

# Prospective Aspect in Tlingit

by

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# Abstract

This research investigates how future oriented phrases are constructed in Tlingit, a branch of the Na-Dene Athabaskan language family, spoken in Southeast Alaska, the Yukon, and parts of northern BC. Utilizing semantic fieldwork elicitation methods this work presents a thorough semantic analysis of a prospective trimorphemic aspect cluster necessary for a future reading, and contributing to a missing part of theoretical understanding in the Tlingit linguistic literature. Because the three morphemes under discussion are triggered in other verbal environments, a clearer semantic understanding of how they function will also present interesting theoretical questions for future research, as well as provide the building blocks for teaching second language learners about this cluster.

## Lay Summary

The goal of this research is to make a relatively complicated part of how verbs are constructed in Tlingit, a First Nations language, as approachable as possible. Theoretically, this research contributes to a better global understanding of semantic categorization and semantic theory by including an understudied language in that dialogue. Applicably, having a better understanding of what parts of the verb mean, as is the main point of this research, will hopefully make it easier for second language learners of this language to learn different verbal constructions.

## Preface

This thesis is the original, unpublished, independent work by the author, H. Burge. The fieldwork reported throughout the work was covered by UBC Ethics Certificate number H17-01287.

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## List of Abbreviations

.	glottal stop
√	root
1S	1st person subject
3O	3rd person object
3S	3rd person subject
CL	classifier
CONJ	conjugation
DET	determiner
DUB	dubitative
Hμ	stem variation marker
INVAR	invariable
IRR	irrealis
MD	modal
PFV	perfective
PST	past tense
REL	relative clause
REP	repetitive
THEM	thematic prefix
VAR	variation

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**Ax xáni. Ixsixán.**

**Kúnáx** gunalchéesh ldakát yeewháan!

## Dedication

*Haa dachxánx'i sáani ká  
haa tlagu kwáanx'i yán  
Gunalchéesh*

# Chapter 1

## Introduction: Prospective Aspect in Tlingit

This thesis proposes a morpho-semantic analysis of a trimorphemic cluster (*g-u-g-*) necessary to express a prospective aspectual reading in the Tlingit language. That construction is demonstrated in example 1 below<sup>1</sup>.

### Example 1.

kukasa.ée

k-	u-	k-	a-	sa-√.ée
Ø-g-	u-	g-	x-	s-√.i- Hμ
3O-g.CJ-IRR-g.MD-1S-	CL-√cook-VAR			
“I will cook it.”				(MH 2016)

This entails looking at the three morphemes needed in this cluster individually, determining their semantic contribution, and then utilizing a compositional semantic analysis to present a clearer understanding of the semantics of prospective aspect in Tlingit in general. The purpose of this is threefold. One, to contribute to a better understanding of linguistic theory as a whole by including Tlingit in a global dialogue about morpho-semantics, expanding the field and expanding its appreciation for indigenous knowledge. Two, to continue developing our understanding of Tlingit semantics in particular. And most importantly, three, with the hope that with a clearer understanding of how future events are expressed in Tlingit, second language learners will have an easier time learning, and language teachers of Tlingit will have an easier time teaching the prospective aspect forms in Tlingit.

This work then aims to be as approachable as possible while also being attentive to semantic theory. Chapter 1 introduces the language both culturally and linguistically. The focus first is on grounding the language in section 1.1 by exploring the land in which the language was born, and the areas in which the consultants who offered their linguistic insight to this work are from. Section 1.2 discusses the methods used to elicit the examples used throughout the thesis. Section 1.3 gives an overview of the orthography used for those examples. Section 1.4 will review pertinent linguistic concepts needed to understand fully the examples used throughout the work. Section 1.5 reviews previous linguistic research focused on Tlingit, upon which this work is based. Section 1.6 will present an introduction to the prospective aspect cluster in Tlingit.

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<sup>1</sup> See page ix for glossing abbreviations.

Chapter 2 reviews the theory behind aspect, modality, irrealis, and compositional semantic analysis in general.

Chapter 3 focuses on the **conjugation prefix *g-***, reviewing first conjugation prefixes in general, before narrowing in on *g-*'s aspectual semantic function.

Chapter 4 focuses on the **irrealis marker *u-***, providing an explanation for what it means to be irrealis in Tlingit, reviewing the marker's distribution throughout the language, and suggesting possible analyses of its semantic contribution.

Chapter 5 looks at modality across the language first, before focusing on the the **modal *g-***'s specific modal force and flavour, arguing that any modal semantics being contributed in a verb form is coming from this morpheme.

Chapter 6 brings together all three verbal prefixes (***g-u-g-***) and presents a compositional semantic analysis for how all three morphemes interact in order to give a prospective aspectual reading.

Chapter 7 concludes the thesis.

## 1.1 Lingít Aaní, Tlingit Land

Tlingit is a branch of the Na-Dene Athabaskan language family. It is spoken in Southeast Alaska in the United States, as well as Northern British Columbia and the Yukon Territory in Canada. It is estimated that there are 200 speakers, 50 of whom are fluent first language Tlingit speakers, mostly in their 80s (Twitchell 2016). Like many indigenous languages, Tlingit is highly endangered, suffering a huge loss of traditional knowledge with each fluent elder's passing. Yet also like many indigenous languages that continue to battle colonization, Tlingit is in the midst of a language revitalization movement. Figure 1 below shows traditional Tlingit country, with the differing communities (*Kwáans*) outlined as well.



