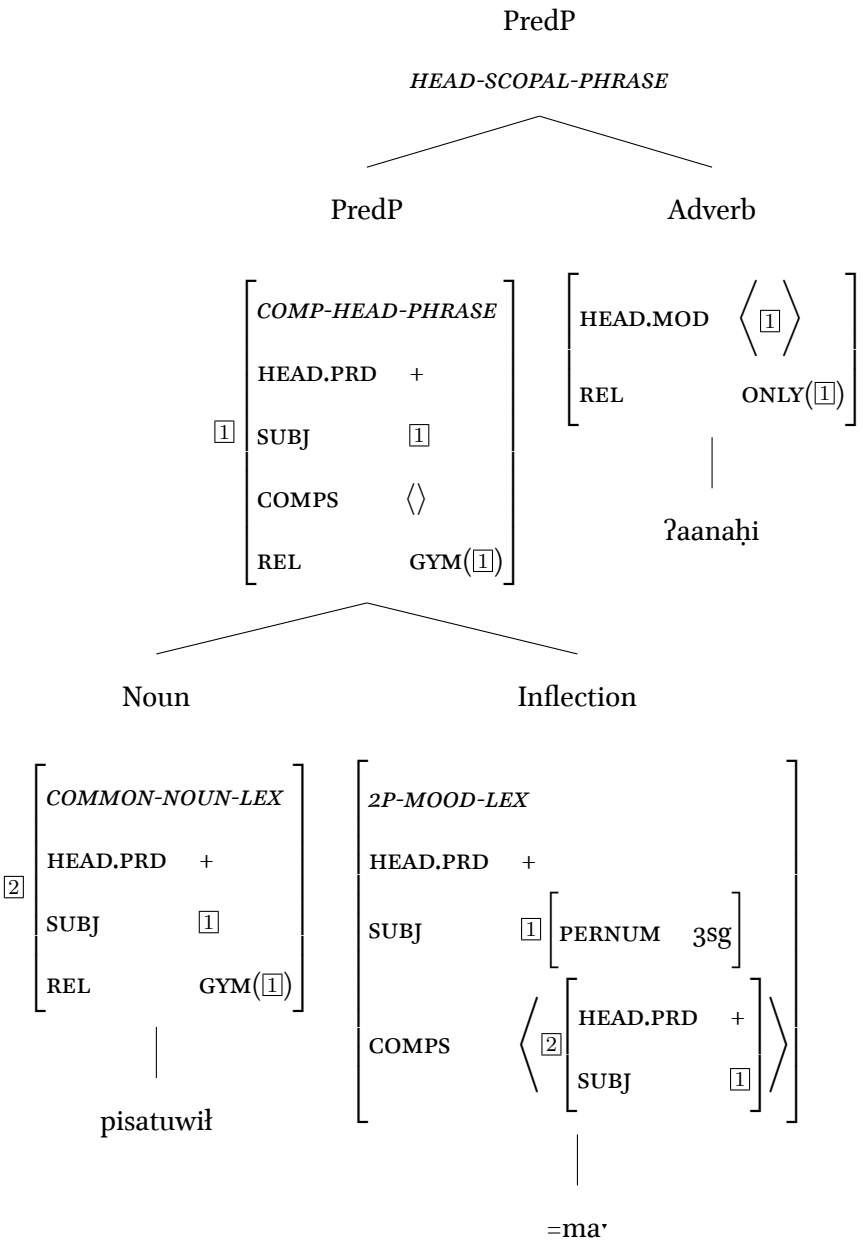
(57)



(58)

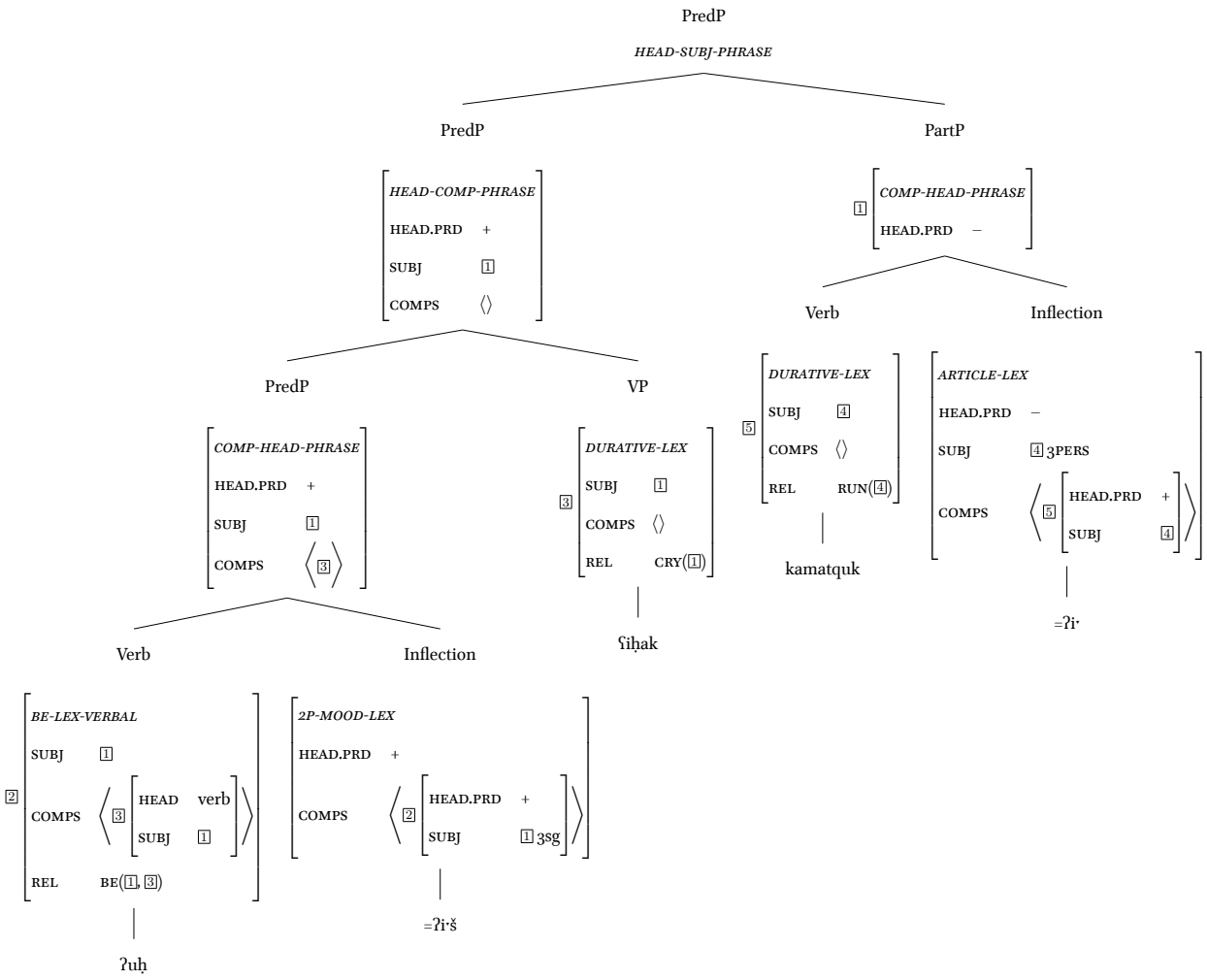

PredP
PredP
PartP
COMP-HEAD-PHRASE
HEAD.PRD +
SUBJ 1
COMPS ⟨⟩
REL BEAUTIFUL(1)
COMP-HEAD-PHRASE
HEAD noun
PRD −
Noun
Article
Adjective
Inflection
ADJ-LEX
HEAD.PRD +
SUBJ 1
COMPS ⟨⟩
REL BEAUTIFUL(1)
2P-MOOD-LEX
HEAD.PRD +
SUBJ 1 PERNUM 3sg
COMPS ⟨ 2 HEAD.PRD + SUBJ 1 ⟩
COMMON-NOUN-LEX
HEAD.PRD +
SUBJ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

(59)

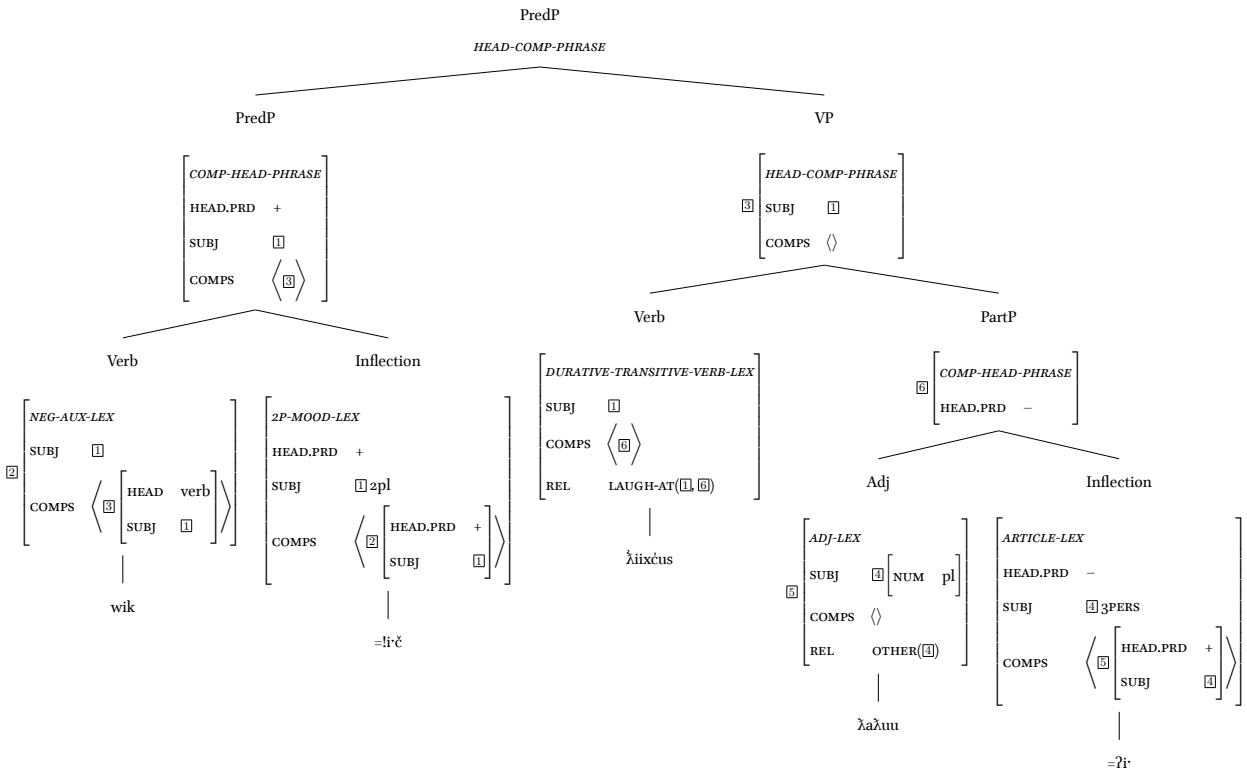


(57–59) show predicates of different lexical categories. This is straightforward because all these lexical categories are [PRD +], and thus can be the complement of the inflecting second position element. In the same way, predicative elements like verbs (60) and adjectives (61) can become participants 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)
$$\left[\begin{array}{ll}
\textit{NEUTRAL-3RD-PRED-LEX-RULE} & \\
\textsc{sysnsem.local} & \left[\begin{array}{ll}
\textsc{cat} & \left[\begin{array}{ll}
\textsc{head} & \left[\begin{array}{ll} \textit{verb} & \\ \textsc{aux} & + \\ \textsc{prd} & + \\ \textsc{form} & \text{finite} \end{array}\right] \\
\textsc{val} & \left[\begin{array}{ll} \textsc{subj} & \left\langle \boxed{1} \left[\textsc{local}\ldots\textsc{png.per} \quad \text{3rd}\right] \right\rangle \\ \textsc{comps} & \boxed{2} \end{array}\right]
\end{array}\right] \\
\textsc{cont}\ldots\textsc{mood} & \text{neutral}
\end{array}\right] \\
\textsc{daughter} & \left[\begin{array}{ll}
\textsc{inflected} & \text{infl-satisfied} \\
\textsc{local.cat} & \left[\begin{array}{ll}
\textsc{head.prd} & + \\
\textsc{val} & \left[\begin{array}{ll} \textsc{subj} & \left\langle \boxed{1} \right\rangle \\ \textsc{comps} & \boxed{2} \end{array}\right]
\end{array}\right]
\end{array}\right]
\end{array}\right]$$

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

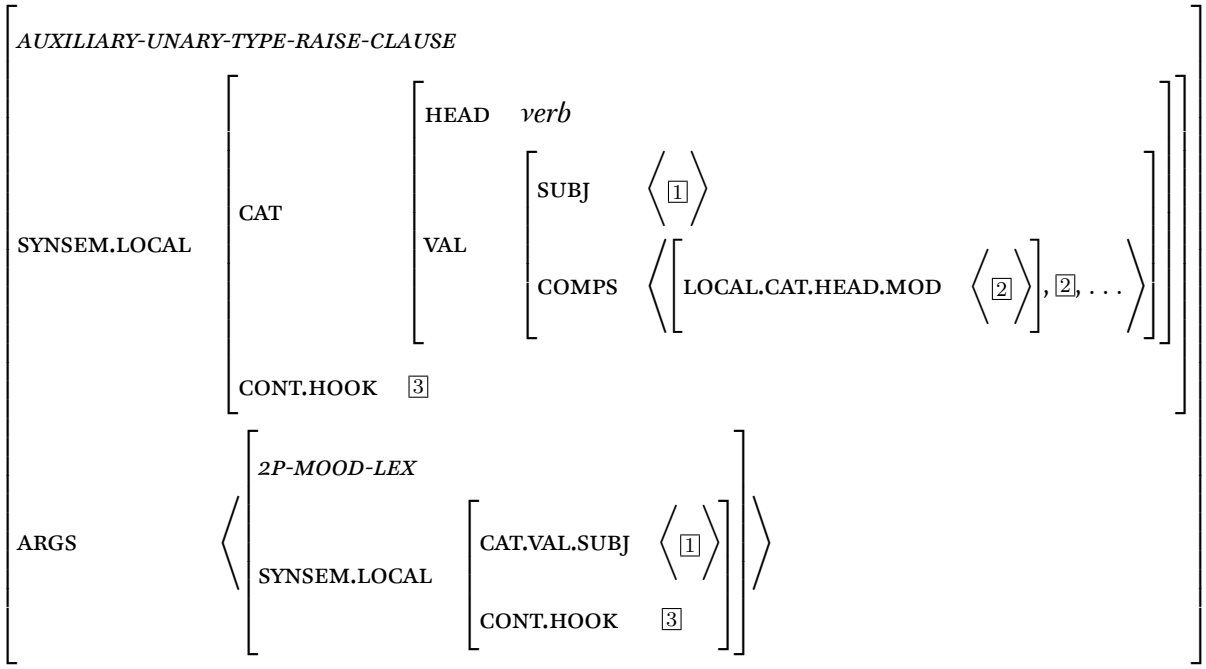
taking on their subject and complements. However, in the case where the clitics attach to a modifier, I cannot model the clitics as selecting for a predicate. I must have the clitic select for a modifier, and assign its semantic information to the modifier's modified value.

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

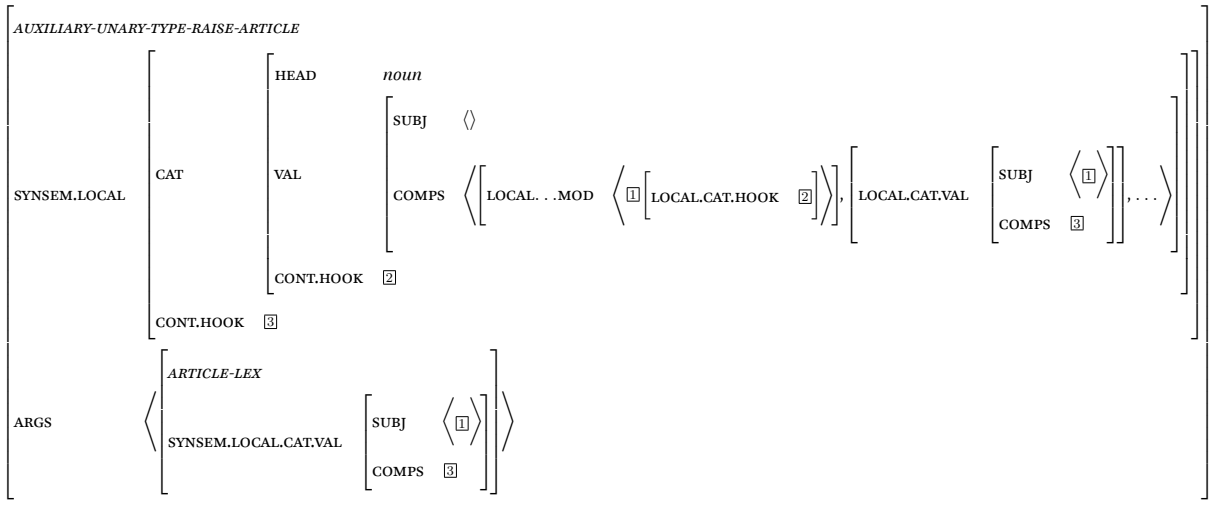
This supertype states that type auxiliary type raising is a unary operation that takes some auxiliary which has not been type raised, marks it as type raised, and adds one item to its complements list. The item that was previously the first complement and was [POSTHEAD −] (that is, had to be realized 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)
$$\left[\begin{array}{ll} \textit{INCORPORATING-LEX-RULE} & \\ \text{SYNSEM.LOCAL.CAT} & \left[\begin{array}{ll} \text{VAL.SUBJ} & \left\langle \left[\text{LOCAL.CAT.HEAD.PRD} \quad - \right] \right\rangle \\ \text{HEAD} & \left[\begin{array}{ll} \textit{verb} & \\ \text{PRD} & + \\ \text{AUX} & - \\ \text{FORM} & \text{non-root-nonfinite} \\ \text{MOD} & \langle\rangle \end{array}\right] \end{array}\right] \\ \text{DAUGHTER} & \left[\text{SYNSEM.LOCAL.CAT.HEAD.AUX} - \right] \end{array}\right]$$

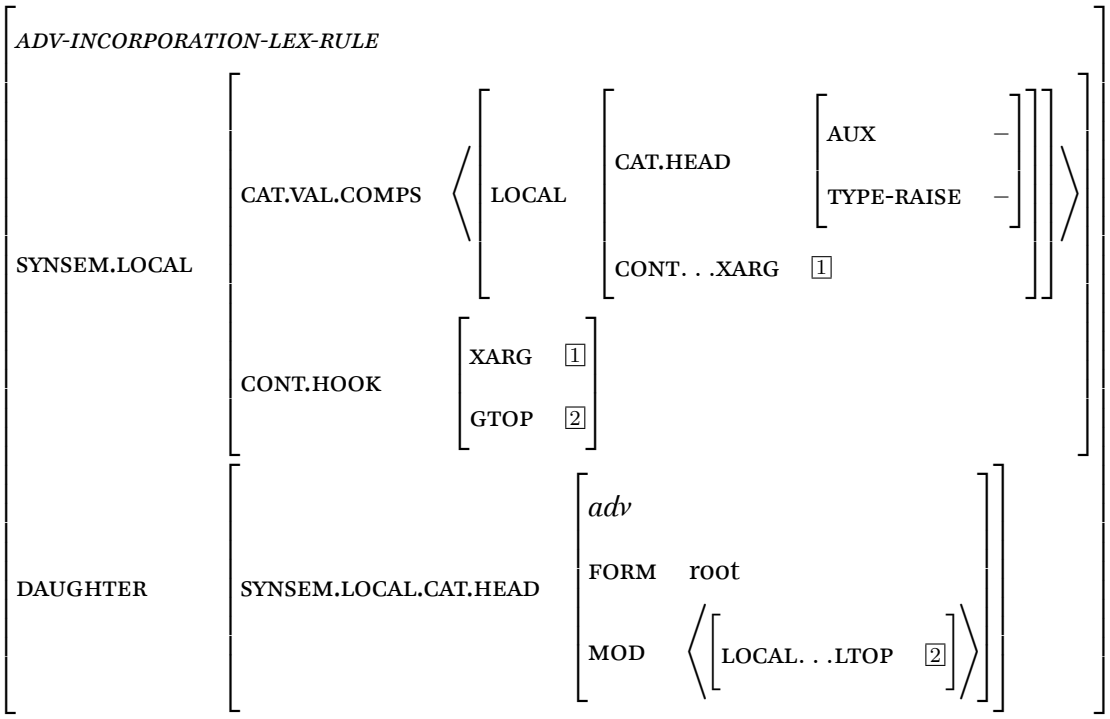
The subtypes of *INCORPORATING-LEX-RULE* that prepare nouns, adjectives, and adverbs for incorporation are given in (67, 68, 69) below.

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

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

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).

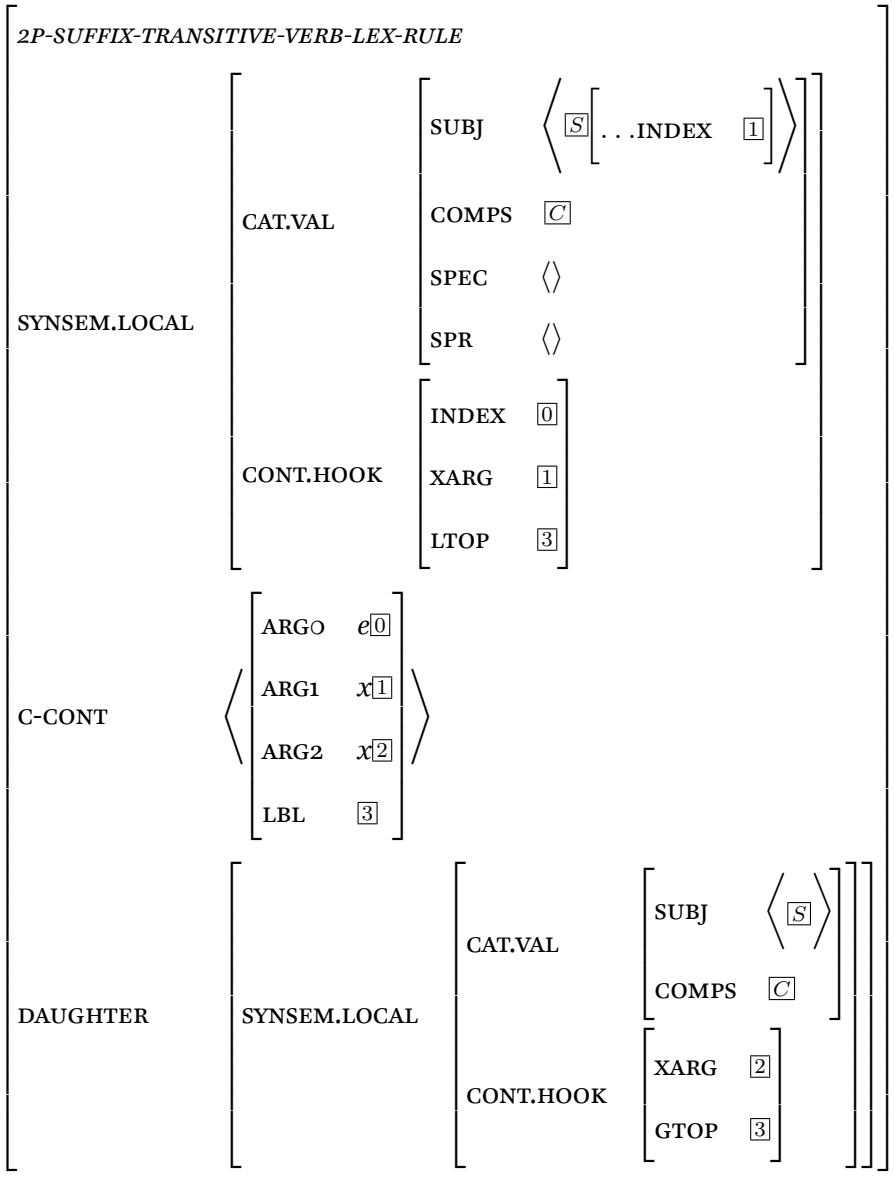
[18]This is important so that certain rules not mentioned, for instance intransitive-verb-to-adjective, cannot be the complement of an incorporated adverb.

(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

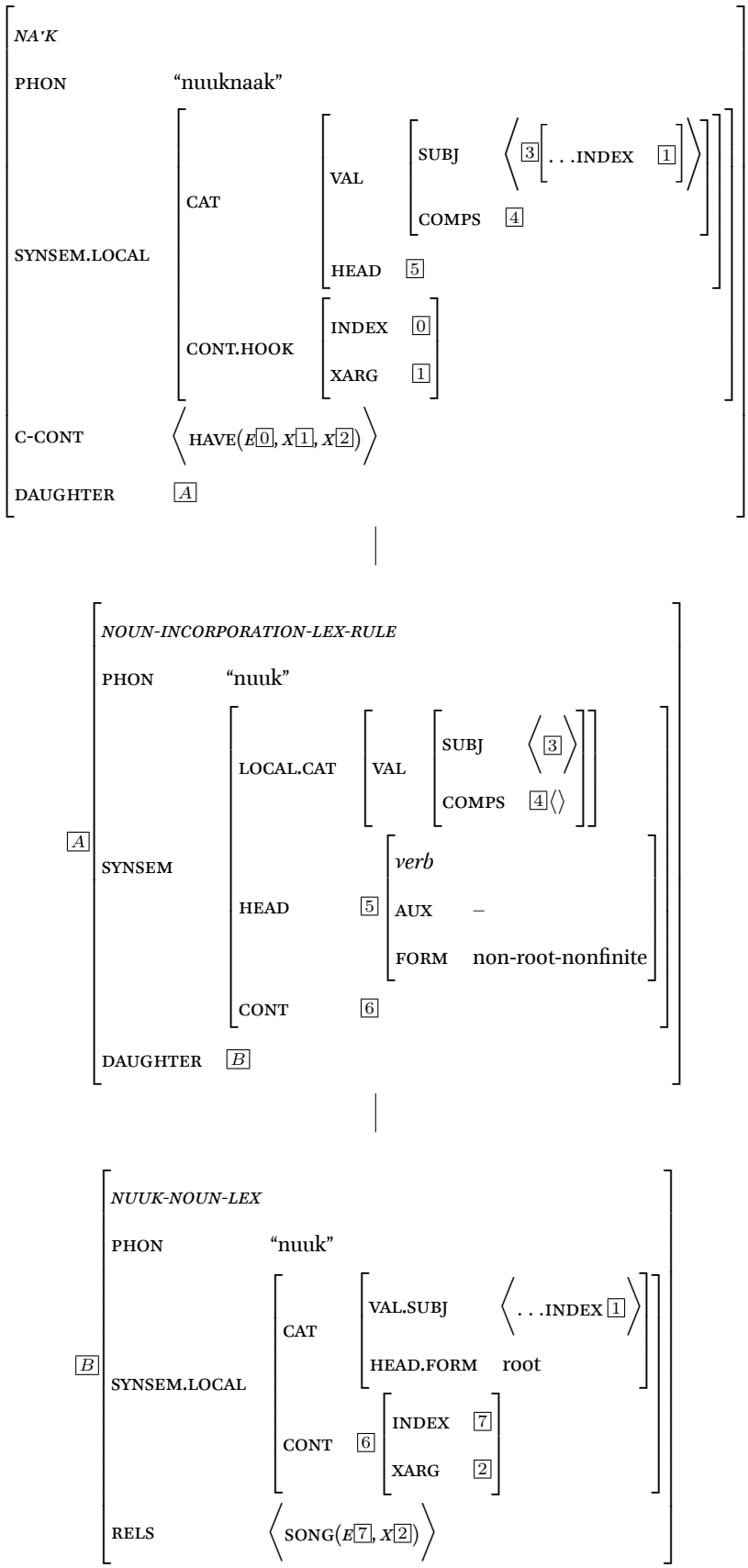
to an incorporated noun will only have a subject, while incorporated adjectives and adverbs will have an object. Finally, the new relation's LBL is identified with the daughter's GTOP. This was only defined for incorporating adverbs, and this will have the effect of allowing the adverb to scope over 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)
$$\begin{bmatrix} \textit{NA·K} & \\ \textsc{phon} & \text{“-na·k”} \\ \textsc{c-cont} & \left\langle \begin{bmatrix} \textsc{pred} & \textsc{have} \end{bmatrix} \right\rangle \end{bmatrix}$$

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.

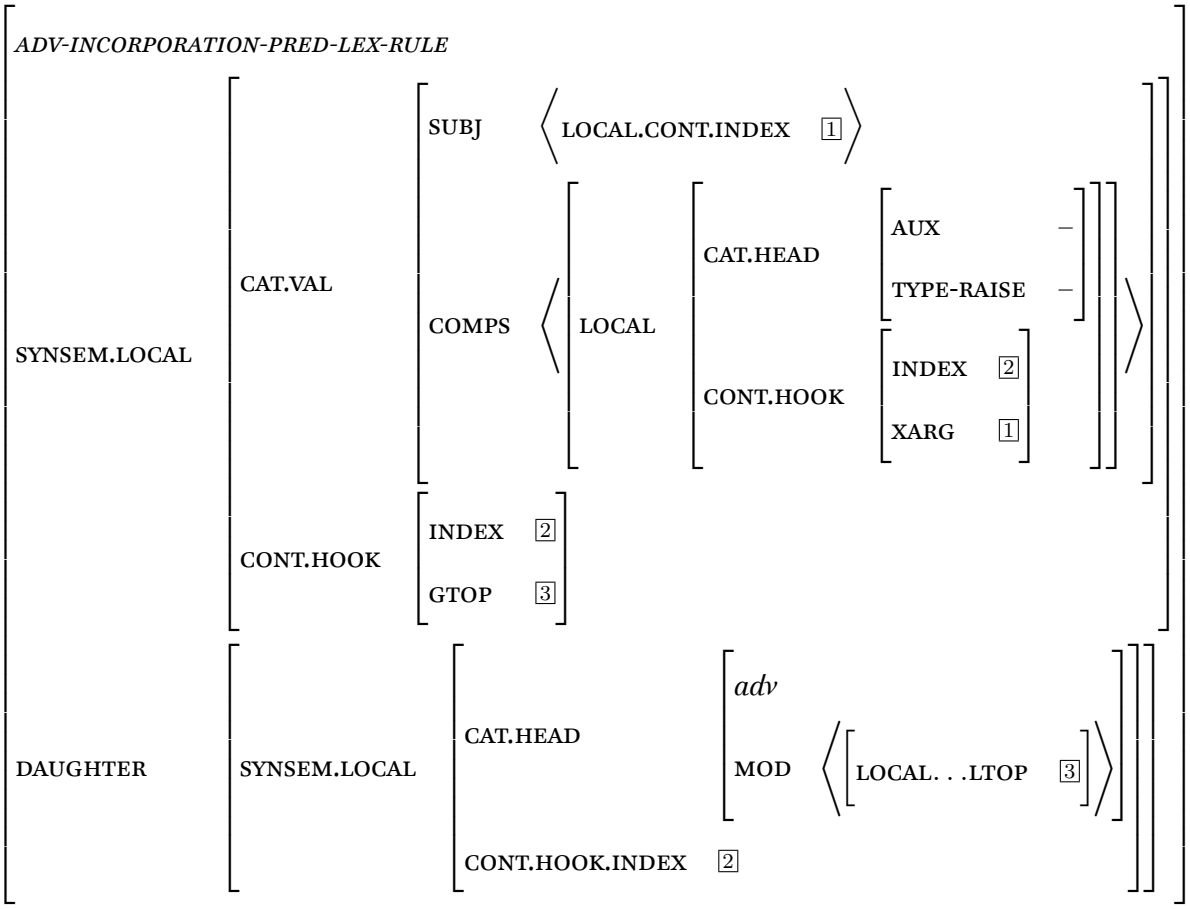
3.2.3.2 Auxiliary predicate suffixes

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

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.

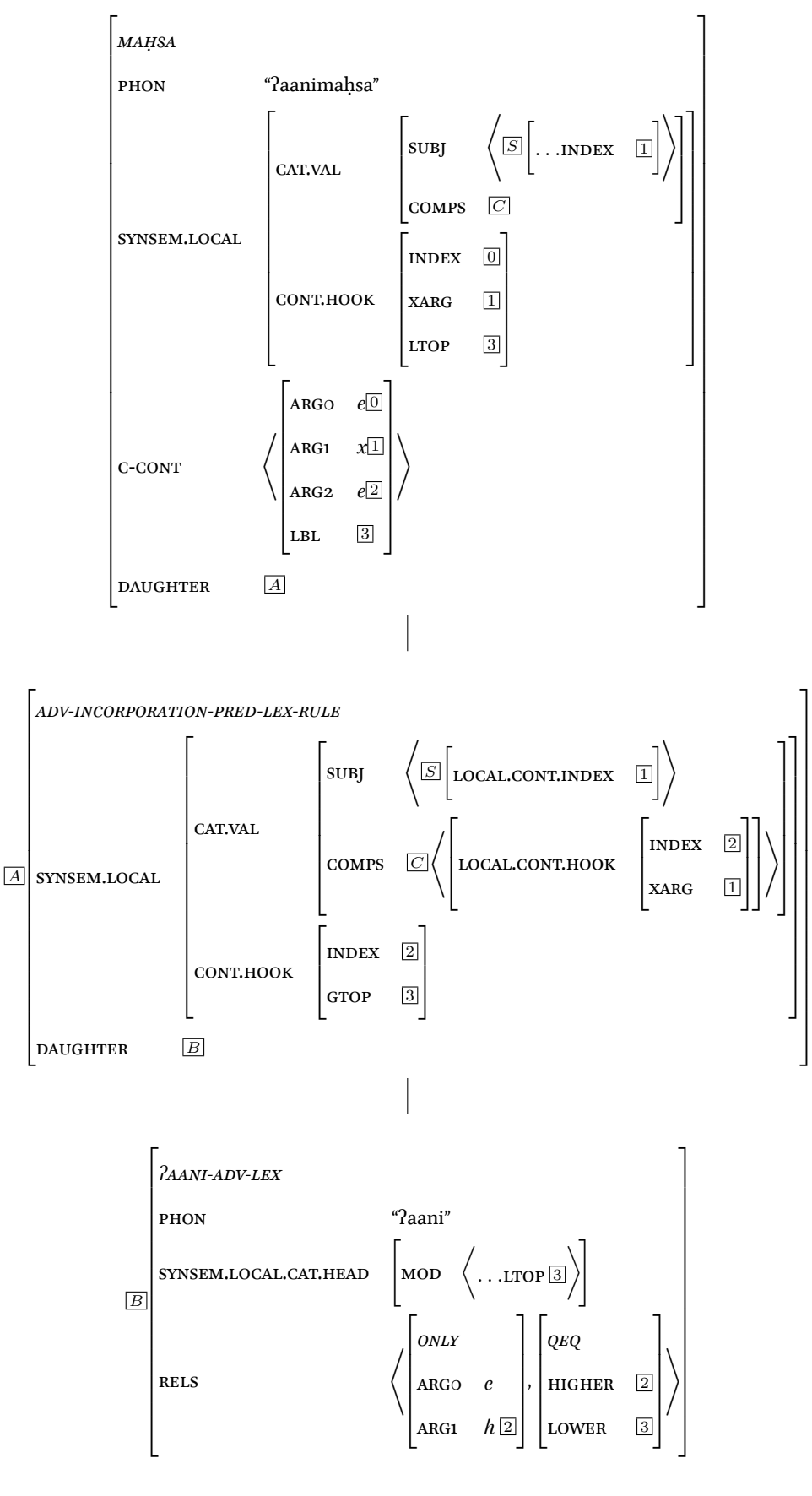
Once again, a final type applies the actual suffix verb itself, this time called *2P-SUFFIX-PRED-VERB-LEX-RULE*. This type is once again highly similar to the version seen for main predicate suffixes in (71). In fact, there is only one difference: the ARG2 of the C-CONT is an event type rather than a 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)

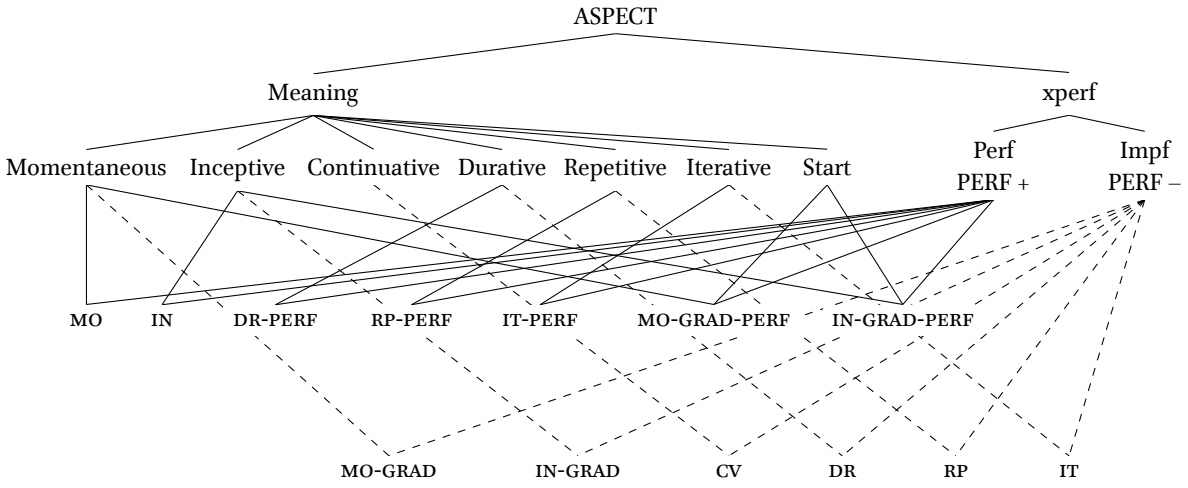

MAḤSA
PHON
“ʔaanimaḥsa”
SYNSEM.LOCAL
CAT.VAL
SUBJ
S
. . .INDEX
1
COMPS
C
CONT.HOOK
INDEX
0
XARG
1
LTOP
3
C-CONT
ARG0
e 0
ARG1
x 1
ARG2
e 2
LBL
3
DAUGHTER
A
ADV-INCORPORATION-PRED-LEX-RULE
A
SYNSEM.LOCAL
CAT.VAL
SUBJ
S
LOCAL.CONT.INDEX
1
COMPS
C
LOCAL.CONT.HOOK
INDEX
2
XARG
1
CONT.HOOK
INDEX
2
GTOP
3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

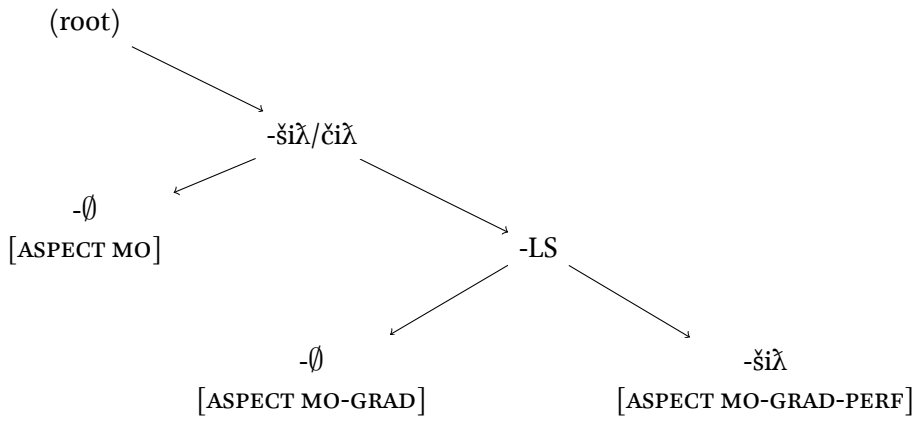
As indicated in (§3.1.5), I have implemented the traditional aspect system in my analysis. This is implemented in two parts. The first is a hierarchy of aspectual forms. For each final form present in Fig. 3.1, there is a node corresponding to it. Aspect is broken into two components: Meaning (which 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 chapter 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). I will ultimately define four different types of serial verb constructions in Nuuchahnulth and analyze them as a type of coordination that occurs within a single and clause beneath the scope of subject agreement and tense.

4.1 Serial Verb Definition

To investigate the properties of serial verb constructions (SVCs) in Nuuchahnulth I first have to define what I count as such a construction in the language. It is difficult to find a single widely accepted definition of serial verbs in the linguistic literature. Even in their typological survey, Aikhenvald & Dixon (2006) give several definitions, some of which conflict with each other. They define SVCs as 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. Some of these properties are either vague or not universally applied to all serial verbs. Aikhenvald & Dixon give no clear definition for a single predicate or a single event. Without a formal semantic representation, the interpretation of a single event is left open for individual linguists, and the definition of a single predicate (when it is not synonymous with a single event) seems to come down to monoclausality (i). While serial verbs may be phonologically connected (iv), they give several examples where the serial verbs are separated by intervening words (such as a direct object), and give instances of serial verbs (on their definition) where one verb is negated while the other is not. So none of these definitional properties are necessary and no single one seems to be sufficient. Some properties are left underdefined. Leaving some definitions vague and lacking to have universal tests is almost certainly necessary when attempting to define a phenomenon across all of human language, as

Aikhenvald & Dixon do.

I am only looking at one language, Nuuchahnulth, and will tailor my definition of a serial verb construction to the language, while attempting to keep the definition as neutral as possible with respect to syntactic framework. My functional definition of a serial verb construction in Nuuchahnulth is this:

(79) Any clause containing two or more verbs without an overt coordinator, and where the verbs share the semantic interpretation of the second position clausal inflection[1] is a serial verb construction.

Each matrix and dependent clause is marked with a second-position clitic, and so the boundaries of a clause are often easy to determine. The one exception to this is that the third-person neutral mood is null-marked. For this reason, when working with speakers I deliberately elicted examples not in this person-mood combination. However, in running text it is unavoidable that many constructions will have third person subjects. Because of the restriction that serial verb constructions lack an overt coordinator, constructions containing a linker morpheme (§5) do not count as SVCs.

The requirement of sharing second position clausal inflection is clearly Nuuchahnulth-specific. However, it is designed to capture the distinction between a single clause with a serial verb construction and two separate clauses. The way to determine a clause boundary will differ language to language. Because clause boundaries in Nuuchahnulth include subject information, the verbs necessarily share a subject. This may be true of all SVCs, but I make no such claim here. My definition says nothing about the semantics or event properties of a SVC, only that a serial verb construction is one where verbs relate to one another within the limits of a clause. There is room for a great deal of difference and diversity of SVCs that meet this definition.

4.1.1 Semantic Compositionality

I have an analytical preference for semantic compositionality where possible. Semantic compositionality means that one can create the semantics of the sentence directly from the semantics of lexical

[1] I will later show that some of the elements in this clausal complex do not scope over the entire clause, but narrowly over a verb. See §4.3.2.

items and combinatoric rules in the syntax. In my analysis (§4.3) I will be able to maintain compositionality for Nuuchahnulth SVCs. This may be a result of the facts about Nuuchahnulth as well as my framework, and I make no claims about semantic compositionality in SVCs cross-linguistically.

As an example of an SVC analysis that does not maintain compositionality, I will use Butt (1995)'s analysis of Urdu serial verbs. 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 may have a hierarchical relation in the syntax of the language (which contradicts the monoclausality requirement of Aikhenvald & Dixon (2006)), but form a new semantic unit. The semantic relation for the word 'write' might be WRITE(x, y), but when combined with the Urdu permissive verb LET(a,B), the new semantic relation is LET-WRITE(x, y, z). The composed semantic relation in this case has a different number of arguments from either of its dependent relations.

Despite the apparent relationship between WRITE, LET, and LET-WRITE, this analysis, without the development of a fuller semantic formalism, violates semantic compositionality. We write a relation and its elementary predication with upper-case letters as a shorthand for the 'meaning' of that morpheme. However, this convention is only for human readability, since we are not actually defining what those units mean but just using them as placeholders for "whatever the fuller lexical semantics are." We could write the meaning of *write* as MEANING1647 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. There is no formal relationship between these three meaning representations except through that equation. It is just as though the equation had been MEANING1647 + MEANING2119 = MEANING8780. Even though the meaning of Urdu's *let-write* is semantically compositional in the language, the meaning representation of Butt's "complex predicate" in the formalism is non-compositional with respect to its members.

This is not necessarily a bad thing in all contexts. Some sort of arbitrariness is necessary when modeling multi-word expressions like idioms, which have for a long time been understood as not fully compositional (Chafe 1968), although multi-word expressions can vary in their semantic compositionality (Nunberg et al. 1994). It is possible that many SVCs are not-quite compositional and a non-compositional semantic relation is an appropriate model. However, when this kind of rule is productive and has pre-

dictable semantics (as I will claim is the case for SVCs in Nuuchahnulth), I believe it is preferable to adhere to semantic compositionality in the formal analysis. Otherwise, one ends up with a list of semantic equations which is nearly the size of the set of verbs in the lexicon, if not larger.

In Lexical-Functional Grammar (LFG), which is the framework that Butt uses, the elementary predication (the all-caps semantic relation) 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 MRS (Copestake et al. 2005), which is the semantic framework I use, the elementary predication and its arguments are separated from each other. That is, the meaning of 'write' is represented with the relation or elementary predication separate from its arguments:

(80)
$$\begin{bmatrix} \textsc{pred} & \textsc{write} \\ \textsc{arg0} & e \\ \textsc{arg1} & x \\ \textsc{arg2} & y \end{bmatrix}$$

This separability is something the formalism shares with Neodavidsonian representations (Parsons 1990), and it is this framework that will allow me to maintain strict semantic compositionality in my analysis of serial verbs in Nuuchahnulth.

4.1.2 Non-SVCs

I have defined Nuuchahnulth serial verb constructions in (79) as any clause (defined by the position of second position clausal enclitics) which contains more than one verb, without any overt coordinator, and where the clausal enclitics are semantically interpreted as belonging to all verbs in the construction. There are a few types of constructions that nearly fit this definition, but are excluded. The first is juxtaposed clauses (81).

(81) 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)

(81) 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. (82) has the same structure, and is from a description of Raven in a narrative text.

(82) 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 (81), (82) is in the third person, and I believe the two verbs are part of two separate clauses, rather than a serialization structure. When these sorts of constructions occur outside the third person, the adjacent clauses require an overt enclitic, and so this apparent ambiguity (serialization vs adjacent clause) only occurs in the third person.

The second kind of construction that falls outside my definition of a SVC is 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’ (83). If the time expression is in a perfective aspect, the interpretation is ‘after *x* time’ or ‘at the end of *x* time’ (84).

(83) sučačɬintiis hił ċuumaʕaas.

sučа-či·ɬ=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)

(84) ʔaḥʔaaʔaƛqačа ṅupqʔičḥšiʔeƛ ṅaacsaaƛ ḥiškʷiiʔatḥ čapac hintšiƛ ʔuucaẏuk ḥiškʷiiʔatḥ.

ʔaḥʔaaʔaƛ=qa·ča ṅup-qʔičḥ-šiƛ=!aƛ ṅaacsa=!aƛ ḥiškʷiiʔatḥ čapac hintšiƛ

and=DUBV one-year.DR-MO=NOW see=NOW Hesquiaht canoe arrive.MO.GR

ʔu-L.caẏuk 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 (85). The opposite (interpreting the durative form to mean 'after') is not possible to my knowledge.

(85) ʔaḥʔaaʔaƛ muučiiɬšiƛna hił siẏa ʔaḥʔaaʔaƛ ḥaakʷaaƛuk Matthew, kʷaaʔuucukqs.

ʔaḥʔaaʔaƛ muu-či·ɬ-šiƛ=na· hił siẏa 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 (83, 85), the person expressed in the subject clitic is not in any way the subject of the temporal expression. In (83), 'I' is not the subject of 'five days.' This is also the case for the subjects of the

verbs in (84, 85). Instead, the time expression seems to be opaque to the subject information present in the clause. So while this construction does have two verbs in a single clause, the interpretive scope of the second position enclitics, and particularly the subject-mood enclitic, only falls on one of the verbs (the non-temporal one). Thus, this type of construction is excluded from my scope for serial verbs.