Figure 1. Lingít Aaní. (Tlingit Readers Inc.; produced by the late Andrew Hope III)

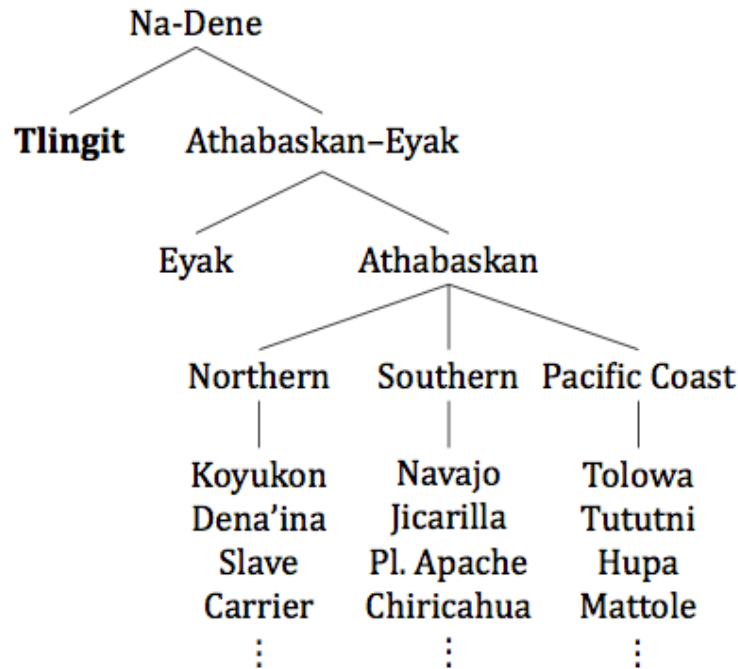


Figure 2. Na-Dene Family Tree (Crippen 2013)

Figure 2 demonstrates the relationship between Tlingit and its language relatives. It is important to note that while there is a historical linguistic relationship between Tlingit and other Na-Dene languages, Tlingit is not mutually intelligible with any of its relations.

Figure 3 gives a dialect tree, demonstrating dialectal relations, but is not intended to imply hierarchy.<sup>2</sup> There is no inherent value judgement based on the dialects' placement in the dialect tree, nor does the tree show speaker population size. Instead the tree shows historical relationships between dialects, which is based on phonological phenomena.

<sup>2</sup> Dialect distinctions are based on phonological phenomena, with no syntactic or semantic distinctions having been thoroughly researched to date. The dotted line to and from the Transitional dialect indicates shared phonological phenomena between Southern and Northern Tlingit, as well as with Inland Tlingit, but again this is a developing field of study. (Crippen 2017 p.c.)

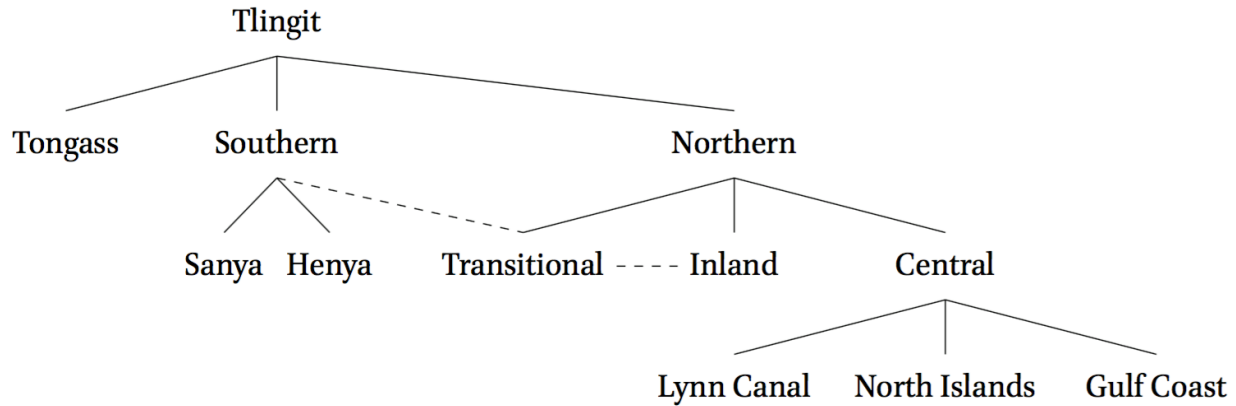


Figure 3. Tlingit Dialects (Crippen 2013)

Four fluent Tlingit elders were consulted for this work, with four clans, three communities, and three dialects represented. Keiyishí Bessie Cooley (BC in examples) is an Inland speaker, Guneiwí Marsha Hotch (MH) is a Lynn Canal speaker and K'altseen Carolyn Martin (CM) & Keihéenák'w John Martin (JM) are North Island speakers.

K'altseen Carolyn Martin is of the Wooshkeetaan clan from Xunaa Káawu (Hoonah, Alaska), and is Eagle moiety. As a respected elder, she has assisted other linguists such as Seth Cable and Dzéiwsh James Crippen, and was an elder in residence for a term at the University of British Columbia, consulting for a field methods course in 2014. She currently resides in Juneau, Alaska, and regularly participates in language revitalization efforts within the community.

Keihéenák'w John Martin is T'akdeintaan clan also from Xunaa Káawu (Hoonah, Alaska) and is Raven moiety. Similarly he has mentored linguists Seth Cable and Dzéiwsh James Crippen, and was an elder in residence for the field methods course at the University of British Columbia in 2014. He also resides in Juneau, Alaska, and is a constant presence in language revitalization efforts, participating in language and culture camps, and assisting language professors such as X'unei Lance Twitchell at the University of Alaska Southeast.

Keiyishí Bessie Cooley is Kookhittaán clan of the Pit House, and is Raven moiety. She is Yanyeidí yádi, and Deisleen Kwáan from Teslin, Yukon. She mentored linguist Jeff Leer for a number of years, and has participated in a number of linguist trainings. She is a huge driving force for language revitalization in the interior parts of Tlingit country. She was also an elder in residence for a term at the University of British Columbia in 2013.

Guneiwí Marsha Hotch is Gaanaxteidí clan from Jilkaat Kwáan of Klukwan, Alaska. She is a Tlingit language professor at the University of Alaska Southeast, and is involved with a number of grants focused on language revitalization.



## 1.2 Elicitation Methods

The original data presented in this thesis was collected using a number of semantic elicitation techniques. One technique utilized was presenting consultants with an explicit context, either in English or in Tlingit, and then giving a sentence in Tlingit to judge for felicity, following Matthewson 2004's work on semantic elicitation techniques. Vander Klok's 2014 modal questionnaire was also used, with contexts changed to be more culturally appropriate for Tlingit. Some translation tasks were also incorporated, either from Tlingit to English or vice versa. Grammaticality judgements, where a consultant is asked to determine whether or not a sentence is grammatical, were also elicited.

The data presented here was collected in the summer of 2016, winter of 2016 and the summer of 2017, in Juneau Alaska, Haines Alaska and in Teslin Yukon.<sup>3</sup> The examples throughout the work will specify which speaker or speakers provided the data being demonstrated. The rest of the data presented was adapted from Edwards 2009 or Twitchell 2016 which will also be noted next to the example as necessary. Speaker comments (SC) are also noted when they were given with each example.

The notation used throughout the example sets in this work includes a \* which indicates an ungrammatical sentence, a # which indicates an infelicitous sentence in that particular context, but which is still grammatical, and a ? which indicates an uncertainty by the speaker, and is explained in that example's notes.

## 1.3 Orthography

As this work is semantic in nature, and intended to be as useful as possible for language learners, examples will be written in the standard community orthography. Below in figure 4 is a representation of both the consonant and vowel inventory of Tlingit in the International Phonetic Alphabet (IPA) for reference.<sup>4</sup>

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<sup>3</sup> Funding was provided by an individual Jacobs Research Funds grant (2016), and a group Jacobs Research Funds grant (2017).

<sup>4</sup> For a more complete analysis of Tlingit phonology, interested readers are encouraged to refer to Leer 1991, or Crippen 2017.

	<i>anterior</i>					<i>posterior</i>					
	<i>bilabial</i>	<i>alveolar</i>	<i>postalv.</i>	<i>lateral</i>	<i>palatal</i>	<i>velar</i>	<i>lab.-vel.</i>	<i>uvular</i>	<i>lab.-uvul.</i>	<i>glottal</i>	<i>lab.-glot.</i>
<i>unasp. stop</i>	(p)	t				k	k <sup>w</sup>	q	q <sup>w</sup>		
<i>asp. stop</i>	(p <sup>h</sup> )	t <sup>h</sup>				k <sup>h</sup>	k <sup>hw</sup>	q <sup>h</sup>	q <sup>hw</sup>		
<i>ejv. stop</i>		t'				k'	k' <sup>w</sup>	q'	q' <sup>w</sup>	ʔ	(ʔ <sup>w</sup> )
<i>nasal</i>	(m)	n		(l)							
<i>plain fric.</i>		s	ʃ	ɬ		x	x <sup>w</sup>	χ	χ <sup>w</sup>	h	(h <sup>w</sup> )
<i>ejv. fric.</i>		s'		ɬ'		x'	x' <sup>w</sup>	χ'	χ' <sup>w</sup>		
<i>unasp. aff.</i>		ts	tʃ	tɬ							
<i>asp. aff.</i>		ts <sup>h</sup>	tʃ <sup>h</sup>	tɬ <sup>h</sup>							
<i>ejv. aff.</i>		ts'	tʃ'	tɬ'							
<i>approx.</i>				(l)	j	(uɹ)	w				

	<i>low tone <math>\hat{V}</math></i>				<i>high tone <math>\acute{V}</math></i>			
	<i>short <math>\hat{V}</math></i>		<i>long <math>\hat{V}:</math></i>		<i>short <math>\acute{V}</math></i>		<i>long <math>\acute{V}:</math></i>	
	<i>front</i>	<i>back</i>	<i>front</i>	<i>back</i>	<i>front</i>	<i>back</i>	<i>front</i>	<i>back</i>
<i>high</i>	ì	ù	ì:	ù:	í	ú	í:	ú:
<i>mid</i>	è		è:		é		é:	
<i>low</i>		à		à:		á		á:

Figure 4. Tlingit Consonant & Vowel Inventory in IPA (Crippen 2017)

Figure 5 shows the community orthography that is used throughout Tlingit country with the exception of some interior communities who utilize an orthography developed by Leer (1991). While Keiyishí Bessie Cooley is from the interior, her community of Teslin has recently transitioned to the coastal orthography system and so her examples that are shown in chapter 5 will be written in that system as well.

	<i>anterior</i>					<i>posterior</i>					
	<i>bilabial</i>	<i>alveolar</i>	<i>postalv.</i>	<i>lateral</i>	<i>palatal</i>	<i>velar</i>	<i>lab.-vel.</i>	<i>uvular</i>	<i>lab.-uvu.</i>	<i>glottal</i>	<i>lab.-glot.</i>
<i>unasp. stop</i>	(b)	d				g	gw	ḡ	ḡw		
<i>asp. stop</i>	(p)	t				k	kw	ḱ	ḱw		
<i>ejv. stop</i>		t'				k'	k'w	ḱ'	ḱ'w	.	(.w)
<i>nasal</i>	(m)	n		(ṇ)							
<i>plain fric.</i>		s	sh	l		x	xw	ṡ	ṡw	h	(hw)
<i>ejv. fric.</i>		s'		l'		x'	x'w	ṡ'	ṡ'w		
<i>unasp. aff.</i>		dz	j	dl							
<i>asp. aff.</i>		ts	ch	tl							
<i>ejv. aff.</i>		ts'	ch'	tl'							
<i>approx.</i>				(l)	y	(y̥)	w				

	<i>low tone Ṽ</i>				<i>high tone Ṽ́</i>			
	<i>short Ṽ</i>		<i>long Ṽ́:</i>		<i>short Ṽ́</i>		<i>long Ṽ́́:</i>	
	<i>front</i>	<i>back</i>	<i>front</i>	<i>back</i>	<i>front</i>	<i>back</i>	<i>front</i>	<i>back</i>
<i>high</i>	i	u	ee	oo	í	ú	ée	óo
<i>mid</i>	e		ei		é		éi	
<i>low</i>		a		aa		á		áa

Figure 5. Community Orthography (Crippen 2017)

#### 1.4 Brief Linguistic Overview

Tlingit, like many of its Na-Dene relatives, is a multi-morphemic language with complex morpho-syntax and morpho-phonology.

Tlingit has a two tone system, distinguishing high and low tones. High tone is marked as shown in figure 5 above. Low tone is left unmarked.