4.2 Data

4.2.1 Types of Serial Verb Constructions

Descriptively, I have categorized observed serial verb constructions into four types. These types are not motivated a priori by any external typological theories or a commitment to these categories, but were created an attempt to make sense of my data. In my analysis (§4.3) I will create a type that collapses (a modified version of) Type I and III, but I leave them separated here in an attempt to maintain a distinction between data and analysis.

4.2.1.1 Type I: Simultinaeity

This SVC links two verbs together that necessarily occur simultaneously. Semantically, they can often be described loosely as "manner and action"—where one verb is expressing the main action, and another is expressing how it is done. This includes motion and manner of motion (e.g., go + walk as in 86), a semantically light verb like "do" coordinating with the actual action (e.g., only-do + lie-down as in 87), and metaphoric motion and action (e.g., go-back + become-alive as in 88).

(86) **ʔuucuʔuk**ẇiɬasaḥ **yaacuk** c̓uumaʕas.

ʔuucuʔuk-ẇiɬas=(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)

(87) **ʔanasł**intwaʔš **ɬawiłšƛ̓.**

ʔana-siła=int=waˑʔš **ɬawił-šiƛ̓**

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

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

(88) **huʔacačiʔ**aqƛ̓suuk **tiičačiƛ̓.**

huʔa-ca-čiƛ̓=!aaqƛ̓=suuk **tiič-°ačiƛ̓**

back-go-MO=FUT=NEUT.2PL **live-IN**

'You will come back to life.' (**C**, *tupaat* Julia Lucas)

This construction is not limited to the semantics of "manner and motion." Speakers can also coordinate verbs that describe resultative and simultaneous actions (e.g., feel sorry for + mistreat as in 89), or what I sometimes call serial repetition, which includes cases where a transitive and intransitive verb are both used to express an action (e.g., eat + eat in 90, and cry + cry for in 91), or where two transitive verbs, one more specific and less specific, are used (e.g., say + talk about in 92). The only unifying property of this SVC type seems to be simultaneity.

(89) wiḵ̓iis **x̣ax̣aał łaakʷiił** siẏa.

wik=!iˑs **x̣ax̣aał** **łaakʷiił** siẏa

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

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

(90) ʔuʔiiċaʔaƛ̓ **haʔuk.**

ʔu-**!iic**=!aƛ̓=!iˑ **haʔuk**

X-**eat.DR**=NOW=CMMD.2SG **eat**

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

(91) **ʕiḥak**itʔiš **ʔuʔuuẏuk**[2] 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)

(92) **waa**ʔaƛ̓iič **ʔuumaćkʷ** ʔuušḥẏimskqs.

waa=!aƛ̓=(y)ii=č **ʔu-L.maćuk** 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)

This kind of SVC can "stack" beyond coordinating just two verbs, to at least three (93).

(93) **huʔacačiƛ̓ẇiɬasaḥ šiiƛ̓uk wałaak** yuuɬuʔiɬʔatḥ.

huʔa-ca-čiƛ̓-ẇiɬas=(m)aˑḥ **šiiƛ̓uk** **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 (94, 95, 96).

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

ʔuucɬiiḥ$_{v_1}$=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)

---

[2]This is not the normal form of the verb 'cry for' which is *ʔuʔuuyuk*. Compare with *-RL.ayuk* in (Sapir & Swadesh 1939:317).

(95) ʔuʔiis$_{v_1}$ʔaƛ̓in haʔuk$_{v_2}$ suuḥaa$_{obj_1}$.

ʔu-!iis$_{v_1}$=!aƛ̓=!in [haʔuk]$_{v\_2}$ suuḥaa$_{obj_1}$

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

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

(96) hiniicintiisʔinɬ$_{v_1}$ [ʔucič̓ƛ̓$_{v\_2}$ ciquuwɬi$_{obj_2}$]$_{vp\_2}$ ɬaatʼaʔiskqs$_{obj_1}$.

hina-iic$_{v_1}$=int=(y)iis=ʔinɬ [ʔu-ci-čiƛ̓$_{v\_2}$ ciq-uwiɬ=ʔiˑ$_{obj_2}$]$_{vp\_2}$ L.<t>-ɬaʼa=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)

I noticed in the course of working on this project that this type of SVC has a strong tendency to agree in perfectiveness. For an overview of Nuuchahnulth's aspect system, see §3.1.5. Here it is most relevant that verb forms that end in the "inceptive" or "momentaneous" aspect are perfective, while all other forms are imperfective.

Despite my belief that there is a preference for aspectual matching, speakers were often very flexible on the grammaticality of perfective mismatching when asked about it directly. I made several attempts to suss out whether this was a grammatical rule in one-on-one sessions with speakers, but often received contradicting information, with speakers sometimes correcting a construction to match in perfectivity and other times volunteering mismatched verbs. I tried to resolve the issue by annotating SVCs that occurred in running texts. These texts I used came from a number of sources: (1) Sapir & Swadesh (1939); (2) Texts gathered by Adam Werle and provided to me (some from speakers I have not worked with and some I have); (3) Texts I elicited with speakers. Some of these were texts I have interlinearized and some I have not.

I went through these texts and marked instances of what I believed to be SVCs. Because a large number of cases in running text are third person, and thus possibly involve more than one clause with a null-marked third person, I had to make educated guesses about whether some third-person constructions were two clauses or a SVC. I used a few tells: (i) the presence or absence of overt (non-neutral) third-person inflection in the surrounding text; (ii) whether the verbs share an (overt) object; (iii) whether

the verbs are in an embedded clause. I ranked possible SVCs on a confidence level of 1-4, with 1 being uncertain, 2 a toss-up, 3 likely, and 4 completely positive. I then counted how many times the two verbs in the SVC matched or mismatched in perfectivity. For a few cases (see below) I was uncertain about the perfectivity of one of the verbs and gave it a score of 0.5. I then threw away all SVCs ranked as 1s and 2s. The remaining data are presented in Table 4.1 below. I have broken this data into five sections: Data from the Nootka Texts, which is roughly 100 year old Tseshaht Nuuchahnulth, and then one for each of the modern dialect regions (Barkley, Central, Northern, and Kyuquot-Checleseht). The majority of the Central data comes from my consultant Julia Lucas, and the majority of the Kyuquot-Checleseht data comes from an in-progress Bible translation from Sophie Billy. I lumped these together with other smaller sources, which (from my limited data) appear to have similar broad characteristics.

Table 4.1: Type I SVCs and Perfectivity

	Word count	Type I SVCs	Perfectivity mismatches
Nootka Texts	2220	22	1
Barkley speakers	942	10	3
Central speakers	2456	26	9.5
Northern speakers	1621	12	3.5
Kyuquot-Checleseht speakers	6928	36	11

Perfectivity mismatches almost do not occur in my sampling of the Nootka Texts. The 1 count comes from 2 cases that were given a 0.5. The first is due to the verb *ʔuḥtinʔap* 'make out of', which appears to be made with the imperfective form of the suffix *-ḥtin* 'made of', but could plausibly be interpreted as perfective (since it is an act of creation), which then coordinates with perfective *ʔukʷiiɬšiƛ*. Another case was given a 0.5 count because it coordinated the verb *qʷis* 'do thusly' with *ḥaʔukʷiƛ* 'do in return' (perfective).[3] It is possible to interpret *qʷis* as imperfective (there is a clear perfective *qʷisšiƛ*), but it is also possible that 'do thus' is in a different kind of non-serialized relationship with the following verb and not a SVC.

[3]This exact same construction *qʷis* + *ḥaʔukʷiƛ* also appears in a text from Earl Smith, a Northern dialect speaker, and so may also be a formulaic expression.

Mismatches are much more common among modern speakers, occurring about a third of the time. Many of these cases share some common features: 5 include the imperfective verb *hiniic* 'carry' coordinated with a perfective verb of motion; 3 include imperfective *ʔucaap* 'put' coordinated with a perfective verb of motion; and 2 include imperfective *ʔukʷiił* 'make' with a perfective verb. I single out these cases because they are cases where the corresponding perfective forms, *hiniicšiƛ*, *ʔucaẏap*, and *ʔukʷiiłšiƛ* are relatively rare, and the semantics of these verbs are such that they may may be lexical exceptions to perfectivity matching. There are other lexically-conditioned SVCs that do not have perfectivity requirements (§4.2.1.2, §4.2.1.3). These three verbs account for half of the mismatching cases in Table 4.1. The remaining cases and are mostly various motion verbs mismatching with one another: imperfective *ʔuyiiq* 'be in a canoe' and perfective *wałaak* 'go' (Bob Mundy, Barkley dialect); perfective *ʔucačiƛ* 'go' and imperfective *ƛatẃaa* 'paddle' (Julia Lucas, Central dialect); perfective *wałšiƛ* 'go home' and imperfective *kamitqkʷ* 'run' (Sophie Billy, Kyuquot-Checleseht dialect); and so on. It is significant that mismatches like this do not occur in any of the Nootka Texts I annotated. My interpretation of these distributive facts is that there was either a grammatical requirement or grammatical preference in the past for a serial verb construction to have matching perfectivity, but in the present status of the language that preference has significantly relaxed.

In an attempt to directly confirm this perfectivity preference, I put together a short set of standard forced-choice tests, which included perfectivity matching, to see if speakers would choose matching verb forms or non-matching verbs. The results were mixed, and I believe this is partly due to cultural factors making this kind of test difficult in the language and also from the test itself. Speaker responses were different in this out-of-the-blue forced choice from their responses when working with sentences presented in context. A detailed discussion of this forced-choice test is given in Appendix C.1.

In elicitation sessions where sentences were situated within a given context, a stronger preference for perfectivity matching did in fact emerge. This happened in two ways: Speakers typically rejected a rephrasing of matched perfectivity sentences that used mismatched perfectivity, and speakers (when ruminating on a sentence) would sometimes repeat it until they reached matching perfectivity, and say, "Yes, that's the best way to put it." This is consistent with my interpretation that the perfectivity requirement is an older component of the grammar that has relaxed in the modern language.

An example of this kind of judgment from speakers can be seen in (97, 98). In (97), a sentence that was provided initially by my consultant, the two verbs are both in the durative aspect. In the ungrammatical (98), which I suggested, the second verb has been moved to the momentaneous.

(97) ʔuucaẏukẇiɬass yuułuʔiɬʔatḥ yaacuk.

ʔuucaẏuk-ẇiɬas=s yuułuʔiɬʔatḥ yaacuk

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

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

(98) *ʔuucaẏukẇiɬass yuułuʔiɬʔatḥ yaacšiƛ.

ʔuucaẏuk-ẇiɬas=s yuułuʔiɬʔatḥ yaacšiƛ

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

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

In another context, the same consultant Julia Lucas had the precisely opposite judgment of perfectivity mismatching. (99, 100) below are a near inversion of (97, 98) above. The verb 'go' is second, rather than first, in the construction, and the clause is in the future tense with *=!aqƛ* rather than the modal intentional future *-ẇiɬas*. When Julia rejected (100) she said, "No, *yaacuk* because you are on your way."

(99) ƛiiḥšiʔeqƛs ʔuuciẏuk yuułuʔiɬʔatḥ.

ƛiiḥšiƛ=!aqƛ=s ʔuuciẏuk yuułuʔiɬʔatḥ

drive.MO=FUT=STRG.1SG go.DR Ucluelet

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

(100) *ƛiiḥšiʔeqƛs ʔucačiƛ yuułuʔiɬʔatḥ.

ƛiiḥšiƛ=!aqƛ=s ʔu-ca-čiƛ yuułuʔiɬʔatḥ

drive.MO=FUT=STRG.1SG X-go-MO Ucluelet

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

In an initial session with Bob Mundy and Marjorie Touchie when I examined this issue, they expressed a strong preference for perfectivity matching (101–103). In other sessions and with other sentences they did not express this preference (see Appendix C.1).

(101) **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)

(102) ***haʔuk**ẇiɬasin ʔu**ʔiisšiƛ** suuḥaa.

haʔuk-ẇiɬas=(m)in ʔu-!iis-šiƛ 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)

(103) **haʔukši**ʔaƛin ʔu**ʔiisšiƛ** suuḥaa.

haʔuk-šiƛ=!aƛ=(m)in ʔu-**!iis-šiƛ** suuḥaa

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

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

My best interpretation of this apparently contradictory data is this: perfective aspect on 'going' verbs is dispreferred in the future tense, because the typical interpretation of perfectivity is that an action is completed. This helps explain the grammaticality judgments in (99, 100), although it doesn't do anything to explain why the verb *ƛiiḥšiƛ* is in a perfective aspect. Without this complication of tense, as in (97, 98), a preference for perfectivity matching can emerge, although this is no longer an absolute preference (Table 4.1). Requirements of perfectivity matching are eroding, and perfectivity preferences for verbs of motion appear to be the least strict.

Sensitivity to perfectivity matching also varied by consultant. Fidelia Haiyupis consistently produced sentences grammaticality judgments in preference of perfectivity matching. Even in cases like (104) below, which I suggested, she responded that it was fine, but then went on to rephrase it as (105).

(104) ? yaacukʷints ʔucačiƛ ʕaʔukʔi.

yaacuk=int=s ʔu-ca-čiƛ ʕaʔuk=ʔiˑ

walk.DR=PST=STRG.1PL x-go-MO lake=ART

Intended: 'I walked to the lake.' (**N**, Fidelia Haiyupis)

(105) yaacukʷints ʔuucɬiiḥ ʕaʔukʔi.

yaacuk=int=s ʔuucɬiiḥ ʕaʔuk=ʔiˑ

walk.DR=PST=STRG.1PL go.DR lake=ART

'I was walking to the lake.' (**N**, Fidelia Haiyupis)

For one of my consultants, Sophie Billy, who is the youngest speaker and the only Checkleseht speaker I worked with, there was absolutely no preference for perfectivity matching in her speech. This could be a property of Kyuquot-Checkleseht, her generation, or her idiolect, and I have no way of knowing. In elicitation sessions, she would productively produce matching (106) and mismatching (107) SVCs, and I was unable to get any judgments on perfectivity matching from her in rewording tests.

(106) wałšaʔƛk huʔačičƛ ċuumaʕaas.

wał-šiƛ=!aƛ=k huʔa-ci-čiƛ ċuumaʕaas

go.home-MO=NOW=QUES.2SG back-go-MO Port.Alberni

'Are you going home to Port Alberni?' (**Q**, Sophie Billy)

(107) yaacukẇiɬsiis wałšiƛ.

yaacuk-ẇiɬs=(y)iis wał-šiƛ

walk.DR-going.to=WEAK.1SG go.home-MO

'I'm going to walk home.' (**Q**, Sophie Billy)

4.2.1.2 Type II: Location and Action

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

(108) hiłʔii wiinapuƛ.

hił=ɬiˑ wiinapuƛ

be.at=CMMD.2SG stop.MO

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

(109) 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 *hił* 'be at' to be split from its object by the other verb (110), or the other verb and its object (111).

(110) 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)

(111) hiłqiiʔaƛin ṅaacsiičiƛ čums nučii.

hił-qii=ɬaƛ=in ṅaacsa-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 does not appear to be a 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* or **hiłiičiƛ*, and *hił* can serialize with both perfective (108) and imperfective verbs (110). 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 still no requirement for perfectivity agreement here, as these location verbs can serialize with both perfective (111) and imperfective verbs (109).

Unlike Type I verbs, there is a strong ordering preference. When presented with alternative constructions, all my consultants insisted that the location verb must come before the action verb (112– 117).

(112) mačiiłʔaƛniš mamuuk.

mačiił=!aƛ=niˑš mamuuk

inside-NOW=REAL.1PL work.DR

'I am working inside.' (**C**, *tupaat* Julia Lucas)

(113) *mamuuk̓aƛniš mačiił.

mamuuk=!aƛ=niˑš mačiił

work.DR-NOW=REAL.1PL inside

Intended: 'I am working inside.' (**C**, *tupaat* Julia Lucas)

(114) hiłʔaƛin mamuuk wałyookqs.

hił=!aƛ=(y)in mamuuk wałyuu=ʔak=qaˑs

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

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

(115) *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)

(116) ƛ̓aaʔaasčiˑ ʕaaqʕaaqa.

ƛ̓aaʔaas=čiˑ ʕaq-LR2L.a

outside=CMGO.2SG yell-RO

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

(117) *nunuukči ƛaaʔaas.

nunuuk=čiˑ ƛaaʔaas

sing.DR=CMGO.2SG outside

Intended: 'Go sing outside.'[4] (**N**, Fidelia Haiyupis)

As I did for Type I SVCs (Table 4.1), I annotated texts to see if this preference was reflected in natural language. There were fewer location words in my sample, so Table 4.2 includes examples I rated as 2-4 on my scale of SVC likelihood (probable to certain). The results were surprising.

Table 4.2: Type II SVCs and Ordering

	Word Count	Type II SVCs	Location second
Nootka Texts	2220	8	4
Barkley speakers	942	1	0
Central speakers	2456	5	1
Northern speakers	1621	2	0
Kyquot-Checleseht speakers	6928	7	3
Total	14167	22	8

The results of this table seem to contradict my speakers' judgments above. I looked more deeply into each case where the location is the second verb in a SVC. They break cleanly into two cases: (1) Cases where the location verb is in a perfective aspect; and (2) cases where *hił* is occurring second.

4 of the above cases are instances where the second verb is a perfective location word. (118, 119) are typical examples.

[4](117) 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.

(118) ʔuʔuʔiiḥšiʔaƛweʔin hitinqsaʔaƛ.

ʔu-R.ʔiiḥ-šiƛ=!aƛ=weˑʔin hitinqsaƛ=!aƛ

X-go.after-MO=NOW=HRSY.3 at.beach.MO=NOW

'She went out to get them going down to the beach.' (**B**, Big Fred (Sapir & Swadesh 1939:54))

(119) kamitqukʷint hitaaqƛ̓iƛ qʷayaċiik.

kamitq-uk=int hitaaqƛ̓iƛ qʷayaċiik

run-DR=PST in.forest.MO wolf

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

My interpretation of these data is that the location ordering requirement only applies to imperfective locations, *being somewhere* rather than *moving somewhere*. It is possible then that perfective locations behave in some ways like Type I SVCs (§4.2.1.1), although (118) shows a perfectivity mismatch in the Nootka Texts which does not occur, or occurs extremely rarely, for non-location serialization. (119) also contains a perfectivity mismatch which is very unusual for Fidelia Haiyupis, who was the speaker I worked with who was most consistent with perfectivity matching in Type I SVCs. I do not have a full analysis of perfective location words, and unintentionally focused on imperfective forms in my field work. In my analysis (4.3.3.2 I will define perfective location words as non-locations so they can be parsed as Type I SVCs. However, this is unsatisfactory given the mismatches above, and I must leave questions about how to fully treat this for future work.

5 of the location-second SVCs are cases where the location word *hił* 'be at' appears as the second verb in the construction. (120, 121) give two examples from my Central consultant Julia Lucas where the phrase *hił ʕaaḥuusʔatḥ* 'being at Ahousaht' behaves as a modifying element of a verb. The *hił*-second construction also occurs in the Nootka Texts (122).

(120) ʔuyimitʔišʔaałʔał ʔaḥʔaa tuupšiʔeƛquu hił ʕaaḥuusʔatḥ.

ʔuyi=(m)it=ʔi·š=ʔaał=ʔał ʔaḥʔaa tuupšiƛ=!aƛ=quu hił ʕaaḥuusʔatḥ

and.then=PST=STRG.3=HAB=PL DTOP get.dark.MO=NOW=PSSB.3 be.at Ahousaht.

'It was when it would get dark at Ahousaht.' (**C**, *tupaat* Julia Lucas)

(121) ʔaḥʔaaʔaƛqaˀča ḥiškʷiiʔatḥ hinin hił ʕaaḥuusʔatḥ.

ʔaḥʔaaʔaƛ=qa·ˀča ḥiškʷiiʔatḥ hinin hił ʕaaḥuusʔatḥ

and.then=DUBV.3 Hesquiaht arrive.MO be.at Ahousaht.

'And then the Hesquiahts would arrive at Ahousaht.' (**C**, *tupaat* Julia Lucas)

(122) muułčiiłsi wiinapi hił ṗaačiinaʔaa.

muuł-či·ł=si· wiinapi hił ṗaačiinaʔaa

four-day.DR=NEUT.1SG not.move be.at Port.San.Juan

'I waited at Port San Juan for four days.' (**B**, Tom Sayaachapis, (Sapir & Swadesh 1939:148))

There are a few ways I can interpret this: (i) call the location-first ordering restriction a preference than a grammatical requirement; (ii) relax ordering constraints for both *hił* and perfective location words; (iii) analyze the above *hił* uses as a different (non-SVC) construction.

Option (i) is unappealing to me because despite this data speakers were able to clearly articulate their preference for location-first SVCs. More than one consultant said, without any prompting, "Put it the other way, so you say where you are first." Option (ii) would require two location SVC constructions. I instead selected option (iii), and analyze the above examples of *hił* as non-SVCs. Instead, I analyze *hił* as heading a modifying adverbial phrase in these cases. *hił* is already an unusual defective verb—it cannot take perfective morphology. By analyzing *hił* as both a verb and the head of adverbial phrase, I preserve speaker's intuitions about locations having to occur first in presented SVCs, but also account for the conflicting data. Once these two cases—perfective location verbs and modifying *hił* are accounted for—I had no counterexamples to location ordering in my annotated corpus.

Finally, this restriction on location serialization can be interpreted as a grammaticalization of a larger

preference in Nuuchahnulth for modifying expressions to precede what they modify. Adverbs will preferentially precede the verb (and speakers will correct themselves and others by moving adverbs before to a verb). The preference for location-first SVCs seems to be stronger than the adverb-first preference, and I interpret it as a grammatical rule for non-perfective location SVCs.

4.2.1.3 Type III: Adposition-like verbs

A fuller discussion of adposition-like verbs 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. This includes verbs with commative, benefactive, and instrumentive meanings. All of these words are suffixes that attach in the default case to the semantically empty root *ʔu-*. I have included in this category *ʔuuḥẇał* 'use', *ʔuuʔink* 'use', *ʔuuʔatup* 'for', *ʔucḥin* 'for', and *ʔukʷink* 'with' (all from Woo 2007:p.15), as well as *ʔuupaał* 'with.' This is not meant to be a complete list. These verbs can enter into a SVC (123, 124), and these constructions have the same property of SVC Types I and II, where a second verb can "interrupt" a transitive verb and its object (125).

(123) hiinasiƛayaʔiš haaẇacsaćumʔi ʔuuḥẇał kʷaacsaćum.

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

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

(124) ʔuupaałẇiɬasniš ẏukʷiiqsu ʔucačiƛ Campbell River.

ʔuupaał-ẇiɬas=niˑš	ẏukʷ-iˑqsu	ʔu-ca-čiƛ	Campbell	River
with-going.to=STRG.1PL	younger.sibling-relation	X-go.to-MO	Campbell	River

'I'm going with my younger sister to Campbell River.' (**C**, *tupaat* Julia Lucas)

(125) ʔucḥins mamuuk Trudeau.

ʔu-cḥin=s mamuuk Trudeau

x-do.for=STRG.1SG work.DR Trudeau

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

Like Type II SVCs, adposition-like verbs freely serialize with both perfective (124, 126) and imperfective verbs (123, 125). When I attempted to get an example of an "interrupted verb phrase" my consultant only agreed to the case where it was an intransitive verb interrupting, rather than a transitive verb with its argument (126, 127).

(126) ʔucačiʔaƛukʷitaḥ ɬaṅeʔis ċuumaʕas ʔukʷink yaaqsčaʕinʔitq.

ʔu-ca-čiƛ=!aƛ=uk=(m)it=(m)aˑḥ ɬaṅa=ʔis ċuumaʕas ʔu-(č)ink yaq-L.(k)sčaʕin=ʔiˑtq

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)

(127) *ʔukʷinƙaƛukʷitaḥ ʔucačiƛ ɬaṅeʔis yaaqsčaʕinʔitq.