Morpheme ordering is still being researched (see Crippen 2017 for further discussion) but the examples in this work are most commonly Object-Subject-Verb ordering, where 'Object' and 'Subject'

do not refer to noun phrases but to the morphemes within the verb, as shown in example 1, repeated from above.<sup>5</sup>

### Example 1. Repeated

kukasa.ée  
 k- u- k- a- sa-√.ée  
 Ø- g- u- g- x- s- √.i- Hμ  
 3O-g.CJ-IRR-g.MD-1S- CL-√cook-VAR  
 “I will cook it.” (MH 2016)

Also demonstrated in example 1 is the *g-u-g* trimorphemic cluster that typically occurs at the left edge of the verb form, between the object and the subject prefixes. The conjugation prefix *g-* always appears before the modal prefix *g-* but the irrealis marker *u-* can appear either between the two other morphemes, or after the modal morpheme itself. While this is likely due to phonology, the syntactic analysis of the irrealis’s base placement is still ongoing (again see Crippen 2017 for further discussion).

## 1.5 Literature Review

While it is undeniable that the real experts of Tlingit are Tlingit people themselves that have been speaking, playing, orating, and constantly breathing life into their own language for time immemorial, like many Northwest Coast languages, the first linguistic documentation of Tlingit was done by Boas (1917).

The linguistic contributions on which this work rests were completed by Jeff Leer, Seth Cable, and Dzéiwsh James Crippen, whose pertinent work will be summarized in turn. Important to note, what all of these works refer to as “future” this work refers to as prospective aspect. This follows Cable 2015 (which follows Abusch 1997, and Matthewson 2006) that argues future is not tense cross-linguistically.

### 1.5.1 Leer 1991

Leer 1991 provides much of the foundation for this thesis, and his work continues to be the primary source for other Tlingit linguists who build on his efforts.

Leer 1991 presents a four way complementary distribution of the conjugation prefixes (of which the prefix *g-* is a part) and thus provides our first understanding of what conjugation prefixes accomplish in Tlingit. This will be further discussed and expanded upon in Chapter 3.

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<sup>5</sup> OSV agreement ordering is not always the case, however. For discussion see Crippen 2017.

Leer 1991 also proposes a binary relationship between an unmarked realis and a morphologically marked irrealis, (*u-*) which will again be further expanded in Chapter 4.

Lastly, Leer 1991 labels the *g-* prefix as “modal” giving this work a direction to investigate when approaching this final morpheme in the cluster.

Importantly though, while Leer 1991 discusses all three morphemes, and their classes, the work was not semantically oriented, and many of the examples provided were abstractions of data Leer had collected through years of research (many examples did not have descriptions of contexts for example). This thesis acknowledges Leer 1991’s contribution to the field, while also developing an analysis more attentive to our current understanding of semantic theory.

### 1.5.2 Cable 2016

Cable 2016 provides a semantic analysis of what has been termed by Leer 1991 among others as the future form in Tlingit. The work proposes a more thorough modal analysis looking at the future and potential verb categories in Tlingit. It also briefly discusses the hortative verb mode. While Cable 2016 acknowledges the presence of three distinct morphemes that comprise the future verb form, the analysis itself treats the form as a single morphological chunk. The argument made in Cable 2016 then is that the future mode can only be circumstantial necessity<sup>6</sup>, and the potential can only be circumstantial possibility. This is summarized in table 1. below.

	Possibility	Necessity
Circumstantial	Potential	Prospective

**Table 1. Tlingit Modal Force and Flavour (Cable 2016)**

This thesis then takes much of Cable 2016 and applies it to a multi-morphemic semantic approach. In this instance, the multiple morphemes in question are a string of prefixes (*g-u-g-*) as shown in example 1 above. This will be further discussed in Chapter 5.

### 1.5.3 Crippen 2017

Crippen 2017 provides much of the background on how the irrealis *u-* behaves in Tlingit in particular, and though Crippen 2017 is still being drafted, it will also provide a thorough syntactic approach that will be able to provide a syntactic structure. The hope is then that the semantic analysis argued for

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<sup>6</sup> This term and modality terminology in general is explained in chapter 2, section 2.3, as well as revisited in chapter 5.

will align with that future syntactic structure work. Most notably Crippen 2017 argues that the irrealis marker functions as a clause typer, and is in line with Leer 1991's assessment that there is a binary distribution between a marked irrealis and an unmarked realis throughout the language system.

This will be further discussed in more detail in Chapter 4.

## 1.6 Conclusion

This chapter has given an overview of the area in which Tlingit is spoken, what the thesis will be focused on in general, and a literature review of pertinent linguistic research done to date. The next chapter will discuss the theoretical backgrounds used in the chapters 3-6 analysis of these three prefixes *g-u-g-* and their semantic contributions.

## Chapter 2

### Compositional Semantics, Aspect, Modality & Irrealis: In Brief

This chapter gives an overview of what linguistic theories this research relies on. Section 2.1 looks at what it means to be part of an aspectual system, versus a tense-based system. Section 2.2 reviews the modality literature and the assumptions I will make based on the semantic understanding of modality in general. 2.3 finally reviews the literature surrounding irrealis marking, discussing some common issues before presenting the theory this work will assume.

This work follows Heim & Kratzer 1998, (who built upon Frege 1892), in assuming a compositional semantics at work in Tlingit's complex morphological systems. This means that if there is a proper semantic understanding of individual morphemes, they should build upon one another to get a proper understanding of the whole.

A more formal explanation of compositional semantics in Tlingit will be presented in chapter 6.

#### 2.1 Aspect and Tense

##### 2.1.1 Tense

In grade school, it might have been taught that in English there is something called the past tense, and present tense. For English then, this expression of time looks something like table 2.

	<i>Example</i>
<b>Past</b>	she was sleeping
<b>Present</b>	she is sleeping

**Table 2. English Tense Examples<sup>1</sup>**

Tense was at one point believed to involve locating a situation relative to the utterance time, on a distinct timeline. Reichenbach 1947 however, determined that two distinct times were not enough to explain all temporal interpretations, and so introduced three distinct times instead. Klein 1994 then built on that assumption and created terminology for each of those times, which was later refined in the literature, as shown in table 3, drawing on Mucha 2015.