ʔu-(č)ink=!aƛ=uk=(m)it=(m)aˑḥ ʔu-ca-čiƛ ɬaṅa=ʔis yaq-L.(k)sčaʕin=ʔiˑtq

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)

It's unclear to me if Type III SVCs require the interrupting element to be intransitive, or if this context was simply difficult for my consultant to parse. Interrupting VPs (complete with an object), while possible, are often dispreferred across all SVCs. The longer the interrupting phrase is, the more likely a consultant is to reject the example, and most examples I have of this phenomenon in running text—across all SVC types—are single intransitive verbs.

Like Type II SVCs, some of the verbs in the "adpositive-like" class have perfective forms (128, 129, 130, 131). As with the non-perfective forms, there is still no requirement for perfectivity matching (128, 129).

(128) ƛaḥs ʔučḥinčiƛ mamuuk.

ƛaḥ=s ʔu-čḥin-čiƛ mamuuk

now=STRG.1SG X-BENEF-MO work.DR

'I started to work for him/her/them.' (**N**, Fidelia Haiyupis)

(129) ʔuuʔatupšiƛwaʔiš mamuuk Friendship Center.

ʔu-L.ʔatup-šiƛ=waˑʔiš mamuuk Friendship Center

X-BENEF-MO=HRSY.3 work.DR Friendship Center

'I hear she started to work for the Friendship Center.' (**C**, *tupaat* Julia Lucas)

(130) ʔukʷinkšiƛẇiɬassiš ṁaaṁiiqsakqs ʔucačiƛ ṅačiqs.

ʔu-(č)ink-šiƛ-ẇiɬas=siˑš ṁaaṁiiqsu=ʔak=qs ʔu-ca-čiƛ ṅačiqs

X-with-MO-going.to=STRG.1SG older.sibling=POSS=DEFN.1SG X-go-MO Tofino

'I'm going to go with my older sister to Tofino.' (**C**, *tupaat* Julia Lucas)

(131) ʔuuḥẇałšiƛmaʔał muuna.

ʔu-L.ḥẇał-šiƛ=maˑ=ʔał muuna

X-use-MO=REAL.3=PL motor

'They started using motors.' (**B**, Bob Mundy)

Type III serialization in my ontology involves two verbs, one of which expresses an adposition-like meaning. They are like Type II location serializations in that there is no requirement that the verbs match in perfectiveness. But they are different in that there is no ordering preference.

4.2.1.4 IV. 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. 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 preservesemantic 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 SVCs Types I–III 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, I will introduce a separate semantic relation 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. For instance, (132) is from an exhortative text, and immediately follows the command "Don't throw your clothes on the floor."

(132) sukʷiʔi ḵ'ašsaap
su-kʷiƛ̓=!i· ḵ'aš-sa·p
hold-MO=CMMD.2SG put.away-MO.CAUS
'Take it and put it away.' (**C**, *tupaat* Julia Lucas)

When presented with a possible reordering (133), my consultant said it was in the wrong order, and didn't make sense.

(133) # ḵ'ašsaaṗi sukʷiƛ̓
ḵ'aš-sa·p=!i· su-kʷiƛ̓
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. (134) was a sentence given by a consultant, and when I asked about (135) her response was that it sounded backwards.

(134) ʔuciči**ʔ**im pankuupaa ẏakši**ƛ** siičił.

ʔu-ci-či**ƛ**=!im pankuupaa ẏak-ši**ƛ** 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)

(135) # ẏakši**ʔ**im siičił ʔuči**č**ƛ pankuupaa.

ẏak-ši**ƛ**=!im si-L.(č)ił ʔu-ci-**č**ƛ pankuupaa

appear-MO=CMFU.2SG 1SG-do.to x-go.to-MO Vancouver

'See me and come to Vancouver.' (**Q**, Sophie Billy)

This construction can also be used to describe planning actions (136) or when giving formal instructions to children (137).[5]

(136) **ƛ̓**iptqši**ʔ**in **ḵ̓**anisẏakukqin wałaak hitinqis**ʔ**i.

ƛ̓iptq-ši**ƛ**=!in **ḵ̓**an-°is-ẏak=uk=qin wałaak hitinqis=ʔiˑ

pack-MO=CMMD.1PL 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)

(137) na**ʔ**aataḥ**ʔ**atma**ʔ**aała nunuuk**ʔ**i **ṅ**aacsa huyaał**ʔ**i.

na**ʔ**aataḥ=!at=maˑ=**ʔ**aała nunuuk=ʔiˑ **ṅ**aacsa 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)

The sequential interpretation of (137) 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.

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

---

[5]The syntax of (137) is a little bit strange. However, I am confident that my consultant believed it was grammatical, even if phrased a little oddly.

(138) naʔaatḥi ṅaacuuḥ huuḥtikšiiḥ.

naʔaatḥ=ʔiˑ ṅaacuuḥ huuḥtikšiiḥ

listen.DR=CMMD.2SG watch.DR learn.MO

'Listen, watch, and learn.' (**Q**, Sophie Billy)

There is no requirement on perfectivity matching, which is predicted if this SVC has a sequential (or at least, not necessarily simultaneous) interpretation. The examples below show the verbs in this construction disagreeing (139) and then agreeing (140) in aspect. There is a slight difference in meaning.

(139) 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)

(140) 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)

Type IV SVCs do not allow VPs to be interrupted, as seen in Types I-III. The context for (141–143) 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 depending on how the story goes. (141) was suggested by my consultant, and I suggested (142) and (143).

(141) 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)

(142) čˀaxʷaciicsiš cassaap ʕiniiƛ.

čˀaxʷac-iic=siˑš	cas-saˑp	ʕiniiƛ
bucket-hold.DR=STRG.1SG	chase-MO.CAUS	dog

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

(143) *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)

(144) and (145) are a minimal pair showing the same kind of judgment from speaker Sophie Billy, where in (145) there is a "typical" (to Types I–III) V1 VP2 Obj1 structure. Much like (141–143), despite the verb of motion 'go' and the action 'carry', this is not a Type I construction but carries an pragmatic assumption about temporal ordering. Sophie consistently translated *hiniic ṗatqukkqs* as 'get my luggage,' and as a preparatory step for moving to Vancouver. The interpretation of (144) is sequential action: First carry one's things, then go to Vancouver.

(144) 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 carried[6] my belongings and went to Vancouver.' (**Q**, Sophie Billie)

(145) *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 carried my belongings and went to Vancouver.' (**Q**, Sophie Billie)

[6]Sophie used the word 'pack' here, which I have changed to carry. It is a feature of Vancouver Island English that the word *pack* can mean both to put materials into a suitcase, and also to carry luggage. From my understanding of the word *hiniic* I believe the semantics of Sophie's *pack* here align more closely with Standard English *carry*.

4.2.1.5 Summary and overview of SVC Types

I have defined four different types of serial verb constructions, all with slightly different properties. These properties are summarized in Table 4.3. The one issue not cleanly summarized is perfectivity matching, which seems to historically have been necessary for Type I SVCs, but is either being lost or has already been lost in the modern grammar.

Table 4.3: Summary of SVC Types

	Description	Perfectivity matching	Verb-object splitting	Ordering restriction
Type I	Simultaneous	(✓)	✓	None
Type II	Location	✗	✓	Location first
Type III	Adposition-like	✗	✓	None
Type IV	Separable / Sequential	✗	✗	Temporal ordering

Finally, there are a few things true about all SVCs. Cross-serial dependencies are never possible, as illustrated in (146, 147).

(146) ʔuuḥẇałʔiš kʷaacsaċum ƛ̓amaasiƛ haaẇacsaċumʔi.

ʔu-L.ḥẇał=ʔiˑš kʷaacsaċum ƛ̓amaasiƛ haaẇacsaċum=ʔiˑ

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

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

(147) *ʔuuḥẇałʔiš ƛ̓amaasiƛ kʷaacsaċum haaẇacsaċumʔi.

ʔu-L.ḥẇał=ʔiˑš ƛ̓amaasiƛ kʷaacsaċum haaẇacsaċum=ʔiˑ

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

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

Also, more than one type of serialization can cooccur in a clause. (148) is an example of Type IV (separable action) serialization and Type III (adposition-like) serialization in a single clause. As in English,

it is not obvious from the sentence alone whether the adposition is scoping over both the previous verbs or just one.

(148) ƛ̓iptqšiʔi hiniic muč̓ičtup ʔuuʔatup ʔumʔi.

ƛ̓iptq-šiƛ̕-ɬiˑ 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? I will leave aside possessor raising when answering this question, as it was easier to get examples of the causative and passive.

All serialization strategies may have the causative attach to and affect the valence of one verb and not the other, as shown in (149) (Type I), where the causative only affects the semantics of the verb *ca* 'go' and not to the verb *ƛ̓ičiƛ̕* 'shoot'. The same kind of construction occurs with *wałaaḵ̓ap* 'make go' in (150). In these examples, the causative is *not* in the clausal second position complex, but appears lower down on the verb whose valency it modifies.

(149) ʔaḥʔaaʔaƛ̕na ƛ̓ičiƛ̕ ʔucaap ḥaa hupałʔi.

ʔaḥʔaaʔaƛ̕=naˑ ƛ̓i-čiƛ̕ ʔu-ca=ɬap ḥaa hupał=ʔiˑ

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

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

(150) hiniiċi qałaatikukʔitqak qicuwił wałaaƙap.

hina-iic=!iˑ	qałaatik=uk=ʔiˑtqak	qicuwił	wałaak=!ap
EMPTY-carry=CMMD.2SG	youngest.sibling=POSS=DEFN.2SG	school	go=CAUS

'Take your younger brother to school.' (**B**, Bob Mundy)

I attempted to get interpretations from speakers where one causative was interpreted on two verbs in a serial verb construction and was unsuccessful. It is possible that I did not find the right context, but I now believe that in SVCs the causative morpheme scopes narrowly over the verb it attaches to. I have already shown an example where a causative morpheme applies to the first verb in a sequence, but not the second (141), which is repeated in (151) below for convenience. It is also the case that when both verbs have a causative interpretation, speakers will use the causative on both verbs (153).

(151) cassaaps ʕiniiƛ čax^{w}aciis.

cas-saˑp=s	ʕiniiƛ	čax^{w}ac-iis
chase-MO.CAUS=STRG.1SG	dog	bucket-hold.DR

'I chased the dog, (I) carrying the bucket.' (**C**, *tupaat* Julia Lucas)

(152) ʔuuwaʔaƛquuk čiṗatmił[7] hašaḥsapsuuk ƙašsaap.

ʔu-L.waƛ=!aƛ=quuk	čiṗatmił	hašaḥ-saˑp=suuk	ƙaš-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)

(153) haptsaapint ʔucaap hiłaayiłk^{w}.

hapt-saˑp=int	ʔu-ca=!ap	hił-aayił=uk
hide-MO.CAUS=PST	X-go=CAUS	be.at-above=POSS

'She hid them on her roof.' (**Q**, Sophie Billy)

---

[7]The normal word for a seaserpent scale is čipałmis (see Sapir & Swadesh 1939 p. 281). However, Julia Lucas insists that for her it is čiṗatmił.

I have already given an example where the passive scopes over both verbs in an SVC while appearing singly, in (137). However this was a case where the passive morpheme is being used to indicate generic action ("what one does") as a command. This is not a valence changing operation. When the passive morpheme is used to change valence properties, the pattern is identical to the causative and it appears to scope narrowly over the verb in a SVC, as in (154[8], **??**).

(154) 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)

(155) čimqstuƛitaḥ nanaʔiičiʔat.

čimqstuƛ=(m)it=(m)aˑḥ nanaʔiičiƛ=!at

be.happy.MO=PST=REAL.1SG understand.MO=PASS

'I was happy being understood.' (**B**, Bob Mundy)

Causative and passive morphemes in SVCs scope narrowly over the verb they modify. This contradicts an earlier observation that these morphemes are in the clausal second position (§3.1.3). That earlier claim is dependent on the observation that these clitic elements move to adverbs that precede the main predicate. My modified analysis based on evidence from serial verb constructions is that the serial verb constructions (as here defined) coordinate clauses that contain everything except subject, tense, mood and related information. The coordinated elements may be small clauses themselves that contain valence-modifying morphology. In an SVC, enclitics like the causative and passive only modify their particular coordinated clause, and not the entire structure.[9] This concept of a small clause containing everything except subject and mood information will come up again in §5.

[8]In (154) the passive also appears on the clefting copula *ʔuḥ*. Voice agreement is a required feature of clefts.

[9]The enclitic that occurs in-between the causative and passive in the rigid clitic ordering is *=!aƛ* 'now', and is one of the elements that was listed as "copying" to predicates across a clause. It is possible then that there is evidence here to suggest that the attachment properties of the early clitics, causative *=!ap*, 'now' *=!aƛ*, passive *=!at*, and maybe possessive *=uk* all have different scoping properties from the later clitics. This hypothesis would require further investigation.

4.2.3 Summary

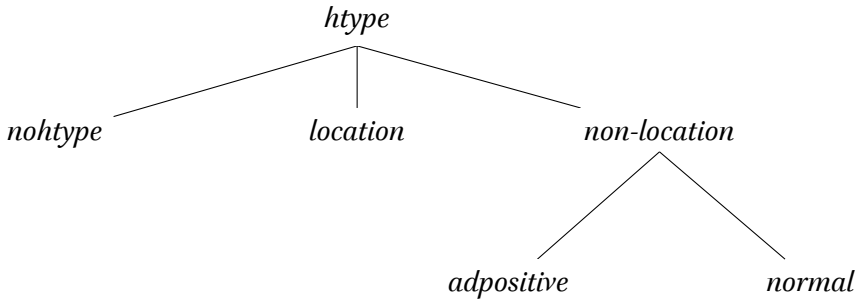
I have used a particular definition of serial verb constructions (SVCs) in Nuuchahnulth that attempts to capture a family of phenomena while making the minimum number of assumptions: Any clause that contains two verbs without a coordinator, and where one verb is not clearly subordinating the other, is a serial verb construction. I have further broken this construction type into four subtypes: (I) simultaneous SVC, (II) location SVC, (III) adposition-like SVC, (IV) separable or sequential SVC. Type I historically requires aspectual agreement of the verbs involved, although this requirement appears to have loosened for modern speakers. Types II–IV do not require aspectual agreement. Type II requires that locations occur as the first element. Types I-III allow for a verb to be separated from its object (e.g., Verb1 Verb2 Verb1-Obj), while type IV disallows this kind of verb-object separation. Causative and passive morphology narrowly affect the verb in the SVC that they attach to. Together with the fact that this morphology will attach to preceding adverbs, I take this as evidence that there exist syntactic phrases intermediate between the verb phrase and a fully inflected clause. This intermediate element is a clause that lacks subject and mood, and it is the type of phrase that is coordinated in SVCs. I now turn to the analysis of this data.

4.3 HPSG Analysis and Implementation

4.3.1 Defining verb types

The SVCs are sensitive to three verb types: locative verbs, adposition-like verbs, and others. To keep track of this, I introduce a HEAD feature HTYPE. Every type of verb defines its HTYPE to be either *locative*, *adpositive*, *normal*, or *nohtype* (for non-verbs). These are arranged into a type hierarchy as in Fig. 4.1. This schema allows location verbs to be distinguished from non-location verbs, which will be useful when addressing the collapse of the requirement for perfectivity matching described in §4.2.1.1.

Figure 4.1: HTYPE hierarchy



In order for HTYPE to be useful, it must also be inherited by second position elements from their predicate. To this end, I add to the definition of *2P-LEX-ITEM*, last seen in (54) in §3.2.2. I only show the added the component pertaining to the HTYPE in (156) below.

(156)
$$\left[\begin{array}{l} \textit{2P-LEX-ITEM} \\ \textsc{synsem.local.cat} \left[\begin{array}{ll} \textsc{head.htype} & \boxed{1} \\ \textsc{val.comps} & \left\langle \left[\textsc{local.cat} \left[\begin{array}{ll} \textsc{head.htype} & \boxed{1} \\ \textsc{val.comps} & \boxed{2} \end{array}\right]\right] \right\rangle \oplus \boxed{2} \end{array}\right] \end{array}\right]$$

As a result of this, all phrases headed by a verb, and all phrases headed by a second position element that has a verb (or an adverb modifying a verb) as its complement will end up with the HTYPE of that verb, and be eligible for coordination with the appropriate SVC type.

4.3.2 Valence operations and scope

The second position enclitic complex hosts the second position elements in the basic clause (§3.1.3). But evidence from serial verb constructions shows that the valence changing causative and passive clitics scope only over a single verb (§4.2.2), unlike the subject clitics which scope over all coordinated verbs (§4.1).

The valence enclitics as defined in §3.2.2 scope only over the first predicate that the second position enclitics modify. This is the correct analysis, but it is not yet able to account for valence operations on the second (or later) verb(s) in a SVC. In order to allow other verbs to take valence-changing morphology, I add homophonous versions of the causative and passive that apply without depending on a subject enclitic to attach to. These versions of this morphology need to not be able to head a sentence.

I accomplish this using a null morpheme trick very similar to that described for the third person neutral mood in §3.2.2, which was accounted for in the DELPH-IN morphophonology as a null morpheme *=0* that was erased when additional morphology attached to it. I need the same sort of phonologically null root that accepts only causative and passive morphology, and does not create an element that is considered a second position auxiliary, which are the heads of sentences. The lexical entry for this zero morpheme looks like (157).

(157)
$$\left[\begin{array}{ll}
\textit{SVC-ZERO-MORPHEME} & \\
\textsc{synsem.local.cat} & \left[\begin{array}{ll}
\textsc{head} & \left[\begin{array}{ll}
\textsc{mod} & \langle\rangle \\
\textsc{form} & \text{non-root-nonfinite} \\
\textsc{aux} & + \\
\textsc{prd} & +
\end{array}\right] \\
\textsc{val} & \left[\begin{array}{ll}
\textsc{subj} & \left\langle \boxed{1}\left[\textsc{local.cat.head.prd} \quad -\right]\right\rangle \\
\textsc{comps} & \left\langle \left[\begin{array}{ll}
\textsc{opt} & - \\
\textsc{local.cat} & \left[\begin{array}{ll}
\textsc{head.prd} & + \\
\textsc{val} & \left[\begin{array}{ll}
\textsc{subj} & \left\langle \boxed{1}\right\rangle \\
\textsc{comps} & \boxed{2}
\end{array}\right]
\end{array}\right]
\end{array}\right]\right\rangle \oplus \boxed{2}
\end{array}\right]
\end{array}\right] \\
\textsc{inflected.some-inflection} & -
\end{array}\right]$$

This lexical entry is very similar to the second position lexical entries, defined in (54) and (55). The differences are that this lexical entry is defined as not fully inflected, and its form is *nonfinite*. The nonfinite definition prevents phrases headed by this morpheme from forming clauses.

I define special versions of the causative and passive morphemes which are morphologically constrained to only attach to this zero morph. While the syntactic properties of these morphemes are identical to (and inherited from a common type with) the versions used in the main clause enclitic complex (§3.2.2), I require different morphological properties: These are suffixes rather than prefixes, and the other elements in the enclitic complex (including tense and subject information) cannot be generated here.[10] No additional work needs to be done in cases where verbs do not have valence-changing morphology attached, as these elements will enter into the SVC constructions as they are.

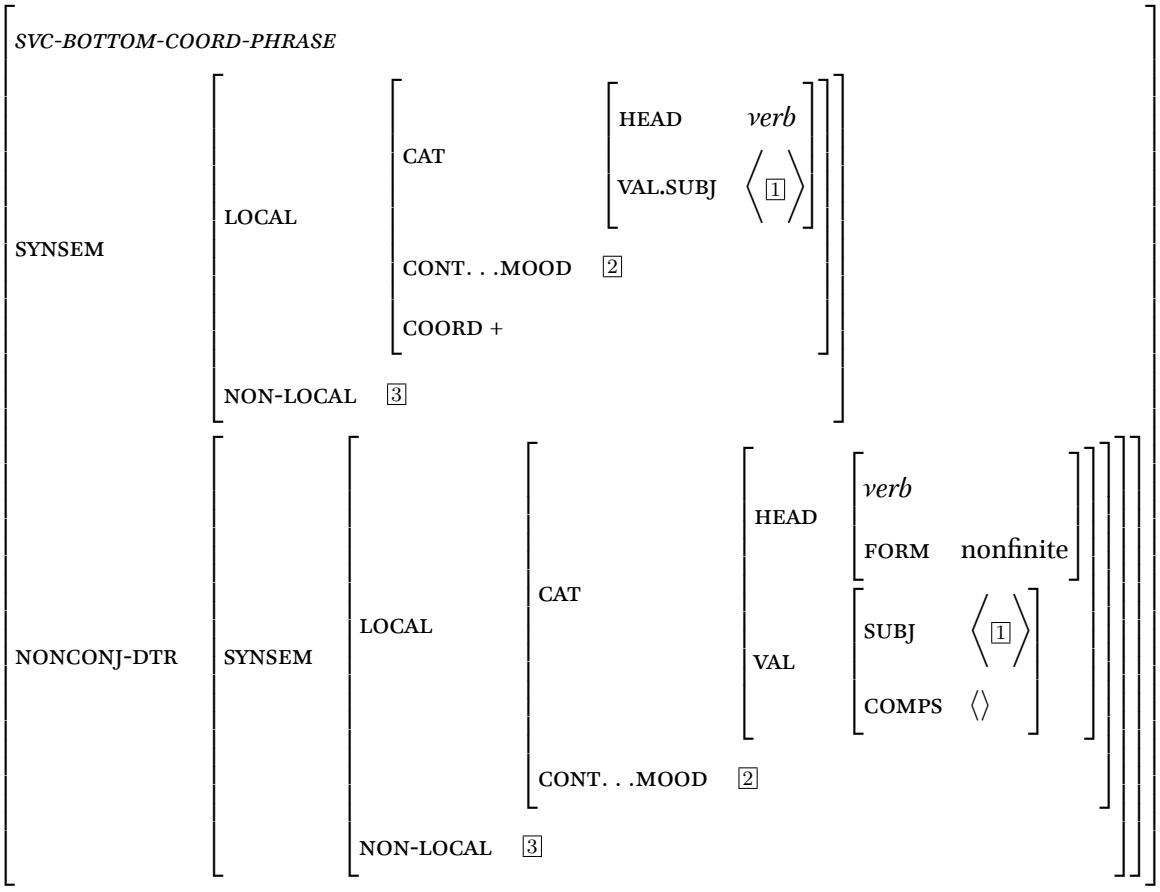
4.3.3 Coordination rules

The way that the Grammar Matrix models coordination is through binary branching in two to three parts (Drellishak & Bender 2005). First a bottom coordination rule which marks the "end" of the coordination, a middle coordination rule which combines the bottom coordinand with the coordinator (if there is one), and a top coordination rule that combines the coordinator (if there is one) with the top coordinand and marks the "start" of the coordination. In the case where there is no overt coordinator, there is only a bottom coordination rule and a top coordination rule. Since I am analyzing serial verb construction in Nuuchahnulth as a type of coordination and am using the same framework on which the Grammar Matrix is based, I use the same strategy as Drellishak & Bender for SVCs. There is no overt coordinator in these cases, so I only have bottom and top coordination rules.

All serial verb constructions inherit from the same two supertypes, a *SVC-BOTTOM-COORD-RULE* (158) and a *SVC-TOP-COORD-RULE* (159).