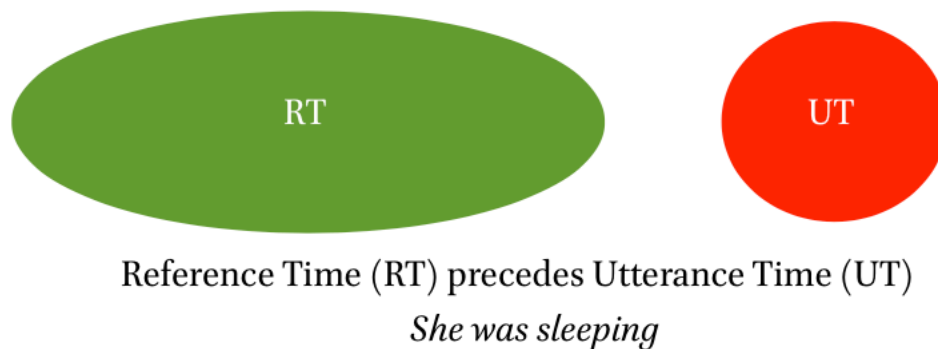
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<sup>1</sup> "Future tense" is intentionally left out of this brief overview due to the ongoing discussion about future's status as a tense category touched on in chapter 1.

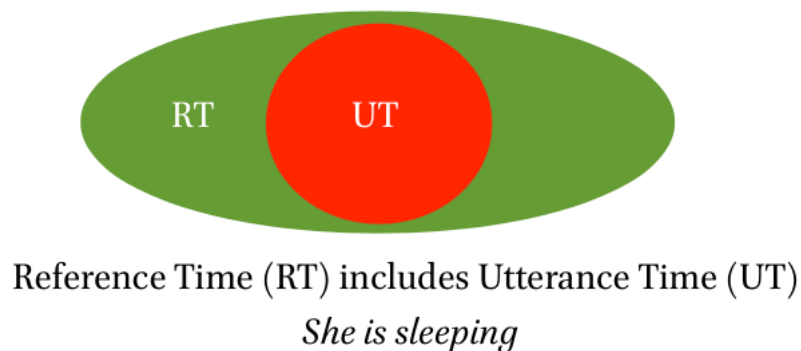
Utterance Time (UT)	The time at which the sentence under consideration is uttered
Event(uality) Time (ET)	The time of the relevant situation/ eventuality
Reference Time (RT)	The time span to which the speaker's claim is confined

**Table 3. Time Terminology (Mucha 2015: 8)**

Tense in Klein's system then is a relationship between the reference time (RT) and the utterance time (UT). Utterance time is also referred to in various literature as speech time (S). If we return then to table 2 the past tense phrase *she was sleeping* and the present tense phrase *she is sleeping* can be represented as in figure 6 and figure 7.<sup>2</sup>



**Figure 6. Past Tense**



**Figure 7. Present Tense**

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<sup>2</sup> The idea to show tense and aspect with colored circles came from Toews 2015.



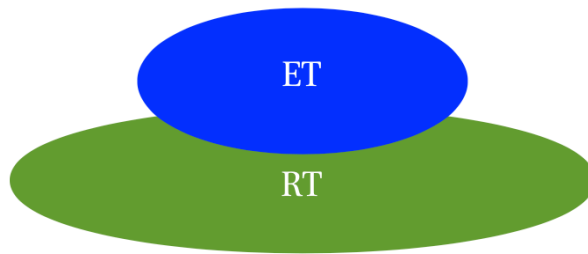
### 2.1.2 Aspect

If tense is concerned with the relationship between the reference time and the utterance time, then aspect per Klein 1994 is concerned with the relationship between the reference time and the event time. In English, examples are summarized in table 4.

	<i>Example</i>
<b>Perfective</b>	she slept
<b>Imperfective</b>	she sleeps/ she is sleeping
<b>Prospective</b>	she is going to sleep

Table 4. English Aspect Examples

As a visual graphic then, figures 8, 9, and 10 demonstrate what table 4 summarizes for English.



The Event Time (ET) is included in the Reference Time (RT)  
*she slept*

Figure 8. Perfective Aspect (Klein 1994 and Kratzer 1998 in Toews 2015: 184)<sup>3</sup>

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<sup>3</sup> Klein 1994 actually allowed a few different relations between ET and RT for perfective aspect, whereas Kratzer 1998 just allows the one demonstrated in figure 8 above.

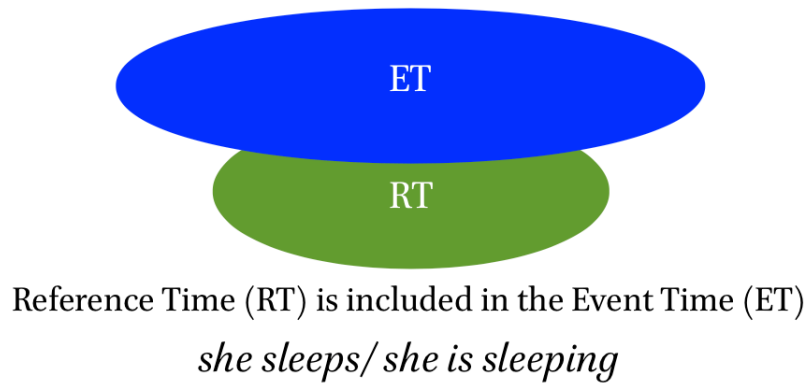


Figure 9. Imperfective Aspect (Klein 1994 and Kratzer 1998 in Toews 2015: 183)

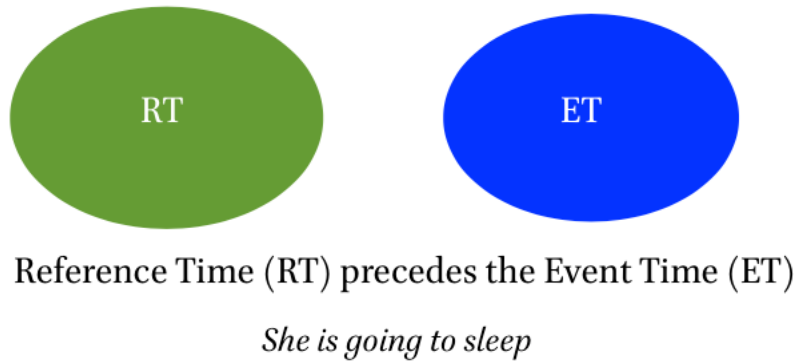


Figure 10. Prospective Aspect (Klein 1994 in Toews 2015: 334)

While Tlingit does have what Cable 2016 calls optional past tense, most of Tlingit's verb forms exhibit aspectual, rather than temporal contrasts. The Tlingit partner to the English tables 2 and table 4 is represented in table 5.