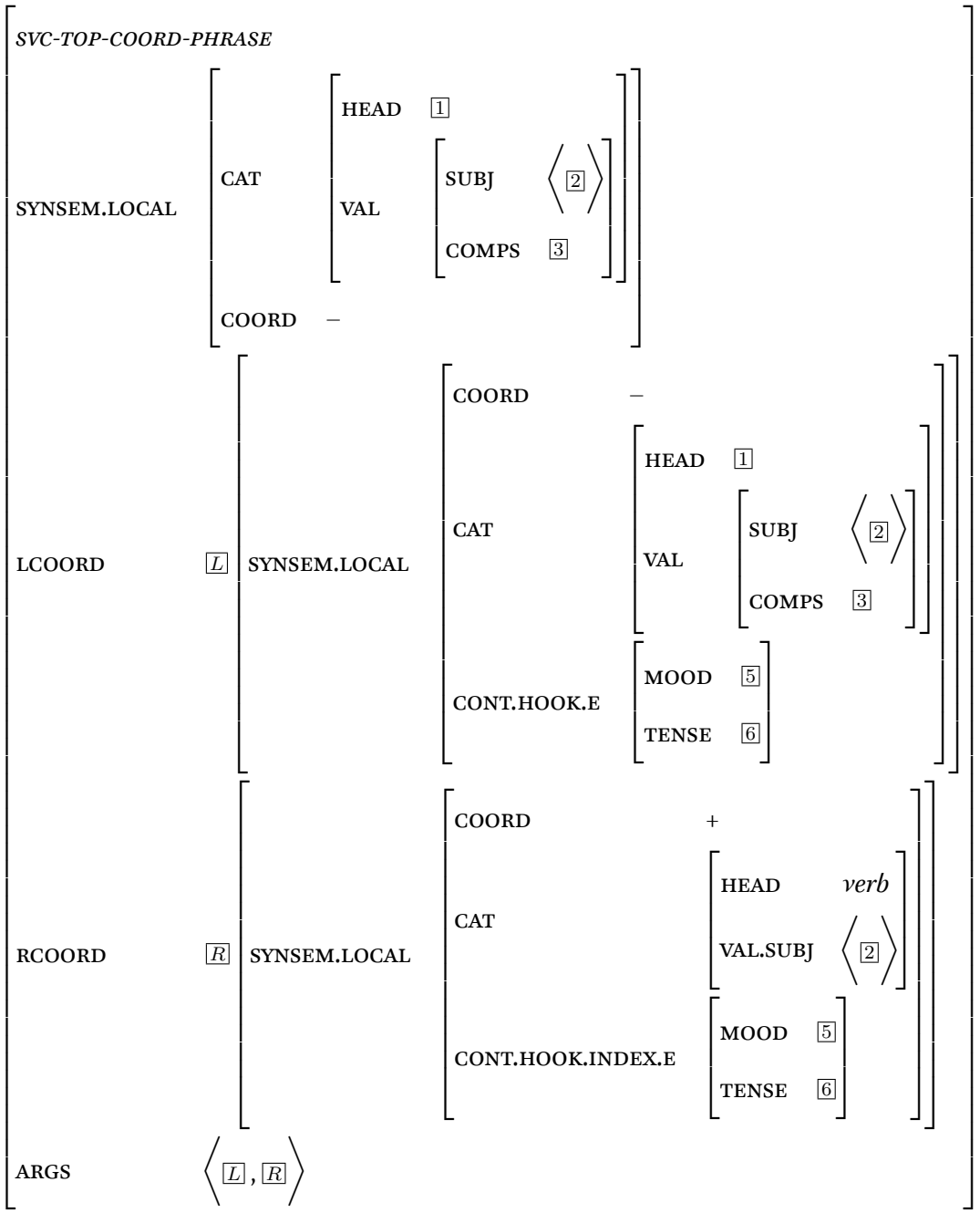
[10]There is room here for a more parsimonious analysis that treats all valence-altering enclitics as one category and clausal enclitics as another, thus avoiding the need for this lexical doubling. Such a reanalysis is beyond the scope of this work.

(158)



This rule creates a parent node that is part of a coordinated phrase [COORD +], and inherits its daughter's (a non-conjunction's) contentful subject, non-local, and mood information. It only applies to elements that have an empty complements list and are nonfinite, which excludes elements with finite second position morphology. I restrict the lower coordinand to always have an empty complements list because there are never cross-serial dependencies in SVCs (§4.2.1.5). Only the first coordinand can have its complement realized after coordination, but the second must have its complements satisfied in-situ. This coordination can then be discharged through the *SVC-TOP-COORD-RULE* (159).

(159)



This rule coordinates two arguments, a left coordinand (LCOORD) and a right coordinand (RCOORD). The right coordinand must be [COORD +] (created through an application of a bottom-coord-rule). The mood and tense properties of both coordinated elements are identified with each other, as are their subjects. The parent node inherits its HEAD properties and its COMPS list from the leftmost element in

the coordination.

From these supertypes I then define specific types that inherit from them for each of the four serial verb constructions (§4.2). I turn now to these specific constructions, their rule definitions, and example trees.

4.3.3.1 Type I: Simultaneity

I gave evidence that Type I SVCs have historically required perfectivity matching (§4.2.1.1), but in the modern language that requirement has relaxed. I here present an analysis that assumes perfectivity matching is required. I will delay the revised analysis that no longer requires perfectivity matching requirement to the section addressing Type III (§4.3.3.3). Under an analysis where Type I SVCs no longer require verbs to match in perfectivity, the distinction between Type I and Type III collapses and they can be accounted for with a single coordination strategy.

Because coordination is structured in two halves—a bottom coordination rule and a top coordination rule—I need two sets of rules, one set which requires perfective aspects and one set which requires imperfective aspects. All the rules in (160–163) inherit from *SVC-TOP-COORD-RULE* (158) or *SVC-TOP-COORD-RULE* (159) as appropriate.

(160)
$$\begin{bmatrix} \textit{SVC1-PERF-BOTTOM-COORD-RULE} & \\ \textsc{synsem.local} & \begin{bmatrix} \textsc{coord-rel.pred} & \textsc{meanwhile} \\ \textsc{coord-strat} & \text{“1-perf”} \\ \textsc{cont.hook.index.e.aspect} & \text{perfective} \end{bmatrix} \\ \textsc{nonconj-dtr...htype} & \text{normal} \end{bmatrix}$$

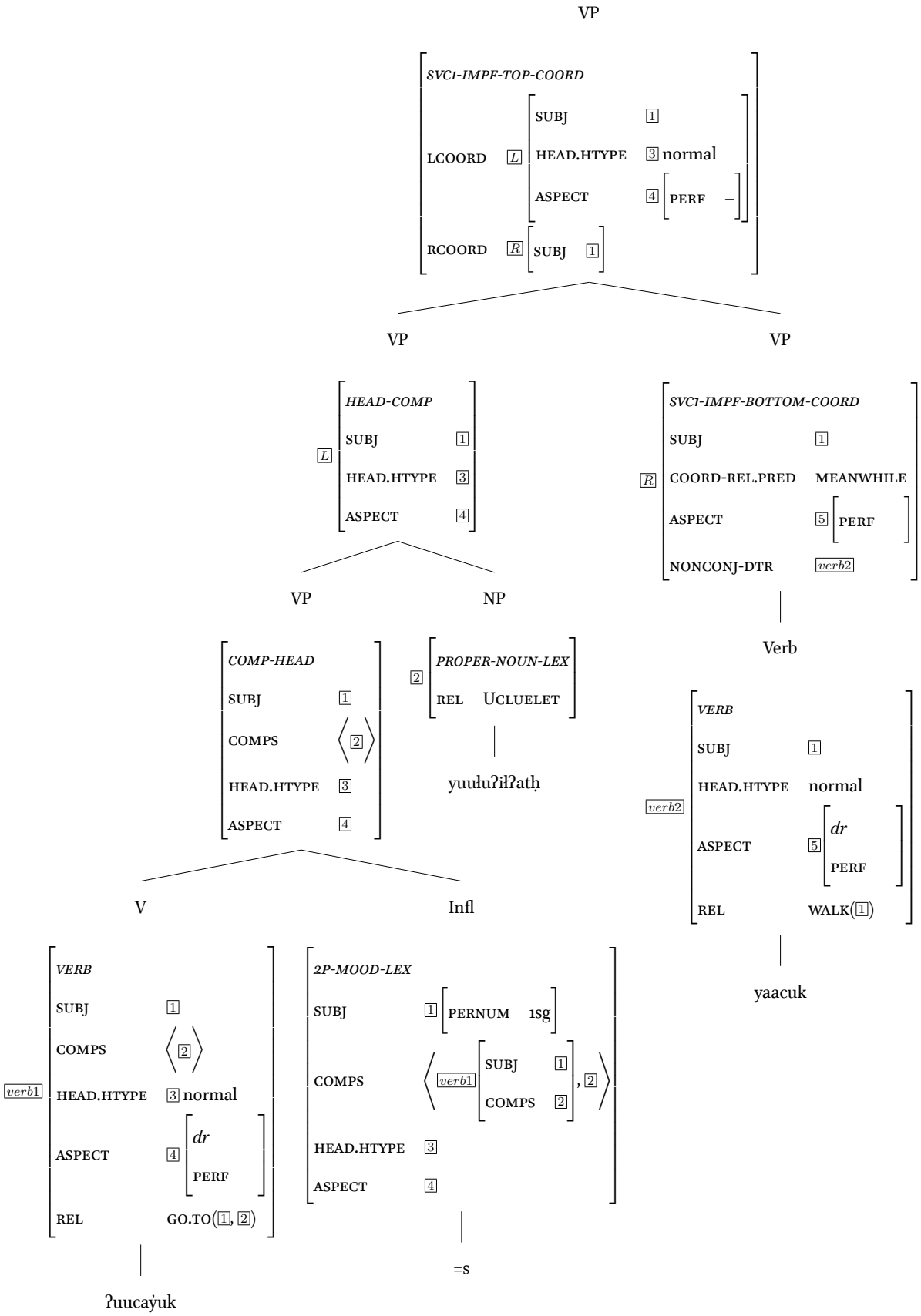
(161)
$$\begin{bmatrix} \textit{SVC1-PERF-TOP-COORD-RULE} & \\ \textsc{synsem.local.coord-strat} & \text{“1-perf”} \\ \textsc{lcoord-dtr...index.e.aspect} & \text{perfective} \end{bmatrix}$$

(162)
$$\begin{bmatrix} \textit{SVC1-IMPF-BOTTOM-COORD-RULE} & \\ \text{SYNSEM.LOCAL} & \begin{bmatrix} \text{COORD-REL.PRED} & \text{MEANWHILE} \\ \text{COORD-STRAT} & \text{“1-impf”} \\ \text{CONT.HOOK.INDEX.E.ASPECT} & \text{imperfective} \end{bmatrix} \\ \text{NONCONJ-DTR. . .HTYPE} & \text{normal} \end{bmatrix}$$

(163)
$$\begin{bmatrix} \textit{SVC1-PERF-TOP-COORD-RULE} & \\ \text{SYNSEM.LOCAL.COORD-STRAT} & \text{“1-impf”} \\ \text{LCOORD-DTR. . .INDEX.E.ASPECT} & \text{imperfective} \end{bmatrix}$$

The bottom-coord rules introduce the semantic component (MEANWHILE), and both rules define a string COORD-STRAT, which is used to keep track of which coordination strategy is being used. This is so that different coordination strategies cannot combine (Drellishak & Bender 2005), e.g. a the perfective bottom coordination rule should not be able to feed the imperfective top coordination rule. (164) below shows a heavily simplified parse tree for the Type I SVC (97).

(164)


VP
SVC1-IMPF-TOP-COORD
LCOORD L SUBJ 1
HEAD.HTYPE 3 normal
ASPECT 4 PERF –
RCOORD R SUBJ 1
VP
VP
L HEAD-COMP
SUBJ 1
HEAD.HTYPE 3
ASPECT 4
R SVC1-IMPF-BOTTOM-COORD
SUBJ 1
COORD-REL.PRED MEANWHILE
ASPECT 5 PERF –
NONCONJ-DTR verb2
VP
NP
Verb
COMP-HEAD
SUBJ 1
COMPS ⟨ 2 ⟩
HEAD.HTYPE 3
ASPECT 4
2 PROPER-NOUN-LEX
REL UCLUELET
yuułuʔiɬʔatḥ
VERB
SUBJ 1
HEAD.HTYPE normal
verb2 ASPECT 5 dr
PERF –
REL WALK(1)
V
Infl
yaacuk
VERB
SUBJ 1
COMPS ⟨ 2 ⟩
verb1 HEAD.HTYPE 3 normal
ASPECT 4 dr
PERF –
REL GO.TO(1, 2)
2P-MOOD-LEX
SUBJ 1 PERNUM 1sg
COMPS ⟨ verb1 SUBJ 1 COMPS 2 , 2 ⟩
HEAD.HTYPE 3
ASPECT 4
ʔuucaẏuk
=s

4.3.3.2 Type II: Location and Action

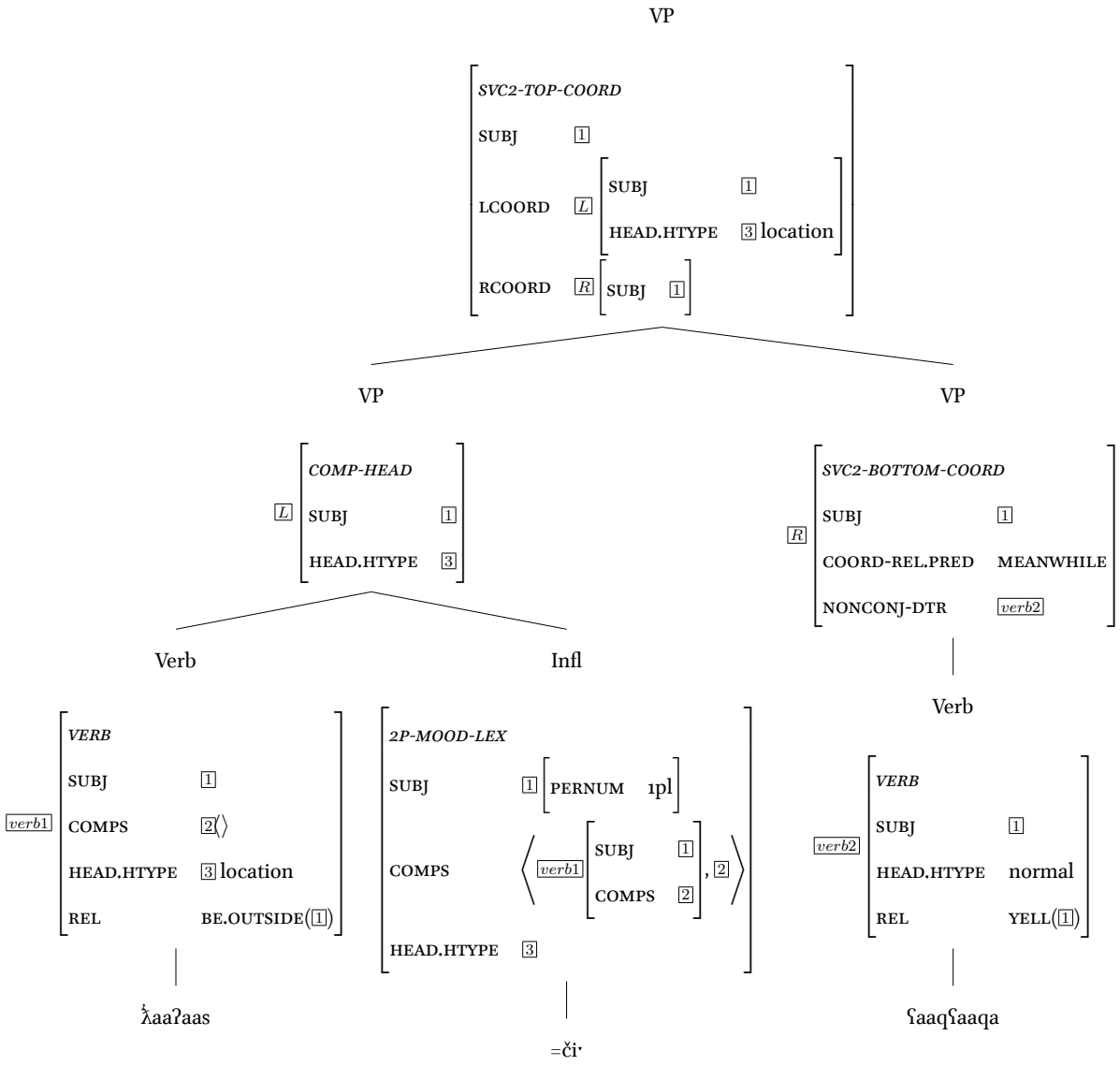
Type II SVCs include location words, which must be the first word in the construction (§4.2.1.2). Only imperfective location words have this constraint. Since location words are generally suppletative between perfective and imperfective forms, in my lexicon I define imperfective forms as HTYPE *location* and perfective forms as HTYPE *normal*. Finally, to constrain ordering in SVCs, the top coordination rule for Type II SVCs is the only top coordination rule that unifies with HTYPE *location*, and the bottom coordination rule allows verbs of any type, thus requiring imperfective locations to occur first in all SVCs.

(165)
$$\begin{bmatrix} \textit{SVC2-BOTTOM-COORD-RULE} & \\ \text{SYNSEM.LOCAL} & \begin{bmatrix} \text{COORD-REL.PRED} & \text{MEANWHILE} \\ \text{COORD-STRAT} & \text{“2”} \end{bmatrix} \end{bmatrix}$$

(166)
$$\begin{bmatrix} \textit{SVC2-BOTTOM-COORD-RULE} & \\ \text{SYNSEM.LOCAL} & \begin{bmatrix} \text{COORD-STRAT} & \text{“2”} \\ \text{CAT.HEAD.HTYPE} & \text{location} \end{bmatrix} \end{bmatrix}$$

A simple example of this coordination structure is shown in (167), which is a tree structure for sentence (116).

(167)



4.3.3.3 Type III SVCs: Adposition-like verbs

Type III SVCs describe the coordination of adposition-like verbs (§4.2.1.3). The only distinction between Type I and Type III SVCs is that Type III permits perfectivity mismatching. On the analysis that Type I SVCs require matching perfectivity between the two verbs, then Type III SVCs need their own coordination structure. As with the analysis for Type I (§4.3.3.1), I will need two strategies for this: one where the adposition-like verb is the first in the SVC (168, 169), and one where it is the second (170, 171).

(168)
$$\begin{bmatrix} \textit{SVC3-V1-BOTTOM-COORD-RULE} & \\ \text{SYNSEM.LOCAL} & \begin{bmatrix} \text{COORD-REL.PRED} & \text{MEANWHILE} \\ \text{COORD-STRAT} & \text{“3.1”} \end{bmatrix} \\ \text{NONCONJ-DTR. . .HTYPE} & \text{normal} \end{bmatrix}$$

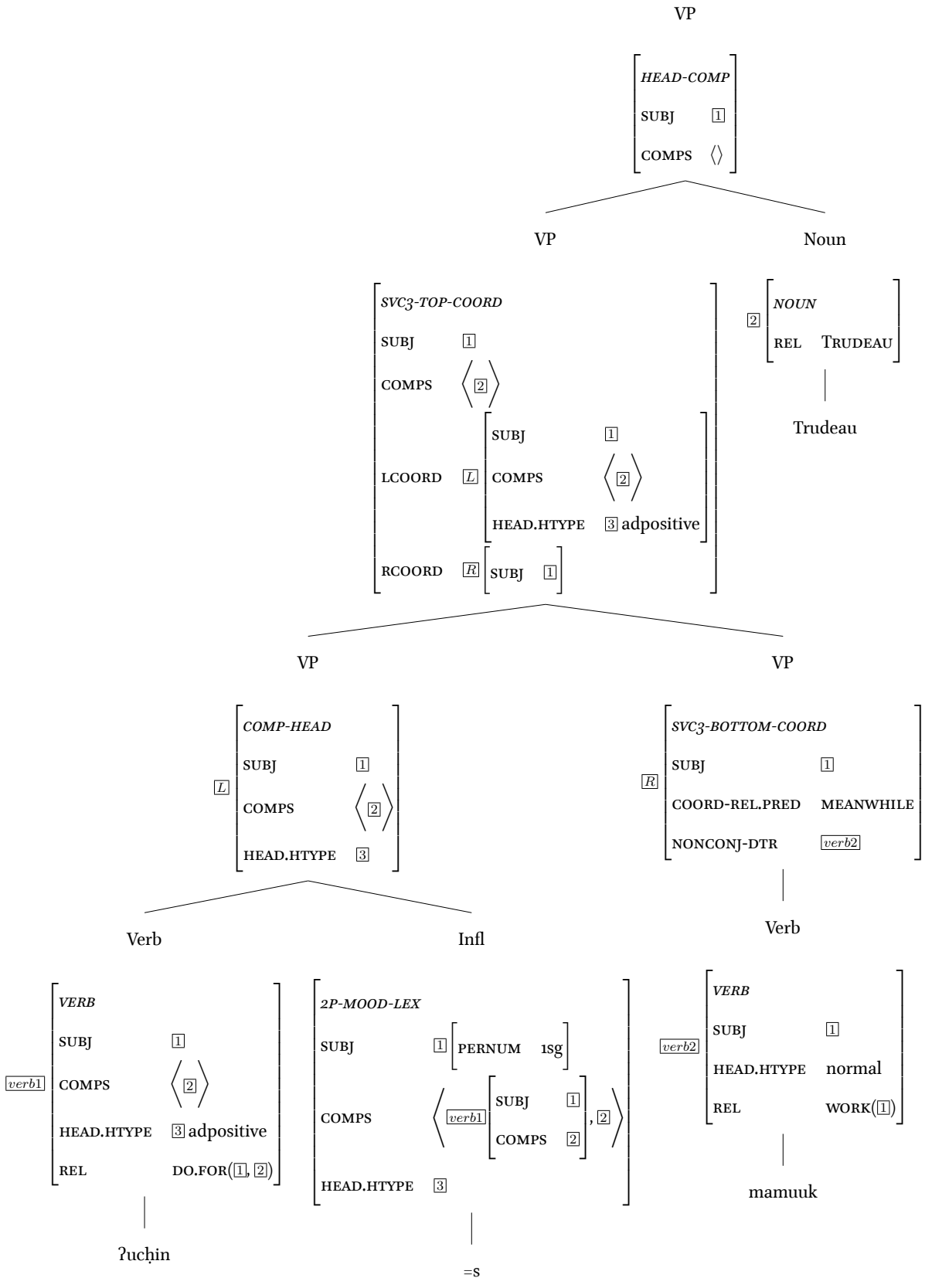
(169)
$$\begin{bmatrix} \textit{SVC3-V1-BOTTOM-COORD-RULE} & \\ \text{SYNSEM.LOCAL} & \begin{bmatrix} \text{COORD-STRAT} & \text{“3.1”} \\ \text{CAT.HEAD.HTYPE} & \text{adpositive} \end{bmatrix} \end{bmatrix}$$

(170)
$$\begin{bmatrix} \textit{SVC3-V2-BOTTOM-COORD-RULE} & \\ \text{SYNSEM.LOCAL} & \begin{bmatrix} \text{COORD-REL.PRED} & \text{MEANWHILE} \\ \text{COORD-STRAT} & \text{“3.2”} \end{bmatrix} \\ \text{NONCONJ-DTR. . .HTYPE} & \text{adpositive} \end{bmatrix}$$

(171)
$$\begin{bmatrix} \textit{SVC3-V2-BOTTOM-COORD-RULE} & \\ \text{SYNSEM.LOCAL} & \begin{bmatrix} \text{COORD-STRAT} & \text{“3.2”} \\ \text{CAT.HEAD.HTYPE} & \text{non-location} \end{bmatrix} \end{bmatrix}$$

The first pair of coordination rules (168, 169) require one adposition-like and one normal (i.e., non-locative) verb. The second pair (170, 171) require one adposition-like and one non-location verb. This asymmetry is so that a sentence that has two adposition-like verbs can only go through second version, preventing unnecessary parse ambiguity. An example tree of this kind of serial verb is given in (172), which is a tree structure for (125).

(172)


VP
HEAD-COMP
SUBJ 1
COMPS ⟨⟩
VP
Noun
SVC3-TOP-COORD
SUBJ 1
COMPS ⟨2⟩
LCOORD L
SUBJ 1
COMPS ⟨2⟩
HEAD.HTYPE 3 adpositive
RCOORD R
SUBJ 1
2
NOUN
REL TRUDEAU
Trudeau
VP
VP
L
COMP-HEAD
SUBJ 1
COMPS ⟨2⟩
HEAD.HTYPE 3
R
SVC3-BOTTOM-COORD
SUBJ 1
COORD-REL.PRED MEANWHILE
NONCONJ-DTR verb2
Verb
Infl
Verb
verb1
VERB
SUBJ 1
COMPS ⟨2⟩
HEAD.HTYPE 3 adpositive
REL DO.FOR(1, 2)
ʔucḥin
2P-MOOD-LEX
SUBJ 1 PERNUM 1sg
COMPS ⟨verb1 SUBJ 1 COMPS 2, 2⟩
HEAD.HTYPE 3
=s
verb2
VERB
SUBJ 1
HEAD.HTYPE normal
REL WORK(1)
mamuuk

If the perfectivity requirement on Type I SVCs is relaxed, as seems to be the case in the modern language (§4.3.3.1), then Type I and Type III SVCs can be modeled in the same manner: The coordination of any two non-locative verbs. The coordination rules for this analysis are given in (173, 174) below.

(173)
$$\left[\begin{array}{ll} \textit{SVC3-V1-BOTTOM-COORD-RULE} & \\ \textsc{synsem.local} & \left[\begin{array}{ll} \textsc{coord-rel.pred} & \textsc{meanwhile} \\ \textsc{coord-strat} & \text{“1+3”} \end{array}\right] \\ \textsc{nonconj-dtr}\ldots\textsc{htype} & \text{non-location} \end{array}\right]$$

(174)
$$\left[\begin{array}{ll} \textit{SVC3-V1-BOTTOM-COORD-RULE} & \\ \textsc{synsem.local} & \left[\begin{array}{ll} \textsc{coord-strat} & \text{“1+3”} \\ \textsc{cat.head.htype} & \text{non-location} \end{array}\right] \end{array}\right]$$

4.3.3.4 Type IV SVCs: Sequential action

Type IV SVCs (§4.2.1.4) differ from Types I–III in only two ways:

1. These SVCs add a requirement that each coordinated verb phrase must have a satisfied complements list, to avoid the complement splitting (Verb1 VP2 Verb1-object) that the other SVCs allow. The other SVCs only require that the bottom coordination rule have an empty comps list (158).

2. The semantics of Type IV SVCs do not require that the two verbs describe simultaneous action, and they can possibly describe sequential action. I model this by changing the elementary predication from MEANWHILE to AND.

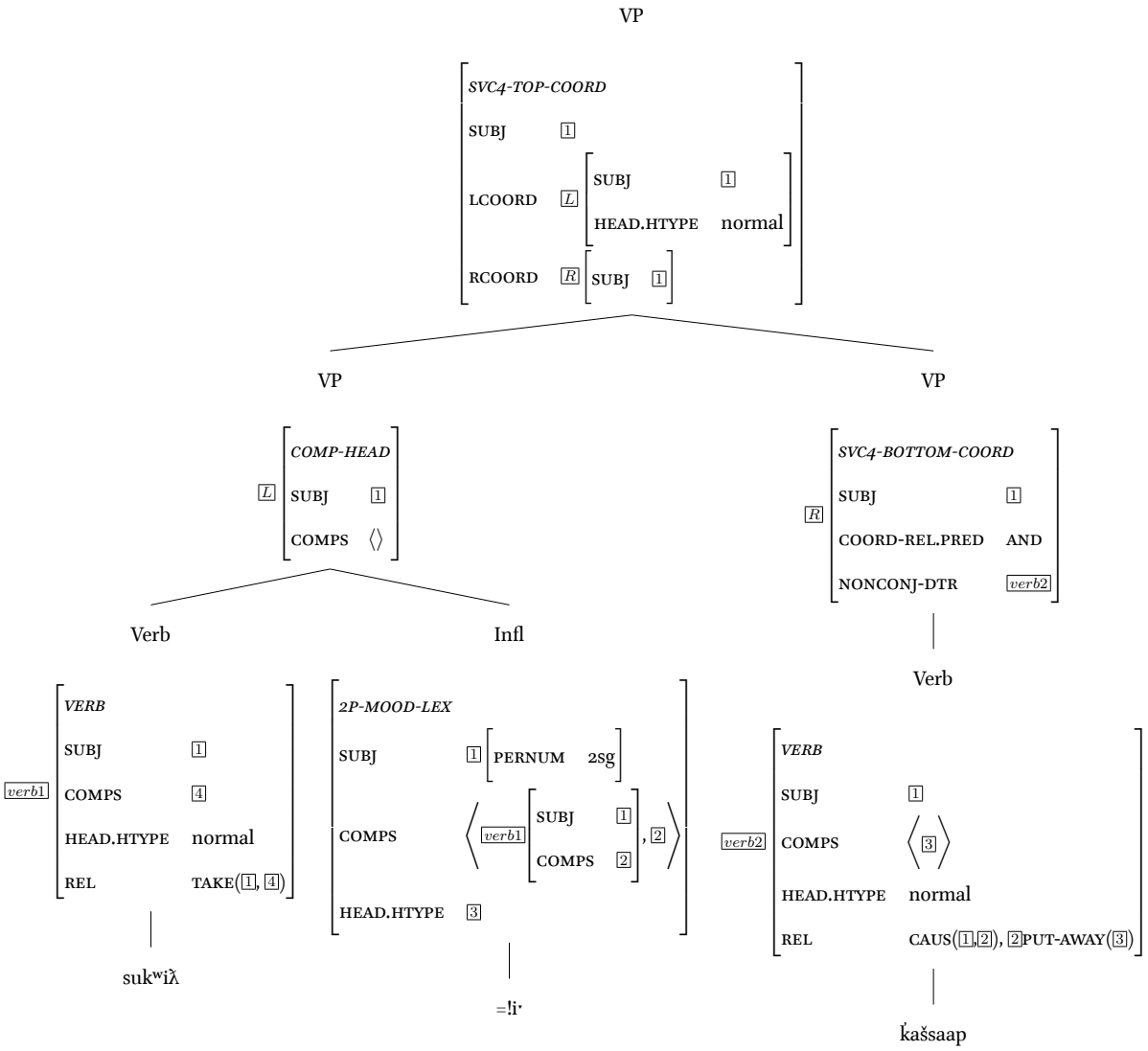
The coordination rules that capture these differences are given below.

(175)
$$\begin{bmatrix} \textit{SVC4-BOTTOM-COORD-RULE} & \\ \textsc{synsem.local} & \begin{bmatrix} \textsc{coord-rel.pred} & \textsc{and} \\ \textsc{coord-strat} & \text{“4”} \end{bmatrix} \\ \textsc{nonconj-dtr}\ldots\textsc{htype} & \text{normal} \end{bmatrix}$$

(176)
$$\begin{bmatrix} \textit{SVC4-BOTTOM-COORD-RULE} & & \\ \textsc{synsem.local} & \begin{bmatrix} \textsc{coord-strat} & \text{“4”} & \\ \textsc{cat} & \begin{bmatrix} \textsc{val.comps} & \langle\rangle \\ \textsc{head.htype} & \text{normal} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

(177) shows a tree structure for the Type IV SVC in sentence (132). I have omitted complement-dropping rules for brevity.

(177)



4.3.4 Summary

To distinguish different serial verb constructions (SVCs) from each other, I define a HEAD feature, HTYPE, which can take on the values *location*, *adpositive*, *normal*, or *nohtype* (§4.3.1). SVCs of different varieties require verbs with different HTYPEs.

I also define homophonous versions of the valence-changing causative enclitic *=!ap* and the passive enclitic *=!at* that add causative and passive semantics but do not make a finite verb in the same way as the typical clausal enclitics. This allows valence changing morphology to act separately on different

verbs in SVCs (4.3.2).

I model the four serial verb constructions (SVCs) in Nuuchahnulth as coordination processes that lack an overt coordinator (§4.3.3). Each coordination structure requires two rules, one which begins the coordination (a bottom-coord-rule) and one which ends it (a top-coord-rule). SVCs that have disjunctive properties (such as perfective *or* imperfective, or adposition-like verb first or adposition-like verb second) require two sets of rules to model. In the case where perfectivity matching is no longer a requirement for Type I SVCs, as seems to be the case for many Nuuchahnulth variants today, Type I and Type III SVCs can be modeled as the same type of coordination, where any two *non-locative* verbs are coordinated.

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 chapter I will examine how this construction behaves, and how it differs from serialization (5.1), how the linker can be applied to answer questions about syntactic categories in Nuuchahnulth (5.2), and finally how I analyze it within the HPSG framework (5.3).

5.1 Data

In this section I will present the data I have collected on the linker morpheme and how the construction is used. As with serial verbs, I will 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, within the syntactic domain of the second position clitics. I will first compare the linker coordination strategy to others (5.1.1), then examine the morphological attachment properties of this special coordinator (§5.1.2), and finally look at its syntactic properties (§5.1.3–5.1.8).

5.1.1 Comparison with other coordination

The linker morpheme is not the only form of coordination in Nuuchahnulth. The two words associated 'and' coordination are done *ʔaḥʔaaʔaƛ*, which coordinates sentences and VPs, and *ʔuḥʔi(i)š*, which coordinates participants.

Much like English *and*, the *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.

When introducing a sentence, *ʔaḥʔaaʔaƛ* can host the clausal clitics (178, 179) or the clitics can be deferred to the following predicate (180).

(178) ʔaḥʔaaʔaƛitweʔinʔaała wiinapi haʔukẇiɬasin waaʔat, naẏiiʔakaƛquuč ɬiqsčiił haʔumʔi.

ʔaḥʔaaʔaƛ=(m)it=weˑʔin=ʔaała wiinapi haʔuk-ẇiɬas=(m)in waa=!at naẏiiʔak=!aƛ=quu=č
and=PST=HRSY.3=HABIT hold.still.DR eat-going.to=STRG.1PL say=PASS immediately=NOW=PSSB.3=HRSY

ɬiq-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)

(179) ʔaḥʔaaʔaƛsa huʔaas ṅaacsiičiƛ naani.

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

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

(180) ʔaḥʔaaʔaƛ ʔukʷičaṗaƛsuuk ʔiiḥ ciyapuxs.

ʔaḥʔaaʔaƛ ʔu-kʷič=!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* coordinate two VPs, which share the semantics of the subject-mood clitic (181, 182).

(181) 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)

(182) ʔaƛa čaakupiiḥ čaaniʔišʔaałʔał ɬaaqyiił ʔaḥʔaaʔaƛ ʕapkšiƛ ʔuukʷił.

ʔaƛa čakup-L.iiḥ čaani=ʔi·š=ʔaał=ʔał ɬaaqyiił 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 (183).

(183) 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 (184).

(184) 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 (185).

(185) ʔuḥintʔinɬ ʔukʷiiɬ ṅuẇiiqsknaqs ʔuuḥẇaɬ ḥumiis ʔuḥʔiiš ċistuup.

ʔuḥ=int=ʔinɬ ʔu-(č)iiɬ ṅuẇiiqsu=ʔak=naqs ʔu-L.ḥẇaɬ ḥumiis ʔuḥʔiiš ċis-(š)tuˑp

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. I will end up arguing that the linker coordinates a different syntactic category: predicate phrases (5.1.7), which is a category that includes VPs but is not identical to it.

There is also another coordinating suffix *-L.ṕičḥ*, which is translated as 'doing while . . .-ing' in Sapir & Swadesh (1939). It generally attaches only to verbs, and its attachment properties are highly lexicalized. For instance, all speakers I worked with recognized the word *ʕiiḥṕičḥ*, as in (186).

(186) ʕiiḥṕičḥweʔin Bob mamuuk.

ʕiḥ-L.ṕičḥ=weˑʔin Bob mamuuk

cry-while=HRSY.3 Bob work

'Bob was crying while working.'[1] (**B**, Marjorie Touchie)

The attachment properties of *-L.ṕičḥ* are fairly unpredictable. *ʕiiḥṕičḥ* shows a case where the suffix attaches to a bare root (ʕiḥ-), and it is ungrammatical for it to attach to inflected *ʕiḥšiƛ̓* (187). Speakers accepted the bare root *nuuk-* combining with *-L.ṕičḥ* to form *nuukṕičḥ* as well (188). However, at least for my consultant Julia Lucas, the inflected form *nunuuk* was acceptable as well (188).

[1]Bob was not actually crying. This was an example sentence Marj used, and was a joke.

(187) *ʕiḥšiƛṕičḥweʔin Bob mamuuk.

ʕiḥ-šiƛ-L.ṕičḥ=weˑʔin Bob mamuuk

cry-MO-while=HRSY.3 Bob work

Intended: 'Bob was crying while working.'[2] (**B**, Marjorie Touchie)

(188) nuukṕičḥ tuuxtuuxʷa waaʕatʔis.

nuuk-L.ṕičḥ tuxʷ-LR2L.a waaʕit=ʔis

sing-while jump-RP frog=DIM

'The little frogs are singing while they jump.' (**C**, *tupaat* Julia Lucas)

(189) nunuukṕičḥ tuuxtuuxʷa waaʕatʔis.

nunuuk-L.ṕičḥ tuxʷ-LR2L.a waaʕit=ʔis

sing.DR-while jump-RP frog=DIM

'The little frogs are singing while they jump.' (**C**, *tupaat* Julia Lucas)

This bound root/inflected stem alternation is not predictable. Marjorie Touchie volunteered *ẇaaʔakṕičḥ* (190), which Bob Mundy agreed to as well. Neither speaker accepted bare root **ẇaaṕičḥ*, although this is the version of the word that occurs in Sapir & Swadesh (1939). Fidelia Haiyupis (a Northern dialect speaker) rejected both forms.

(190) ẇaaʔakṕičḥʔaƛma ʔamawatuʔa quuquuʔaca.

ẇaa-ʔak-L.ṕičḥ=!aƛ=maˑ ʔamawatuʔa quuquuʔaca

shy-DR-while=NOW=REAL.3 Bob.Mundy speak.Nuuchahnulth

'Bob is shy to speak Nuuchahnulth.' (**B**, Marjorie Touchie)

There is no constraint on ordering for the word containing *-L.ṕičḥ*, as shown in (191, 192).

(191) wiikʕaƛ̓pičḥʔi haʔuk.

ẇik-ʕaƛ̓-L.p̓ičḥ=!iˑ haʔuk

NEG-make.a.sound.DR-while=CMMD.2SG eat.DR

'Eat quietly.' (**N**, Fidelia Haiyupis)

(192) haʔuk̓ʷi wiikʕaƛ̓pičḥ.

haʔuk=!iˑ ẇik-ʕaƛ̓-L.p̓ičḥ

eat.DR=CMMD.2SG NEG-make.a.sound.DR-while

'Eat quietly.' (**N**, Fidelia Haiyupis)

The ending *-L.p̓ičḥ* is also not fully productive. There are some words to which it simply does not attach, such as **ʔuʔiicp̓ičḥ* 'eat', **haʔukp̓ičḥ* or **haʔup̓ičḥ* 'eat.' All speakers rejected attempts to attach the ending to nouns, **quuʔasp̓ičḥ* 'while being a person', **qʷayaćiikp̓ičḥ* 'while being a wolf.'

The data around contemporary uses of *-L.p̓ičḥ* is complex and contradictory. In the grammar represented in the Nootka Texts (Sapir & Swadesh 1939) *-L.p̓ičḥ* appears to attach only to verbal roots. In the modern system, the morpheme occasionally attaches to non-roots (189, 186), but still does not attach to nouns. Which stems the morpheme attaches to are highly idiosyncratic and vary speaker-to-speaker, and likely dialect-to-dialect. *-L.p̓ičḥ* is, in sum, a highly lexicalized verbal affix. The linker, on the other hand, has a much greater degree of freedom in its sites of attachment (5.1.2), it is for most speakers completely productive, and the scope of its coordination goes beyond that of the word it attaches to (5.1.7).

5.1.2 Attachment properties

The linker shows considerable flexibility in the stems it attaches to, attaching to nouns (193), adjectives (194), verbs (195), and adverbs (196).

(193) łuucma**qḥ**itqaču̓aʔaał taakšiƛ̓ p̓iišmita.

łuucma-**(q)ḥ**=(m)it=qaˑču̓=ʔaał taakšiƛ̓ p̓iišmita

woman-**LINK**=PST=DUBV=HABIT always gossip.CV

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

(194) t̓ikʷaamitwaʔiš čims ḥaaʔak**qḥ**.

t̓ikʷ-(y)aˑ=mit=waˑʔiš čims ḥaaʔak-**(q)ḥ**

dig-CV=PST=HRSY.3 bear strong-**LINK**

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

(195) ciqinǩaƛ̓na ƛ̓iḥaa**qḥ**.

ciq-(č)ink=!aƛ̓=naˑ ƛ̓iḥ-(y)aˑ-**(q)ḥ**

speak-with=NOW=NEUT.1PL drive-DR-**LINK**

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

Context for (196): My friend is going bald. I'm also going bald but I don't look in the mirror much and haven't noticed.[3]

(196) ẏuuqʷaa**qḥ**s ʕasqii ʔaanaḥi wik hinʔałšiƛ̓.

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

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

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

However, the linker cannot attach to complementizers (197, 198).

(197) 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)

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

(198) *ʔuušcukʔisit ʔani**qḥ** 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."

5.1.3 Clause Heading

In a sentence with two predicates, one with the linker and one without, the ordering does not typically make a difference.[4] It is possible for either predicate in an utterance to host the linker, as in (199, 200).

(199) 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)

[4]There are some cases where altering the ordering affects grammaticality judgments. I address these in §5.1.9.

(200) ciiqciiqaqḥitaḥ hitaas.

ciq-LR2L.a-(q)ḥ=(m)it=(m)a·ḥ 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 (201) or second (202) predicate in the utterance.

(201) 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)

(202) ciiqciiqamitniš ƛ̓aaʔaasḥ.

ciq-LR2L.a=mit=ni·š 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 linked predicate. This can be seen for main clauses in (203–205) below.

(203) qiiʔiɬitaḥ ƛupkaa.

qii-°iɬ=(m)it=(m)a·ḥ ƛupk-(y)a·

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

'I was awake a long time.' (**B**, Bob Mundy)

(204) *qiiʔiɬitaḥ ƛupkaaqḥ.

qii-°iɬ=(m)it=(m)a·ḥ ƛupk-(y)a·-(q)ḥ

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

Intended: 'I was awake a long time.' (**B**, Bob Mundy)

(205) *qiiʔiɬḥitaḥ ƛupkaa.

qii-°iɬ-(q)ḥ=(m)it=(m)aˑḥ ƛupk-(y)aˑ

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

Intended: 'I was awake a long time.' (**B**, Bob Mundy)

in my analysis, (203) contains one predicate, *ƛupkaa*, and a modifying adverb *qiiʔiɬ*. So despite the two words available on which to attach a linker morpheme, there is only one predicate phrase available (in this case a VP), and so there is nothing for the linker to coordinate this phrase with. A linker on a predicate with nothing to link to is ungrammatical.

This pattern can be seen in dependent clauses as well, where a single predicate with a linker morpheme is ungrammatical (206, 207).

(206) ʔuuʕaqstuƛaḥ ʔanik hiɬ ʔaḥkuu.

ʔuuʕaqstuƛ=(m)aˑḥ ʔani=k hiɬ ʔaḥkuu

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

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

(207) *ʔuuʕaqstuƛaḥ ʔanik hiɬḥ ʔaḥkuu.

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

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

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

Although the word *hiɬ* 'be at' frequently takes the linker in texts, in (207) 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 (208, 209).

(208) ʼnaacsiičƛintiis ʔin hił čimsʔii maḥtʼeekitk.

ʼnaaca-iˑčiƛ=int=(y)iis ʔin hił čims=ʔiˑ maḥtʼii=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)

(209) *ʼnaacsiičƛintiis ʔin hiłḥ čimsʔii maḥtʼeekitk.

ʼnaaca-iˑčiƛ=int=(y)iis ʔin hił-(q)ḥ čims=ʔiˑ maḥtʼii=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 coordinates two predicates with each other. This data also shows 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 lacking linker morphology.

5.1.4 Linkers on non-verbs

The examples so far have focused on linkers attached to verbs. Verbal coordination has a straightforward analog with English. However, as detailed in §5.1.2, it is possible for the linker to attach to a wide variety of non-verbs. I will claim that the linker performs the same way function in all cases—that is, it links syntactic *predicates* (§3.1.1, not just verbs.

Anecdotally, 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 (210) and may not come before the verb (211). When a linker is attached, the quantifier must be interpreted as the subject and may either come before (212) or after the verb (213).

Context for (210–213): My family and I are looking for a Christmas present for my sister.

(210) ʔuuwaʔaƛ ʔuuš.

ʔu-L.waƛ=!aƛ ʔuuš

x-find=NOW some

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

(211) *ʔuuš ʔuuwaʔaƛ.

ʔuuš ʔu-L.waƛ=!aƛ

some x-find=NOW

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

(212) ʔuuwaʔaƛ ʔuušqḥ.

ʔu-L.waƛ=!aƛ ʔuuš-qḥ

x-find=NOW some-LINK

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

(213) 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 (212, 213), the two predicates being linked are *some* and *find*. Because quantifiers are predicates in Nuuchahnulth, the same analysis applied to two linked verbs can apply here: These are two syntactic 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 (212, 213).

Julia Lucas rejected an interpretation of (210) where *ʔuuš* 'some' was interpreted as the subject. However, in another context (214), she used *ʔuuš* 'some' with a subjective interpretation.

(214) 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 (214), 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 (214) shows that a subjective interpretation is possible for non-linked quantifiers, in the right context.

This observation about quantifiers holds true for other adjectives and also nouns, as seen in (215–217). The initial sentence puts two clauses together with a complementizer (215), but can be rephrased without a complementizer by using the linker (216, 217).

Context for (215–217): 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. (215) was suggested by my consultant, and we worked to rephrase it as (216) and (217). My consultant was adamant that (215) and (216) meant exactly the same thing. If this is true, then the linker is not adding any deep semantic content.[5]

(215) ċawaakitwaʔiš ṅaacsa niiʔatu čapac.

ċawaak=it=wa·ʔiš ṅaacsa niiʔatu čapac

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

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

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

(216) 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)

(217) 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 (215–217), I elicited sentences from Barkley speaker Bob Mundy. This consultant initially proposed the sentence in (218). I proposed (219) by removing the linker, which he rejected, and then (220), which he accepted.

(218) 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)

(219) *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)

(220) ṅaacsiičiƛweʔin ċawaakḥ quuʔas niiʔatu c̓apac.

ṅaacsa.CV-iˑčiƛ=weˑʔin 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 (219) was to say, "It's not complete. One what? What did one see?" Following the basic structure of the Nuuchahnulth clause (§3), the two syntactic participants of the predicate *ṅaacsiičiƛ* 'see' in (219) should be *ċawaak* 'one' and *niiʔatu č̓apac* 'sink canoe'. But *ċawaak*, as an adjective, cannot be a full NP participant without an article (Jacobsen 1979). So it is a syntactically disconnected word and the utterance (219) is nonsensical. The presence of the linker in my consultant's initial proposed sentence (218) forces 'one' to be a predicate with the subject as the predicate 'see'. That is, "There is an *x* such that SEE(*x*,*y*) and ONE(*x*)." The other participant in (218) *niiʔatu č̓apac* 'a canoe sink' is the clausal complement of the seeing act.

In (220) the linked clause not headed by a non-verb can include more than one word. *ċawaak* 'one' takes the subject *quuʔas* 'person'. This dependent clause also interrupts the matrix predicate *ṅaacsiičiƛ* 'see' and its clausal object *niiʔatu č̓apac* 'the canoe sink' in a manner similar to SVC interruptions (§4.2). I take this as evidence in favor of an analysis where the non-linked predicate is a sentential head, and the predicate that the linker attaches to forms a dependent clause. A rough bracketing of (220) based on this preliminary analysis is given in (221).

(221)	[ṅaacsa.CV-iˑčiƛ=weˑʔin	[ċawaak-(q)ḥ	quuʔas]$_{\text{linked\_clause}}$	[niiʔatu	č̓apac]$_{\text{participant\_of\_see}}$]
	see-IN=HRSY.3	one-LINK	person	sink	canoe

5.1.5 Complement ordering

As with serial verbs (§4.2), the linker construction allows units to be separated from their complements by an intervening element. I have already demonstrated that the non-linked predicate may be separated from its complement by an intervening linked predicate and its complement (218, 220, 221). The reverse ordering is also possible. The linked predicate may be separated from its direct object by the non-linked predicate. In (222) the verb *hił* 'be at' and its object 'my house' are contiguous, but in (223) they are separated by the non-linked predicate *mamuuk* 'work'.

(222) hiɬḥitin 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)

(223) hiɬḥitin 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 (223) 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 (224) but not when the non-linked predicate was separated from its object (225, 226). 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.