	<i>Example</i>
<b>Perfective</b> “she did it”	<b>wootaa</b> “she slept”
<b>Imperfective</b> “she is doing it; she does it.”	<b>tá</b> “she is sleeping”
<b>Prospective</b> “she will do it; it will happen.”	<b>gugatáa</b> “she will sleep”

**Table 5. Tlingit Aspect Examples (adapted from Twitchell 2016 and Edwards 2009)**

While past tense marking in general is not relevant to the discussion here, it is important to note why this research considers the future oriented verbal construction to be prospective aspect and not future “tense” in the first place. This is because it is possible in Tlingit to have a past future, where there is a past tense suffix marker as well as the prospective aspectual cluster we’re most interested in, and that combination creates a past future reading as in example 2 below.

**Example 2.**

**Past Prospective**

wé yaakw akgwahéinin

wé yaakw a- k- g- w- a- √.héin -in

wé yaakw a- k- g- u- a- Ø-√hen- Hμ -in

that boat 3O-g.CJ-g.MD-IRR-3S- CL-√own-VAR-PAST

“He would have owned it [that boat].”

(SC: But he was interrupted, something happened to prevent his owning it.)

(BC 2016)

The combination of prospective and past tense marking gives a *would have* reading, making the case that this prospective aspect cluster is in fact not a tense marker, but aspectual in nature.

Also important to note is that it is impossible in Tlingit to get a prospective reading without this trimorphemic combination. Example 3 utilizes the adverb *tomorrow* to force a future timespan. Only examples 3c and 3d are compatible, and only example 3d is prospective aspect with a *will* reading.

### Example 3.

#### a. Imperfective

\*seigánin wé yaakw ayahéin  
seigánin wé yaakw a- Ø-ya-√héin  
tomorrow DET boat 3O-3S-CL-√own/claim  
Attempted: “He/she owns the boat tomorrow.”

#### b. Perfective

\*seigánin wé yaakw aawahéin  
seigánin wé yaakw a- Ø-ÿu-Ø-√héin  
tomorrow DET boat 3O-3S-PFV-CL-√own/claim  
Attempted: “He/she owned the boat tomorrow.”

#### c. Horatative

seigánin wé yaakw angahéin  
seigánin wé yaakw a- n- ga- Ø-Ø-√héin  
tomorrow DET boat 3O-na.CONJ-G.MD-3S-CL-√own/claim  
“He/she should own the boat tomorrow.”

#### d. Prospective

seigánin wé yaakw akgwahéin  
seigánin wé yaakw a- k- g- w- a-Ø-√héin  
tomorrow DET boat 3O-ga.CONJ-ga.MD-IRR-3S-CL-√own/claim  
“He/she will own the boat tomorrow.”

Table 6 below shows examples of different aspectual combinations in adjunct clauses. The data presented in Table 6 is from Keiyishí Bessie Cooley elicited in the summer of 2017. It demonstrates what one might expect from aspectual combinations, where a prospective matrix and perfective adjunct clause are incompatible, as is an imperfective matrix with a prospective adjunct.<sup>4</sup> Some examples however, such as the perfective prospective combination may be acceptable in Tlingit, but the English translation provided would be ungrammatical. This work currently does not have a clear understanding of that discrepancy.

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<sup>4</sup> Having embedded clause data may also be relevant for this discussion, but will need to be elicited at a later date.

Matrix	Perfective	Imperfective	Prospective
<b>Perfective</b> “she did it”	<i>wé t’ukanéiyi <u>ku</u>wusteeyí, wuligéi</i>  “when the baby was born, s/he got big.”	<i>wé t’ukanéiyi <u>ku</u>steeyí, wuligéi</i>  “when the baby lives, it was big.”	<i>wé t’ukanéiyi yéi <u>ku</u>gwasteeyí, wuligéi</i>  “when the baby is going to be born, it was big.”  “when the baby is going to be born, it got big.”
<b>Imperfective</b> “she is doing it; she does it.”	<i>wé t’ukanéiyi <u>ku</u>wusteeyí, ligéi</i>  “when the baby was born, s/he was big”	<i>wé t’ukanéiyi <u>ku</u>steeyí, ligéi</i>  “when the baby lives, s/he is big”	<i>*wé t’ukanéiyi yéi <u>ku</u>gwasteeyí, ligéi</i>  Attempted: “when the baby is going to be born, s/he is big.”
<b>Prospective</b> “she will do it; it will happen.”	<i>*wé t’ukanéiyi <u>ku</u>wusteeyí, gu<sub>x</sub>lagéi</i>  Attempted: “when the baby was born, it will be big.”	<i>wé t’ukanéiyi <u>ku</u>steeyí, gu<sub>x</sub>lagéi</i>  “when the baby lives, he/she will be big.”	<i>wé t’ukanéiyi yéi <u>ku</u>gwasteeyí, gu<sub>x</sub>lagéi</i>  “when the baby is going to be born, he/she will be big.”  (Note: Similar to if you use the hortative mode instead of prospective, because you don’t want him to be too small)

Table 6. Tlingit Aspectual Combinations in Adjunct Clauses<sup>5</sup>

Prospective aspect is currently under investigation in this thesis (figure 10 above). The discussion of aspect in Tlingit will be continued in Chapter 3 when the focus is on conjugation prefixes in particular.