(224) hiɬḥsiiš ʔuukʷiiɬ c̓upc̓upšumɬ maḥt̓iiʔakʔik.

hił-(q)ḥ=siˑš ʔu-L.(č)iiɬ c̓upc̓upšumɬ maḥt̓ii=ʔak=ʔik

be.at-LINK=STRG.1SG X-make sweater house=POSS=DEFN.2SG

'I am making a sweater at your house.' (**N**, Fidelia Haiyupis)

(225) ʔuuct̓iiḥs Queens Cove ƛ̓iḥaaqḥ.

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

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

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

(226) *ʔuucƚiiḥs ƛ̓iḥaaqḥ Queens Cove.

ʔuucƚiiḥ=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, as in ().

(227) hiłqḥsʔaał načaał ƛ̓iisuwił.

hił-(q)ḥ=s=ʔaał načaał ƛ̓iisuwił

be.at-LINK=STRG.1SG=HABIT read school

'I read at school.' (**C**, *tupaat* Julia Lucas)

(228) hiłqḥsʔaał ʔaḥkuu načaał.

hił-(q)ḥ=s=ʔaał ʔaḥkuu načaał

be.at-LINK=STRG.1SG=HABIT D1 read

'I read here.' (**C**, *tupaat* Julia Lucas)

5.1.6 Semantic interpretations of suffixes and clitics

Nuuchahnulth has a series of clausal second-position enclitics, which include tense and subject-mood portmanteaus. In a linker construction, as in a serial verb construction (§4.2), both predicates share the same subject, mood, and tense.

(229) hiłḥʔum maḥƚiiʔakqs wiinapuƛ̓.

hił-(q)ḥ=ɬum maḥƚiˑ=ʔak=qs wiinapuƛ̓

be.at-LINK=CMFU.2SG house=POSS=DEFN.1SG stop.MO

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

The command portmanteau =*!um* in (229) syntactically scopes[6] 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 within the level of the clause, just as SVCs do.

(230) and (231) 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 (230). My rephrase in (231) with the linker was met with an immediate laugh.

(230) 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)

(231) #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)

The causative =*!ap* and passive =*!at* scope narrowly in linker constructions the same way they do in serial verb constructions (§4.2.2). Example (232) is from a story describing a ceremony where, under the right circumstances, someone "dies" and is brought back to life. It shows a causative morpheme only applying to the verb with the linker (*qaḥak* 'die') and not to the following verb (*hiniis* 'carry').

(232) qaḥakḥʔaṗaƛ hiniis ʔucaʔap hiłḥʔiitq ċaaċaayiqš.

qaḥ-ak-(q)ḥ=!ap=!aƛ hina-iis ʔu-ca=!ap hił-(q)ḥ=ʔiˑtq ċaayiq-R2.š

die-DR-LINK=CAUS=NOW EMPTY-carry.DR X-go=CAUS be.at-LINK=DEFN.3 do.Tsayik.ceremony-IT

'Making him dead they carry him along to the place where they do Tsayik.' (**B**, Hamilton George (Sapir & Swadesh 1939:106))

[6]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.

Example (233) shows passive *=!at* behaving similarly in an example from Bob Mundy. *ƛawiičiʔat* 'be approached by' is modified by a passive valence change, but the linked predicate *hiɬḥ* is not.

(233) ƛawiičiʔataḥ ɬaṅeʔis hiɬḥ maḥɬiiʔakqas.

ƛaw-iˑčiƛ=!at=(m)aˑḥ ɬaṅa=ʔis hiɬ-(q)ḥ maḥɬii=ʔak=qaˑs

near-IN=PASS=REAL.1SG child=DIM be.at-LINK house=POSS=DEFN.1SG

'A child came up to me at at my house.' (**B**, Bob Mundy)

In addition to the clausal second-positions, there are some elements that are suffixes that have an interpretive scope beyond the word they attach to. These include modals and, importantly, the linker itself (5.1.7). The modals in this position seem to be shared across linked predicates, in a similar fashion to the non-valence-changing clitics.

Context for (234): I am taking a friend home and we are leaving a gathering.

(234) waałšiƛẇiɬasniš ƛiḥaaqḥ.

wał-šiƛ-LS-ẇiɬas=niˑš ƛiḥ-(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 (234) share the semantics of the modal suffix *-ẇiɬas*, because both the driving and the going home are intentional, not-yet-occurred events. I confirmed the sharing of the subject portmanteau *=niˑš* by asking if it were possible to say (234) to mean that we were going to walk home but someone else was driving elsewhere. My consultant said no: (234) must mean that it is we who are going to go home and we who are doing it driving in a car.

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

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 (196), repeated as (235) below.

(235) ẏuuqʷaaqḥs ʕasqii ʔaanaḥi wik hinʔałšiƛ.

ẏuuqʷaa-qḥ=s ʕasqii ʔaanaḥi wik hinʔał-šiƛ

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 (235) 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 (236) 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.'

(236) ʔeʔimqḥʔaƛquuweʔin hitaḥtačiƛ sukʷiʔaƛ puuʔakʔiʔał.

ʔeʔim-(q)ḥ=!aƛ=quu=weˑʔin hitaḥta-čiƛ su-kʷiƛ=!aƛ 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 (237), the two elements being coordinated are 'single a long time' and 'going to the river to bathe'. As in (236), the linker attaches to the preceding adverb of the first predicate.

(237) qiiqḥʔaƛ̓ x̣ačłaa haɬinʕasʔaƛ̓ ḥaakʷaaƛ̓ʔi ʔucačiʔaƛ̓ ċaʔakʔisʔi.

qii-(q)ḥ=!aƛ̓ x̣ačłaa haɬinq-!as=!aƛ̓ ḥaakʷaaƛ̓=ʔiˑ

long.time-LINK=NOW single.woman bathe-in.order.to=NOW young.woman=ART

ʔu-ca-čiƛ̓=!aƛ̓ ċaʔak=ʔis=ʔiˑ

x-go-MO=NOW river=DIM=ART

'Having been single a long time the girl went to a little stream in order to bathe.' (**B**, Big Fred Sapir & Swadesh 1939:68)

The linker morpheme attaches to the first word in a predicate phrase: either the predicate itself, or to a preceding modifier.

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 (238).

(238) ʔuʔaaɬukḥʔiʔaɬ.[7]

ʔu-!aaɬuk-(q)ḥ=!iˑ=ʔaɬ

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

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

The meaning of (238) 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.

5.1.9 Ordering preferences

Despite the relative flexibility of which predicate in a construction gets the linker (§5.1.3), there are some cases where speakers have a preference for one ordering over another.

[7]This expression is more common in the Barkley Sound dialect region than in Fidelia's Northern region. Her assimilation to this form of farewell is probably a result of living in Port Alberni for many years.

In a forced choice test, when speakers had a preference they always erred on the side of expressing a linked location word first (Table 5.1). Unlike in the serial verb case (§4.3.3.2), all speakers believed both forms sounded like good Nuuchahnulth, even if they had a preference for one.

Table 5.1: Ordering of linked location predicates

		Total	SB	FH	JL	BM+MT
Case 1	1 mamuukẇiɬasniš hiɬḥ maʔasukqs					
	2 hiɬḥẇiɬasniš maʔasukqas mamuuk	3	1		1	1
	equally good	1		1		
Case 2	1 ciiqciiqamitniš mačiiɬḥ					
	2 mačiiɬḥitniš ciiqciiqa	2		1	1	
	equally good	2	1			1

In a more comprehensive rephrasing test, Bob Mundy expressed a preference for the linker to be both on the location word, as well as on the first predicate. (**??**–**??**) are the versions I tried, in order. He found them all intelligible, but not equally good. (242) with the linker on the location and on the first word was best. (240) with the linker on the location word was okay but he remarked that it was a little off. (239) Bob described as 'backwards', and (**??**) he rejected.

(239) *?ciiqciiqaqḥitaḥ hitaas.

ciq-LR2L.a-(q)ḥ=(m)it=(m)aˑḥ hitaas

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

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

(240) ?ciiqciiqamitaḥ hitaasḥ.

ciq-LR2L.a=(m)it=(m)aˑḥ hitaas-(q)ḥ

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

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

(241) hitaasḥitaḥ ciiqciiqa.

hitaas-(q)ḥ=(m)it=(m)aʻḥ ciq-LR2L.a

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

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

(242) *hitaasitaḥ ciiqciiqaqḥ.

hitaas=(m)it=(m)aʻḥ ciq-LR2L.a-(q)ḥ

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

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

In these examples, the preference for the linker to occur on a location word is strongest, and then second to that is the preference for the linked predicate to occur first. Evidence from Checleseht speaker Sophie Billy suggests that the preference for location verbs to host the linker is a feature across Nuuchah-nulth. Sophie has the least productive use of the linker in her fluent speech. I mainly have examples from her using the linker on location words, quantifiers, and because words. There is only one word outside of these categories I have ever seen her apply a linker morpheme to, the verb *ƛawaa* 'be near.' She rejected linker constructions that other speakers used, such as on adjectives like *ḥaaʔak* 'strong' (194) or on numerals like *ċawaak* 'one' (216). For Sophie, linkers are not just preferred to be on locatiosn but are ungrammatical in many other cases.

Annotating natural texts reveals a different set of facts from ranked choice tests. Using the same corpus for annotating serial verb constructions in Table 4.1 and consisting of 14167 words, I annotated for the presence and ordering of linker morphemes in linker constructions. I split data according to attachment sites: verbs, adjectives, nouns, adverbs, and wh-words. The only wh-words in my corpus were *qʷis* 'do thus', *qʷa* 'how' and *ʔaaqin* 'how/why.' I split the verbal category into locations, because words,[8] and others, and the adjective category into quantifiers, numbers, and durations (numbers that are inflected for perfective aspect). The results are in Table 5.2.

[8]Because words have some special properties. See §5.2.1.

Table 5.2: Occurrence of linker constructions in naturally-occurring Nuuchahnulth

	Verbs						Adjectives						Nouns		Adverbs		Wh-words	
	Location		Because		Others		Quantifier		Number		Duration							
Linker 1st/2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Notka Texts	2	6	0	0	0	2	0	0	0	1	3	0	1	0	2	0	2	0
Barkley	4	2	1	1	3	0	1	0	0	0	0	0	0	0	0	0	0	0
Central	1	12	8	0	0	0	6	2	1	1	0	0	0	1	0	0	0	0
Northern	5	19	1	0	2	0	1	1	0	0	0	0	0	0	0	0	2	1
Kyuq.-Checl.	2	8	0	0	0	1	5	0	0	0	1	0	0	0	0	0	0	0
Subtotal	14	47	10	1	5	3	13	3	1	2	4	0	1	1	2	0	4	1
Total	61		11		8		16		3		4		2		2		5	

Fully half of linkers in the corpus appear on location words, mostly *hił*. After locations, the most common uses are on quantifiers and because words (*ʔuunuuƛ*, *ʔunẃiiƛ*). The use on nouns and adverbs is the least common, with no instances of linked adverbs in my corpus of modern Nuuchahnulth, although speakers do recognize and understand these examples.

Ordering preferences are not clear from this sample. Because words, quantifiers, and wh-words with a linker are all strongly likely to occur first in this data set. However, quantifiers and wh-words tend to front, and because words, as main predicates, tend to occur initially (§5.2.1). The distribution of linked location words is directly opposite Bob Mundy's opinion in a forced choice task. There is an asymmetry here, however: Without the linker present, locations do not appear second, or only appear second under specific conditions (§4.2.1.2). So in most cases where a location word occurs second in a clause, it must have a linker attached to it, while if it occurs initially the linker may be present or absent. From the remaining categories there may be a slight preference for linkers to occur initially, but it is in no way absolute.

5.1.10 Data Summary

The data presented so far leads me 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.[9] (§5.1.2)

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

2. A clause may not consist of only a linked predicate. (§5.1.3)
3. The syntactic properties of the linker do not alter depending on whether it attaches to a verb or other part of speech. (§5.1.4)
4. It is possible for either predicate in a linker construction to be separated from their complement by the other predicate. (§5.1.5)
5. Both predicates in a linker construction share the second-position inflectional information, including subject. (§5.1.6)
6. The linker does not add semantic content to a predicate. (§5.1.6)
7. The linker attaches to the first word in its predicate phrase, even if that first word is an adverb that precedes the predicate. This predicate phrase is a clause that lacks the information of the second position enclitics. (§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 is a preference for linked predicates to occur on location words, and in some cases to occur on the first predicate (§5.1.9).

I will ultimately model these facts as a suffixing coordinator with the semantics of AND. The relative insensitivity of the linker morpheme to category is additional evidence that verbs, adjectives, and nouns are part of a natural predicate class in Nuuchahnulth (§3.1.1), and the linker is one of the places in the grammar that is insensitive to which member of this class it picks out. Before moving on to my full analysis (§5.3), I will first apply the linker to questions about syntactic categories.

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 adposition-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. Since the linker typically occurs freely on content words such as verbs (5.1.2), if these words are 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). *ʔuyi* 'at a time' does not accept the linker (5.2.2). Most of the adposition-like verbs can also accept the linker (5.2.3), but not the special non-subject marking adpositives *ʔuukʷiɬ* and *ʔuḥtaa*. This aligns with Woo's findings, where these words are functional and non-predicative little-*v*.

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 *ʔuḥtaa* 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*[10] (Barkley and Central, recognized but rare in Northern and Kyuquot-Checleseht) and *ʔunẃiiƛ* (Northern and Kyuquot-Checleseht only). To distinguish the two arguments of the because semantic relation, I'll refer to the *result* and the *cause*. The because words themselves I'll call *becausitives*.

ʔuunuuƛ and *ʔunẃiiƛ* appear to be dialectal variants with the same meaning and use patterns. They may be used them as the first word or main predicate in a clause (243–246), where they take the second position enclitic 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 result. The result in these cases follows the becausative (243–246), and the cause occurs either after a complementizer (243) or can be dropped and realized it in a later clause, if at all (246).

[10]Ahousaht speaker *tupaat* Julia Lucas 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.

(243) ʔunẇiiƛ̓iis mačiił ʔin ṁiƛ̓aa.

ʔunẇiiƛ̓=(y)iis mačiił ʔin ṁiƛ̓-(y)aˑ

because=WEAK.1SG inside.DR COMP rain-DR

'I'm inside because it is raining.' (**Q**, Sophie Billy)

(244) ʔuunuuƛ̓s hiniiʔiƛ̓ ʔin ṁiƛ̓aa.

ʔuunuuƛ̓=s hiniiʔiƛ̓ ʔin ṁiƛ̓-(y)aˑ

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

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

(245) ʔunʔuuƛ̓ ƛ̓iḥasum ʔukɬinuƛ̓ ʔin ʔuḥʔatqaƛ̓̌a ʔuʔaaɬuk witwaak.

ʔunʔuuƛ̓ ƛ̓iḥasum ʔu-kɬinuƛ̓ ʔin ʔuḥ=!at=qaˑƛ̓̌a ʔu-!aaɬuk witwaak

because Red.Mist x-call.MO COMP be=PASS=DUBV x-look.after warrior.PL

'The reason why he was called Red Mist is that he led warriors.' (**C**, *tupaat* Julia Lucas)

(246) ʔuunuuƛ̓itaḥ wik ƛ̓uɬ weʔič. ʕiḥakita naẏaqak.

ʔuunuuƛ̓=(m)it=(m)aˑḥ wik ƛ̓uɬ 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)

It is also possible for the becausative to occur second in the construction after the result, in which case the cause may (247) or may not (248, 249) be introduced by a complementizer.

(247) wikʔaaqƛ̓eʔicuu ċukʷiƛ̓ ʔuunuuƛ̓ ʔani wikʔaała čamiḥta ƛ̓uššiƛ̓.

wik=ʔaaqƛ̓=(m)eˑʔicuu ċu-kʷiƛ̓ ʔuunuuƛ̓ ʔani wik=ʔaała čamiḥta ƛ̓uš-šiƛ̓

NEG=FUT=REAL.2PL wash-MO because COMP NEG=HAB proper dry-MO

'You're not going to wash because it won't get properly dry.' (**B**, Marjorie Touchie)

Context for (248, 249): Two teams are playing tug of war. Our team is strongest and we won.

(248) 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)

(249) tuunuumitniš ʔunẇiiƛ̓ ḥaaʔakin.

tuunuu=(m)it=niˑš ʔunẇiiƛ̓ ḥaaʔak=(y)in

win=PST=STRG.1PL because strong=WEAK.1PL

'We won because we are strong.' (**N**, Fidelia Haiyupis)

While the cause can be introduced with a complementizer, as seen in (243, 244, 245, 247) above, the complementizer may never be used to introduce the result (257, 258).

Context for (257, 258): There are two teams playing tug-of-war. One has access to supernatural medicine and they are the winners.

(250) ʔunʔuuƛ̓ḥitqač̓aʔał hitaʔap ʔin ʕuʔinak.

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

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

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

(251) # ʔunʔuuƛ̓ḥitqač̓aʔał ʕuʔinak ʔin hitaʔap.

ʔunʔuuƛ̓ḥitqač̓aʔał ʕuʔi-naˑk ʔin hitaʔap

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

Intended: 'They won because they had medicine.'[11] (**C**, *tupaat* Julia Lucas)

As seen in (257), the becausative can have a linker attached.[12] The exact same types of constructions

[11]The actual meaning of (258), 'they had medicine because they won' would be the opposite of what makes sense in the story. "It's backwards," in Julia's words.

[12]Bob Mundy 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.

that have been seen so far can also be produced with a linker on the becausative: with the becausative occurring first (252), with it occurring second (253), and with and without the complementizer.[13]

(252) ʔuunuuƛ̓ḥʔaƛ̓itweʔin ʕiḥak ʔani wiƛ̓iituk ɬaatʰeʔis.

ʔuunuuƛ̓-(q)ḥ=!aƛ̓=(m)it=weˑʔin ʕiḥ-ak ʔani wiƛ̓iit=uk L.<t>-ɬaʰa=ʔis

because-LINK=NOW=PST=HRSY.3 cry-DR COMP none=POSS PL-child=DIM

'She cried because she had no children.' (**B**, Marjorie Touchie)

(253) hiniiʔiƛ̓s ʔunẇiiƛ̓ḥ ɯ̓iƛ̓šiƛ̓.

hiniiʔiƛ̓=s ʔunẇiiƛ̓-(q)ḥ ɯ̓iƛ̓-šiƛ̓

inside.MO=REAL.1SG because-LINK rain-MO

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

All these sentences have similar constructions. The result is expressed adjacent to the becausative (before or after) and its subject is marked in the second position enclitic complex, which may fall on either the becausative or the result's main predicate. The cause is an embedded clause that optionally follows after a complementizer. The sentential cause complement may have its own subject-marking enclitics (248–249).

It is tempting to have an analysis of the becausatives in which they have two complements: the result and cause. However, the fact that the linker freely attaches to the becausative complicates this. What does the linker actually link the becausative to? It can't be the cause, since the cause can be marked with a complementizer that explicitly subordinates the phrase. The only possibilities are that this is a "dangling" linker (§5.1.8), coordinating the becausative with something in the discourse context that is syntactically dropped, or that it is coordinating the becausative with the result.

I believe the best analysis is the second one: Becausatives have a single complement (the cause), and the linker, when present, is linking the becausative to the result. This makes the structure of because

[13] I have no instances of a dropped complementizer when the becausative is first: that is, a theoretical example of *becausative =inflection result cause*. This construction may be ungrammatical or simply dispreferred, as it makes it difficult to determine which complement is the cause. A fuller explanation would require further analysis and work with speakers.

expressions look like adposition-like verbs (§4.3.3.3). Like adpotision-like verbs, becausatives can appear with or without a linker without changing the meaning of the utterance. Both these kind of verbs are in a coordination structure with a main predicate: for adposition-like verbs, they are coordinated with a main action,[14] and for becausatives, they are coordinated with their result. This coordination can be achieved either covertly through a serial verb construction, or overtly with the linker.

Finally, *ʔuunuuƛ*/*ʔunẃiiƛ* must take a result that is a predicate. A nominal complement is ungrammatical, as shown in (254, 255).[15]

(254) 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)

(255) *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)

In sum, the evidence suggests the following for *ʔuunuuƛ* and *ʔunẃiiƛ*. These words are verbs that take a single sentential causal complement, which is verbal and may optionally be introduced by a complementizer. The way the BECAUSE relation is syntactically related to its result is through coordination, either in a SVC which is analogous to the behavior of adpositive-like SVCs, or via a linker construction which links the result and the becausative.

While *ʔuunuuƛ* and *ʔunẃiiƛ* behave as verbs with a sentential complement, *ʔuusaaḥi* requires a participant complement. The ungrammatical example (255) can be made grammatical by switching out *ʔuunuuƛ* for *ʔuusaaḥi* (256).

---

[14] I will come back to this point about adposition-like verbs in §5.2.3.

[15] (254) is repeated from (246).

(256) wikitaḥ ƛuł weʔič ʔuusaaḥi naẏaqakʔisʔi.

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

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

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

As with *ʔuunuuƛ*/*ʔunẇiiƛ*, the participant cause must occur immediately following *ʔuusaaḥi*, as shown in (257, 258).

(257) ʔuusaaḥi ʕuʔi hitaʔap.

ʔuusaaḥi ʕuʔi hitaʔap

because.of medicine win

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

(258) *ʔuusaaḥi hitaʔap ʕuʔi.

ʔuusaaḥi hitaʔap ʕuʔi

because.of win medicine

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

ʔuusaaḥi may take a clausal cause only if the cause is preceded by the complementizer (259–261).

(259) ʔuusaaḥi hitaʔap ʔin ʕuẏinak.

ʔuusaaḥi hitaʔap ʔin ʕuẏi-naˑk

because.of win COMP medicine-have

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

(260) 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)

(261) ʔuusaaḥimta ʔuusuqta ʔanis t̓iʕaaʔatimt.

ʔuusaaḥi=imt=maˑ ʔuusuqta ʔani=s t̓iʕaaʔatu=imt

because.of=PST=REAL.3 be.hurt.CV COMP=1SG fall.down=PST

'I got hurt because I fell down.' (*B*, Bob Mundy)

ʔuusaaḥi is also 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.

(262) ʔuusuqtumtʔiš ʔuusaaḥiqḥ wik̓aaɬukʷint.

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

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

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

Like *ʔuunuuƛ*/*ʔunẇiiƛ*, *ʔuusaaḥi* is a verb taking a single argument, a cause. This is associated with the result of through either a serial verb construction or with a linker. Unlike *ʔuunuuƛ*/*ʔunẇiiƛ*, *ʔuusaaḥi* takes a nominal causal argument, but this can be changed into a sentential argument 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 (263–267). The temporal complement of *ʔuyi* can be a nominal either occurring after (263) or before (264) *ʔuyi*, it can be expressed in a clause with a dependent mood such as the possible mood (265) or the definite mood (266), or it can be dropped from the clause entirely (267).

(263) ʔuyaẇiɬsiis saantii ʔucičƛ ciquuɬi.

ʔuya-ẇiɬs=(y)iis saantii ʔu-ci-čiƛ ciquwił=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)

(264) waałakin yuuɬuʔiɬʔatḥ kuʔał ʔuyi.

wałaak-LS=(m)in yuuɬuʔiɬʔatḥ kuʔał ʔuyi

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

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

(265) 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)

(266) 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)

(267) 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 (268, 269). The doubling is always gramatically optional, so that (269) is grammatical without the doubling (270).

(268) ʔuyimtinʔaała wałaak May ʔuyiʔeƛ̓.

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

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

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

(269) 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)

(270) 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 (270) in particular is identical to other serial verb constructions (§4.2). However, the doubling in (268, 269) so far as I know is unique.

Another significant point of differentiation from typical verbs is that *ʔuyi* does not accept the linker (271, 272). When I presented (271), Marjorie Touchie immediately corrected me and said that the way to say this would be with *ʔuyi ʔaṁii*. There are no instances of linked *ʔuyiqḥ* in the first two volumes of the Nootka Texts (Sapir & Swadesh 1939, 1955).

(271) *ʔuyiqḥʔaƛ̓aḥ ʔaṁii mamuuk hił makuwił.

ʔuyi-(q)ḥ=!aƛ̓=(m)aˑḥ ʔaṁii 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)

(272) *ʔuyiqḥʔaƛs ʔaṁii mamuuk hił makuwił.