<sup>5</sup> The English translations were provided by the speaker, so there are times when *he/she* is used, and times when *it* is used throughout this table as Tlingit does not distinguish between *he/she* or *it* morphologically.

## 2.2 Modality

While we live in the “real” or “actual” world, languages are capable of making reference to possible worlds. The idea of possible worlds is thought to originate with philosopher Gottfried Leibniz, coined in his 1710 work. For our purposes, it’s better summarized by Matthewson 2012 who states, “[While] we live in the actual world[,] [l]anguage can make reference to possible worlds. Possible worlds are all the different ways the world could have been.”

Von Stechow (2006) summarizes modality as “a category of linguistic meaning having to do with the expression of possibility and necessity.” Kratzer 1991 postulates that modality across languages can be distinguished in terms of “three dimensions” summarized in table 7 below. This work then follows Kratzer 1991 where there is a distinction between force and flavour (where the modal base and ordering source make modal flavour) being investigated.

<b>Dimension 1</b>	<b>Modal Force</b> Possibility, necessity, weak necessity etc.
<b>Dimension 2</b>	<b>Modal Base</b> Circumstantial vs. Epistemic
<b>Dimension 3</b>	<b>Ordering Source</b> Deontic, bouletic, etc.

**Table 7. Modal Dimensions (Kratzer 1991)**

Looking at dimension 1 first, Kratzer 1991 proposes that languages distinguish between what is possible (or **can** be the case) and what is necessary (or what **must** be the case). Weak necessity is when something does not necessarily have to be the case, but there is a stronger chance of it being so, than it merely being possible. That is formalized in table 8.

Dimension 1	Modal Force
Possibility	A proposition $p$ is a <b>possibility</b> in a world $w$ with respect to a modal base $f$ and an ordering source $g$ iff $\neg p$ is not a necessity in $w$ with respect to $f$ and $g$ .
Necessity	A proposition $p$ is a <b>necessity</b> in a world $w$ with respect to a modal base $f$ and an ordering source $g$ iff the following condition is satisfied: For all $u \in \bigcap f(w)$ there is a $v \in \bigcap f(w)$ such that $v \leq_{g(w)} u$ and for all $z \in \bigcap f(w)$ : if $z \leq_{g(w)} v$ , then $z \in p$ .
Weak Necessity	A proposition $p$ is a <b>weak necessity</b> in a world $w$ with respect to a modal base $f$ and an ordering source $g$ iff $p$ is a better possibility than $\neg p$ in $w$ with respect to $f$ and $g$ .

Table 8. Kratzer 1991 Dimension 1 Force Formalization

Dimension two concerns modal bases, which Kratzer 1991 argues is a binary distinction between circumstantial and epistemic modality. The difference between the two is summarized in table 9.

Dimension 2	Modal Base
Circumstantial	(possible or necessary) in view of the circumstances
Epistemic	(possible or necessary) in view of the available evidence

Table 9. Kratzer 1991 Dimension 2 Modal Base Definitions

Dimension 3 then is a restriction on dimension 2 in the sense that it is a subcategorization of the modal flavour. This includes deontic modality, which is a subset of circumstantial modality and is defined by Kratzer 1991 to be (possible, weakly necessary or) “necessary in view of the law.”

This work investigated modal force and flavour that included deontic modality as a sub-flavour of circumstantial modality, which is why it will be included as its own row in subsequent tables and charts.

To summarize the discussion presented by Kratzer on modality, table 10 shows examples in English. These sentences both serve as examples of modality in English, and were also the target sentences for the research into modality in Tlingit as we will see later in chapter 5.

	Possibility	Weak Necessity	Necessity
Circumstantial	Potatoes CAN grow in Washington.		I MUST cough!
Deontic	He CAN eat.	You OUGHT to do your homework before fishing	You MUST wear your seatbelt
Epistemic	Yatuteen MIGHT be making soap berries.	It SHOULD be raining in Juneau right now	James MUST be at the restaurant.

Table 10. Examples of English Modality

Important to note is how context dependent these particular sentences are to ensure the correct modal flavour is being expressed. While in English a word like *must* can express circumstantial, deontic, or epistemic modal flavours, not all languages divide modal contrasts in the same way. Meaning, that although a single word, such as *can* in English is described as being a circumstantial possibility modal in the context: *Potatoes can grow in Washington*, in the context of being allowed to eat, such as in the sentence *He can eat* the modal word *can* is a deontic possibility modal instead.

Table 11 then demonstrates the way modality is expressed in Tlingit, in relation to the modal theory proposed above.



	Possibility	Weak Necessity	Necessity
Circumstantial	<b>Hortative:</b> Wé k'únts' Waashdánx' dax kanga.aa  <i>"Let the potatoes grow  in Washington."</i>  <b>Potential:</b> Wé k'únts' Waashdanx' kungaa.aa  <i>"The potatoes might  grow in Washington."</i>		#
Deontic	<b>Potential:</b> At gwaaxaa  <i>"He/she might eat."</i>	<b>Prospective:</b> I sgóon yéi jineiyí yán saní s'é aagáa tsáa shakgeelxóot'  <i>"Finish your  schoolwork first, then  you will go spin  casting."</i>	#
Epistemic	#	#	#

Table 11. Examples of Modality in Tlingit

We will return to these charts, and modality in general in chapter 5.

### 2.2.1 Some Notes on *gwál*

The dubitative marker *gwál* is another understudied particle in Tlingit, but because it is part of Cable 2016's analysis, and will appear in some examples throughout this work, it's important to note here. There is contention about whether or not an overt dubitative marker *gwál* is obligatory in potential verb modes. For some language consultants, all potential verb modes require an overt dubitative marker, while for other consultants such as those Cable 2016 worked with, the dubitative marker is optional. This has serious implications for Cable 2016's modal analysis of those markers, as well as the potential verb mode as a whole if dubitation is considered as part of that verb mode. Twitchell 2016

believes *gwál* to be obligatory, though as you will see in examples throughout this work, some consultants will utilize *gwál* while others may not. While this is not the explicit focus of this research it does leave interesting questions for the future.