ʔuyi-(q)ḥ=!aƛ=s	ʔaṁii	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)

ʔuyi then behaves much like a verb in a SVC, with two exceptions: (i) Unlike verbs (and all predicative words), it cannot accept the predicate linker; (ii) It can optionally double in constructions where it is separated from its direct object.

My analysis of these facts is that *ʔuyi* is an historic verb that has undergone a grammatical category shift that has caused it to lose its status as a predicate.

The shape of the word looks like the empty root *ʔu-* combined with some verbal suffix. Although there is no contemporary productive suffix *-yi* meaning 'at a time,' (Sapir & Swadesh 1939:320) lists two suffix -(*y*)*iˑ* and -(*y*)*iya* with the gloss 'at . . . time, in . . . weather.' While -(*y*)*iˑ* may be an historic suffix with the time meaning, it is no longer active: (Stonham 2005:346) only gives *qʷiyii* 'when' as an example word, and if this suffix were regular, *ʔuyi* should be *ʔuyii*. There are more instances of -(*y*)*iya* in the Nootka Texts, such as *ʔaḥʔaayiya* 'at that time' (Sapir & Swadesh 1939:16), *ċawaayiya* 'one time/one day' (Sapir & Swadesh 1939:19), and *ʔuyiya* 'at the time. . .' (Sapir & Swadesh 1939:112). Nuuchahnulth has another similar suffix *-L.yuuya* '. . . of the time,' not listed in Sapir & Swadesh (1939). It forms words like *ʔuušyuuya* 'sometimes,' *hiišyuuya* 'all the time.' These suffixes look like they may be related, and whether *ʔuyi* came from *ʔu-* + -(*y*)*iˑ*, *ʔu-* + -(*y*)*iya*, or something else, it seems likely that the word historically derives from a suffix verb.

ʔuyi retains many of the properties of verbs, entering into SVCs as though it were an adposition-like verb (§4.2.1.3), being able to be split from its direct object by an intervening verb. It is set apart from other verbs in that it has lost its status as a predicate, as seen from its inability to accept the predicate linker.

This grammaticalization process can also be seen in the word's "doubling" in the right contexts. This could be analyzed as a simple repetition with argument-dropping, but that doesn't explain why this only occurs with this grammaticalized former verb. I believe the better explanation is that *ʔuyi* is a word

in-between two syntactic categories. As a verb, it can enter into serial verb constructions. But as an adposition, it can take a nominal complement. In "doubling" contexts, *ʔuyi* occurs twice: once entering into an SVC as a verb, and another time taking a complement as an adposition. In these contexts, verbal *ʔuyi* takes as its complement a adpositional phrase headed by adpositional *ʔuyi* as its complement. Under this analysis, this doubling phenomenon only appears as a transitory step of a grammaticalization process, which ends with *ʔuyi* becoming an adposition and losing its remaining verbal properties.

5.2.3 Adposition-like words

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

Woo separates these words into two categories. 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. In my definition, this would be a serial verb construction (§4.3.3.2). This is supported in part by the fact that the first set of words can occur as the sole predicate of a sentence.

However, the last three words (*ʔuukʷiɬ*, *ʔuḥtaa*, 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 little-*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. Structurally, verbs should be able to coordinate either covertly through a serial verb construction or overtly with a linker morpheme. If a word is a member of a grammatical category (like an adposition or Minimalism's little-*v*), it should be non-predicative and the predicate linker should not be able to attach.

Not all speakers recognize or use all of the adpositive-like words Woo lists, so I was not able to test all of these words with all speakers. There is also a morphophonological problem testing *ʔuḥ* (which would be **ʔʔuḥḥ* with the linker). However, I have collected data on (1) *ʔuuḥẃał*, (3) *ʔucḥin*, (4) *ʔuuʔatup*, (not in Woo's list) *ʔuupaał*, (7) *ʔuukʷił*, and (8) *ʔuḥtaa*. In short, the words Woo's calls verbs mostly accept the linker, while all of her "little-*v*" words do not.

5.2.3.1 ʔuuḥẃał

The adposition-like verb *ʔuuḥẃał* 'using' can accept the linker in a sentence without any change of meaning.

(273) wikcuǩʷapʔic 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)

(274) wikcuǩʷapʔic ƛ̓iisƛ̓iisa ʔuuḥẃałḥ ƛ̓iisćuuẏak.

wikcuk=!ap=ʔic ƛ̓is-LR2L.a ʔuuḥẃał-(q)ḥ ƛ̓iisćuuẏak

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

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

5.2.3.2 ʔucḥin

The adposition-like verb *ʔucḥin* 'for, on the behalf of' can also freely accept the linker.

(275) 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)

(276) ʔucḥinqḥʔaƛs mamuuk ʔuušḥẏumsukqs.

ʔucḥin-(q)ḥ=!aƛ=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)

5.2.3.3 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 (277, 278) but my Barkley Sound consultants Bob Mundy and Marjorie Touchie did not (279, 280). This may be another case of a change in progress, where for my Barkley consultants, *ʔuuʔatup* is in a process of grammaticalization and becoming an adposition.

(277) ʔaḵuɬis suẇa ḥiẏaḥi č̓apac ʔuuʔatup ḥaakʷaaƛukʔitk.

ʔaḵuɬi=s suẇa ḥiẏaḥi č̓apac 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)

(278) ʔaḵuɬis suẇa ḥiẏaḥi č̓apac ʔuuʔatupḥ ḥaakʷaaƛukʔitk.

ʔaḵuɬi=s suẇa ḥiẏaḥi č̓apac 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)

(279) 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)

(280) *huyaałaḥ ʔuuʔatupḥ ɬaatʲeʔis.

huyaał=(m)aˑḥ ʔuuʔatup-(q)ḥ ɬaatʲa=ʔis

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

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

5.2.3.4 ʔuupaał(ḥ)

Though this word does not appear in Woo (2007), it is another adposition-like verb that appears to have the same meaning as *ʔukʷink* 'with'. Only Julia Lucas recognized *ʔuupaał* as an independent word which could optionally take the linker -(*q*)*ḥ* (281, 282). For my other consultants who knew the word (Bob Mundy, Marjorie Touchie, and Fidelia Haiyupis), they only recognized *ʔuupaałḥ* and not *ʔuupaał*. They could articulate this straightforwardly (i.e., "*ʔuupaał* is not a word") but also rejected *ʔuupaał* in examples (283–286).

ʔuupaał (but not *ʔuupaałḥ*) occurs in the Nootka Texts, so my interpretation of this is that for some speakers, *ʔuupaał* has relexicalized to incorporate what was formerly a linker morpheme into the lexical entry itself. That is, a relexicalization process that looks like:

ʔuupaał → *ʔuupaał* + -(*q*)*ḥ* → *ʔuupaałḥ*.

(281) ciiqmałapiẇiɬasniš ʔuupaał ẏukʷiiqsakqs.

ciq-mał-L.api-ẇiɬas=niˑš ʔuupaał 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)

(282) ciiqmałapiẇiɬasniš ʔuupaałqḥ ẏukʷiiqsakqs.

ciq-mał-L.api-ẇiɬas=niˑš 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)

(283) ʔuupaaɬḥitweʔin ɬaǹeʔisukqas łuučḿuupukʔi pisaɬasẃiɬas.

ʔuupaaɬḥ=(m)it=weˑʔin ɬaǹa=ʔis=uk=qaˑs łuučḿuup=uk=ʔiˑ pisat-!as-ẃiɬas

with=PST=HRSY.3 child=DIM=POSS=DEFN.1SG sister=POSS=ART play-outside.DR-going.to

‘My child went with his sister to go play.’ (**B**, Bob Mundy)

(284) *ʔuupaaɬitweʔin ɬaǹeʔisukqas łuučḿuupukʔi pisaɬasẃiɬas.

ʔuupaaɬ=(m)it=weˑʔin ɬaǹa=ʔis=uk=qaˑs łuučḿuup=uk=ʔiˑ pisat-!as-ẃiɬas

with=PST=HRSY.3 child=DIM=POSS=DEFN.1SG sister=POSS=ART play-outside.DR-going.to

Intended: ‘My child went with his sister to go play.’ (**B**, Bob Mundy)

(285) ʔuupaaɬḥintʔiš mamuuk ƛ̓iisƛ̓iisaʔaṗt.

ʔuupaaɬḥ=int=ʔiˑš mamuuk ƛ̓iisƛ̓iisaʔaṗt

with=PST=STRG.3 work.DR Adam

‘I work with Adam.’ (**N**, Fidelia Haiyupis)

(286) *ʔuupaaɬintʔiš mamuuk ƛ̓iisƛ̓iisaʔaṗt.

ʔuupaaɬ=int=ʔiˑš mamuuk ƛ̓iisƛ̓iisaʔaṗt

with=PST=STRG.3 work.DR Adam

Intended: ‘I work with Adam.’ (**N**, Fidelia Haiyupis)

5.2.3.5 ʔuukʷiɬ

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

(287) haɬiiɬintʔiš ʔiiḥatisʔatḥ ʔuukʷiɬ ċišaaʔatḥ čiicɬałẃiɬas.

haɬiiɬ=int=ʔiˑš ʔiiḥatisʔatḥ ʔu-L.(č)iɬ ċišaaʔatḥ čiicɬał-ẃiɬas

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)

(288) *haɬiiɬintʔiš ʔiiḥatisʔatḥ ʔuukʷiɬḥ ċišaaʔatḥ čiiċtaɬẇiṫas.

haɬiiɬ=int=ʔi·š ʔiiḥatisʔatḥ ʔu-L.(č)iɬ-(q)ḥ ċišaaʔatḥ čiiċtaɬ-ẇiṫas

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)

5.2.3.5.1 ***ʔuḥtaa*** Like the more common object marker *ʔuukʷiɬ*, the marker *ʔuḥta* also does not accept the linker. *ʔuḥtaa* is a nearly-lost word in Nuuchahnulth. The only consultant who recognized it was Julia Lucas, when listening to a recording of her older sister, who used the word fluently in natural speech. She recognized the word without the linker, but not with it (289, 290).

Context for (289, 290), discussing family relations.

(289) ʔuḥtaa Jane ʔuʔukʷiɬ Alexandra ẏukʷiiqsu.

ʔuḥtaa Jane ʔuʔukʷiɬ Alexandra ẏukʷiiqsu

DO.TO Jane call Alexandra younger.sibling

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

(290) *ʔuḥtaaqḥ Jane ʔuʔukʷiɬ Alexandra ẏukʷiiqsu.

ʔuḥtaa-(q)ḥ Jane ʔuʔukʷiɬ 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*, *ʔunẇiiƛ*, and *ʔuusaaḥi* 'because' all behave like verbs, and I believe they should be treated as such. *ʔuyi* does not accept the linker, and is in the process of transitioning to an adposition. The adposition-like words that can accept the linker seem to be clearly verbal, which agrees with Woo (2007)'s categorization. However the argument-marking words *ʔuukʷiɬ* and *ʔuḥtaa* behave

differently, as befitting non-predicative words belonging to a different, functional and non-predicative category, whether they are called little-*v* within Minimalism, or perhaps adpositions in other frameworks.

5.3 HPSG Analysis and Implementation

5.3.1 The predicate linker type

The predicate linker attaches either directly to the predicate it is coordianting, or to a preceding modifier of that predicate (§5.1.2). Its syntactic position is in this way perfectly in line with that of second position suffixes (§3.1.4), and so I will use the same analysis I developed for other second position suffixes like *-ẇiṫas* and *maḥsa* in §3.2.3.2.

Chapter 6

CONCLUSION

BIBLIOGRAPHY

Aikhenvald, A. Y. & Dixon, R. M. W. (2006). *Serial Verb Constructions: A Cross-linguistic Typology*. Oxford University Press.

Bender, E. M. (2010). Reweaving a grammar for wambaya. *Linguistic Issues in Language Technology*, 3(1).

Bender, E. M., Drellishak, S., Fokkens, A., Poulson, L., & Saleem, S. (2010). Grammar customization. *Research on Language & Computation*, 8(1), 23–72. 10.1007/s11168-010-9070-1.

Bender, E. M., Flickinger, D., & Oepen, S. (2002). The grammar matrix: An open-source starter-kit for the rapid development of cross-linguistically consistent broad-coverage precision grammars. In *Proceedings of the 2002 workshop on Grammar engineering and evaluation-Volume 15* (pp. 1–7).: Association for Computational Linguistics.

Boas, F. (1947). Kwakiutl grammar with a glossary of the suffixes. *Transactions of the American Philosophical Society*, 37(3), 203–377.

Braithwaite, B. (2003). Syntactic approaches to possessive constructions in Nuuchahnulth. In *Papers for the 38th International Conference on Salish and Neighbouring Languages. UBCWPL*, volume 11 (pp. 7–22).

Butt, M. (1995). *The structure of complex predicates in Urdu*. Center for the Study of Language (CSLI).

Carlson, B. F., Esling, J. H., & Fraser, K. (2001). Nuuchahnulth. *Journal of the International Phonetic Association*, 31(2), 275–279.

Chafe, W. L. (1968). Idiomaticity as an anomaly in the chomskyan paradigm. *Foundations of language*, (pp. 109–127).

Comrie, B., Haspelmath, M., & Bickel, B. (2008). The Leipzig Glossing Rules: Conventions for interlinear morpheme by morpheme glosses. *Department of Linguistics of the Max Planck Institute for Evolutionary Anthropology & the Department of Linguistics of the University of Leipzig*.

Copestake, A., Flickinger, D., Pollard, C. J., & Sag, I. A. (2005). Minimal recursion semantics: an introduction. *Research on Language and Computation*, 3(4), 281–332.

Davidson, M. (2002). *Studies in Southern Wakashan* (*Nootkan*) *Grammar*. PhD thesis, University of New York at Buffalo.

Drellishak, S. & Bender, E. M. (2005). A coordination module for a crosslinguistic grammar resource. In S. Müller (Ed.), *The Proceedings of the 12th International Conference on Head-Driven Phrase Structure Grammar, Department of Informatics, University of Lisbon* (pp. 108–128). Stanford: CSLI Publications.

Esling, J. H., Fraser, K. E., & Harris, J. G. (2005). Glottal stop, glottalized resonants, and pharyngeals: A reinterpretation with evidence from a laryngoscopic study of nuuchahnulth (nootka). *Journal of Phonetics*, 33(4), 383–410.

Flickinger, D. & Bender, E. M. (2003). Compositional semantics in a multilingual grammar resource. In E. M. Bender, D. Flickinger, F. Fouvry, & M. Siegel (Eds.), *Proceedings of the Workshop on Ideas and Strategies for Multilingual Grammar Development, ESSLLI 2003* (pp. 33–42). Vienna, Austria.

Inman, D. (2018). The representation of predicates at the syntactic-semantic boundary in Nuuchahnulth. In *Papers for the 53rd International Conference on Salish and Neighbouring Languages* (pp. 25–40).

Jacobsen, W. H. (1979). Noun and verb in Nootkan. In *The Victoria conference on Northwestern Languages* (pp. 83–155).

Jacobsen, W. H. (1993). *ADVANCES IN ROLE AND REFERENCE GRAMMAR*, chapter Subordination and cosubordination in Nootka: Clause combining in a polysynthetic verb-initial language, (pp. 235–235). Amsterdam: John Benjamins Publishing.

Jacobsen, W. H. (1996). 'hardening' and 'softening' in makah. In *Papers for the 31st International Conference on Salish and Neighbouring Languages*: Vancouver: University of British Columbia, ms.

Lambrecht, K. (1996). *Information Structure and Sentence Form: Topic, focus, and the mental representations of discourse referents*, volume 71. Cambridge University Press.

Nakayama, T. (2001). *Nuuchahnulth* (*Nootka*) *Morphosyntax*. University of California Press.

Nunberg, G., Sag, I. A., & Wasow, T. (1994). *Idioms*, volume 70. Linguistic Society of America.

Oepen, S. (2001). [incr tsdb()] — *Competence and Performance Laboratory. User Manual*. Technical report, Computational Linguistics, Saarland University, Saarbrücken, Germany. in preparation.

Parsons, T. (1990). *Events in the Semantics of English*, volume 5. Cambridge, Ma: MIT Press.

Pollard, C. & Sag, I. A. (1994). *Head-driven phrase structure grammar*. University of Chicago Press.

Rose, S. (1981). *Kyuquot Grammar*. PhD thesis, University of Victoria.

Sapir, E. (1924). The rival whalers, a nitinat story (nootka text with translation and grammatical analysis). *International Journal of American Linguistics*, 3(1), 76–102.

Sapir, E., Klokeid, T., Arima, E., & Robinson, K. (2000). *The Whaling Indians: West Coast Legends and Stories: Tales of Extraordinary Experience*. Canadian Museum of Civilization.

Sapir, E. & Swadesh, M. (1939). *Nootka Texts: Tales and ethnological narratives, with grammatical notes and lexical materials*. Linguistic society of America, University of Pennsylvania.

Sapir, E. & Swadesh, M. (1955). *Native accounts of Nootka ethnography*. Indiana University, Research Center in Anthropology, Folklore, and Linguistics.

Sapir, E., Swadesh, M., George, H., Thomas, A., Williams, F., Fraser, K., Arima, E., Kammler, H., Klokeid, T., & Robinson, K., Eds. (2004). *The Whaling Indians: Legendary Hunters*. Canadian Museum of Civilization.

Sapir, E., Swadesh, M., George, H., Thomas, A., Williams, F., Fraser, K., Arima, E., Kammler, H., Klokeid, T., & Robinson, K., Eds. (2009). *Family Origin Histories: The Whaling Indians: West Coast Legends and Stories*. Canadian Museum of Civilization.

Shank, S. & Wilson, I. (2000). Acoustic evidence for ʕ as a glottalized pharyngeal glide in nuu-chah-nulth. In *Papers for the 35th International Conference on Salish and Neighbouring Languages* (pp. 185–197).: University of British Columbia Working Papers in Linguistics.

Stonham, J. T. (2005). *A concise dictionary of the Nuuchahnulth language of Vancouver Island*. Edwin Mellen Pr.

Waldie, R. J. (2004). Nuu-chah-nulth denominal verbs. Master's thesis, University of Victoria.

Werle, A. (2010). The phonology of wakashan languages. *Manuscript, University of Victoria, Victoria, British Columbia, Canada*.

Wojdak, R. (2001). An argument for category neutrality? In K. Megerdoomian & L. A. Bar-el (Eds.), *Proceedings of the West Coast Conference on Formal Linguistics*, volume 20 (pp. 621–634).

Wojdak, R. (2003). Predicative lexical suffixes in nuu-chah-nulth. *University of British Columbia Working Papers in Linguistics*, 11, 275–289.

Wojdak, R. (2005). *The linearization of affixes: Evidence from Nuu-chah-nulth*. PhD thesis, The University of British Columbia.

Woo, F. (2007). *Prepositional Predicates in Nuuchahnulth*. PhD thesis, University of California, Santa Cruz.

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
- c̓ 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
- m̓, n̓, y̓, w̓, 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 (291–293).

(291) wiinapasʔapi̓.

wiinapi-!as=!ap=!iˑ

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

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

(292) ċiy̓iiƛ̓

ċis-!iˑƛ̓

line-outside.MO

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

(293) hišumyiɬʔaqƛ̓niš hawiiʔaƛ̓qu ʔapẇin ṅaas.

hišumɬ-°iɬ=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 (294, 295).

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

(294) ʔaƛiičiʔaƛma ɬašii.

ʔaƛa-iˑčiƛ=!aƛ=maˑ ɬašii

two-IN=NOW=REAL.3 road

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

(295) 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 (296, 297).

(296) ʔaaqičiłk ṅaacsa.

ʔaqi-L.(č)iɬ=k ṅaacsa

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

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

(297) 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	čʊ-L.ʔatu dive-sink.into.water	čʊʊʔatu dive down into water
LS	hašił-LS.sa have.news-AUG1	haašiłsa interesting
SS	ʔaya-iˑčiƛ̓-SS.(q)aq many-IN-AUG2	ʔayičiƛ̓aq became very many
R	ɬuc-R.!iiḥ sea.urchin-go.after.food	ɬuɬućiiḥ getting sea urchins
LR	kuḥʷ-LR.inqił hole-at.ribs	kuukuḥinqił hole at the ribs
LRS	qʷi-LRS.itɣak what-fear	qʷiiqʷitɣak whatever one fears
LRL	LRL-mamałƛ̓i PL-white.person	maamaamałƛ̓i white people
RL	ʔu-RL.čiɣał X-pursue	ʔuʔuukʷiɣał pursue it
R2	R2-nuuk PL-song	nuuknuuk songs
LR2L	ɬapat-LR2L.a think-RP	ɬaaɬaapata consider
LR2L	huuł-LR2L.a dance-RP	huułhuuła 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*, =*waˑʔišˇ*
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.

---

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.

(298) *ʕumtnaak*

ʕumt-naˑk

name-have

'having a name'

(299) *ʔunaak ʕumt-ii*

ʔu-naˑk ʕumt-iˑ

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 (300, 301).

---

[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'.

(300) *hitaqsiƛ̓*

hita-qsiƛ̓

EMPTY-in.a.vessel.MO

'enter into a vessel'

(301) *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 Kyuquot-Checleseht dialects there are six: four locative deictics and two non-locative 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*

Appendix C

ADDITIONAL DATA

C.1 Forced choice test for perfectivity matching

In §4.2.1.1, I reference an attempt at forced choice to bring out any preference for perfectivity marking. For this, I worked with 5 speakers but I worked with Bob Mundy and Marjorie Touchie at the same time, and so report their preferences together. The results on the perfectivity component of this test was mixed, as seen in Table C.1.

Table C.1

Test number	Forced choice (Central version)	Perfectivity	Total	SB	FH	JL	BM+MT
Case 1	1 ʔuucuʔukits mataa paastinʔatḥ	match (imperfect)	1				1
	2 ʔucačiƛits maatuk paastinʔatḥ	mismatch	1	1			
	neither		2		1	1	
Case 2	1 yaacukẃiɬass ʔucačiƛ ʕaʔukʔi	mismatch	2	1			1
	2 yaacukẃiɬass ʔuucuʔuk ʕaʔukʔi	match (imperfect)					
	neither		2		1	1	
Case 3	1 ƛiiḥšiƛẃiɬass ʔucačiƛ ʕaʔukʔi	match (perfect)	1		1		
	2 ƛiiḥšiƛẃiɬass ʔuucuʔuk ʕaʔukʔi	mismatch	0.5				0.5[1]
	neither		1			1	

There is no clear pattern from this data, and if anything it suggests there is no preference for perfectivity matching. This appears to contradict the data from §4.2.1.1. I believe there are a few possible explanations for this.

The first is the peculiarities of the speech of Checleseht speaker Sophie Billy (marked as SB in Table C.1). I had noticed prior to running this test that in one-on-one sessions she was more willing to

[1] I used a slightly different example, but Marjorie and Bob agreed to the mismatching verb. Then when asked to repeat it, they both gave their own example sentences using different verbs.

accept perfectivity mismatching than other speakers, and she preferred the mismatching verbs in both cases she addressed.

The second was provided by Marjorie Touchie, who along with Bob Mundy represents the other cases where a speaker preferred mismatched perfectivity. Marjorie articulated her preference by saying "It says you haven't arrived yet, you're on your way." The perfectivity of the entire action was interpreted, for her, on the verb of going (*ʔucačiƛ* or *ʔuucuʔuk*) and not the verb describing manner (*yaacuk* 'walking'). This appears to be a change from what is present in the Nootka Texts (§4.2.1.1), and if I take this intuition seriously it may explain why perfectivity mismatching does occur in the modern language sometimes. Despite this preference, Bob and Marjorie would then go on later to give alternative ways of expressing Cases 2 and 3 that avoided coordinating these verbs. Julia Lucas refused all my examples and came up with her own sentences which used different grammatical structures. Fidelia Haiyupis either rejected examples and avoided serialization, or preferred matching aspect. Fidelia would puzzle over these for a while, and then produce alternative example sentences, always with matching aspect. So while straight speaker responses show that perfectivity mismatching is not a requirement, the context of speaker answers, as well as corpus counting (Table 4.1) shows that there is still a preference for it, although it is weaker than what appears to have been the case for the Nootka Texts.