### 2.3 Irrealis

“Irrealis modality is a modality that connotes that the proposition with which it is associated is nonactual or nonfactual.” (Chung and Timberlake 1985). Like modality, which was discussed in the previous section, irrealis as a concept often deals with possible worlds.

Chung and Timberlake 1985 define irrealis vs. realis as the difference between non-actual and actual events. It is however a widely debated semantic category that is not well defined; some of the issues are discussed in Michael 2014. Michael 2014 argues that the language Nanti (Arawak) demonstrates a canonical realis based system, showing that languages can have a clear distinction between realized and unrealized events. Figure 11. is taken from Michael 2014, showing the distribution pattern for realis vs. irrealis marking in Nanti, and breaking down the semantic categorization that is typically argued to be expected in irrealis marking languages.

SEMANTIC PARAMETER	REALIS MARKING	IRREALIS MARKING
Temporal reference	Non-future	Future
Polarity	Positive	Negative
Hypotheticality	Actual	Hypothetical, (Conditional), (Counterfactual)
Speaker-Oriented Modality	∅	Imperative, Polite Directive/Exhortative
Agent-Oriented Modality	∅	Obligation, Need
Prospectiveness	∅	Purposive, Prospective complement

**Figure 11. Michael 2014 Irrealis marking in Nanti**

An entire thesis could be dedicated to thoroughly investigating what Michael 2014 calls a reality status marker with Tlingit in mind, but that is outside the scope of this work. Comparing figure 11. to Tlingit though, we see a distribution pattern that is quite similar. Distributionally, in Tlingit this marker appears in the prospective (4a), all negation environments (4b), the potential (4c) and in a small number of lexically specified verbs (4d).

#### Example 4.

##### a. Prospective

kukasa.ée  
 k- u- k- a- sa-√.ée  
 Ø-g- u- g- x- s- √.i- Hμ  
 3O-g.CJ-IRR-g.MD-1S- CL-√cook-VAR  
 “I will cook it.”

##### b. Negation

hél uxsa.ée  
 hél u- x- sa-√.ee  
 hél Ø-u- xa-sa-√.i- μ  
 NEG 3O-IRR-1S- CL-√cook-VAR  
 “I don’t cook it;  
 I am not cooking it.”

##### c. Potential

gwál kwasi.ée  
 gwál k- w- a- si-√.ee  
 gwál Ø-g- u- xa-si-√.i- μ  
 DUB 3O-g.MD-IRR-1S- CL-√cook-VAR  
 “Maybe I can cook it.”

##### d. Lexicalized Irrealis (Imperfective)

tukuwadáskw  
 tu- ku- wa- √dáskw  
 tu- g- u- Ø-√daskw -H  
 PREVERB-G.CONJ-IRR- CL-√quick-tempered-VAR  
 “S/he is quick-tempered.” (adapted from Twitchell 2017)

If we return to figure 11 then, Tlingit follows Nanti somewhat in marking realis/irrealis, where both mark irrealis for prospective, as well as negation, but depart when marking irrealis for anything else.

The existence and function of an irrealis as a semantic category continues to be a source of debate within the semantic tradition, as well as in other linguistic sub-disciplines. Palmer’s 2001 work reviews the intersections between modality and irrealis/realis systems, and summarizes the distribution patterns of a number of languages, one (Central Pomo) which is demonstrated in table 12 below compared to Tlingit.

	Central Pomo		Tlingit	
verb type	realis	irrealis	realis	irrealis
future		✓		✓
imperative		✓	✓	
conditional		✓	✓	
imperfective	✓		✓	
perfective	✓		✓	
negation	–	–		✓
hortative	–	–	✓	
potential	–	–		✓

**Table 12. Realis/ Irrealis Across Languages (adapted from Palmer 2001)**

The dashes in the Central Pomo column indicate an unavailability of the data, but the main takeaway is that cross-linguistically what has been labeled as a realis verses irrealis distinction is quite variable (Palmer 2001).

Crippen's 2017 analysis shows that the irrealis prefix in Tlingit seems sensitive to clause typing, and syntactically is most likely located within C, but again that will need to be confirmed within Crippen's upcoming work.

## 2.4 Conclusion

This chapter has briefly reviewed the linguistic background theories that inform this researcher's understanding of compositional semantics, aspect, modality, and irrealis as linguistic concepts. It also provided background on how Tlingit is situated in relation to those theories, as will be discussed in much more detail in the following chapters.

## Chapter 3

### Tlingit Conjugation Prefix *g*-

This chapter looks at a set of four morphemes that have been labeled conjugation prefixes in Tlingit before exploring the one particular conjugation prefix (*g*-) that is part of the trimorphemic cluster needed for a prospective aspectual reading. An important note, there is a *g*- conjugation prefix, which must not be confused with the *g*- modal prefix which is a separate part of the prospective aspect.

The following sections 3.1-3.4 provide literature review on the conjugation prefixes, and then goes into the breakdown of the three different functions this morpheme set appears to have. Section 3.5 discusses issues that arise when attempting an analysis. Section 3.6 is the analysis proposed in relation to the functions discussed in section 3.2-3.4. Section 3.7 concludes this chapter.

The main take away from this section is that the conjugation prefix *g*- functions as a futurity marker, and combines with the other two prefixes discussed in chapter 4 and 5 to give rise to a prospective aspect reading in Tlingit.

#### 3. Conjugation Prefixes

##### 3.1 Background

There are four conjugation prefixes — *n*-, *g*-, *g*-, and  $\emptyset$ - (Leer 1991)— whose function is to put verbs into different modes (Twitchell 2016).<sup>1</sup> Previous literature (Leer 1991, Crippen 2013, Twitchell 2016) has treated them as being in complementary distribution. They have three different functions:

1. Directionals in motion verbs
2. Temporal prefixes
3. Lexically specified component of the verb itself.

These four prefixes (which Leer 1991 cites with an epenthetic vowel *a*-) have been treated in the literature as having equal weight in relation to one another (Leer 1991) as in figure 12.

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<sup>1</sup> The term “mode” has become part of the Athabaskanist literary tradition, referring to changes in temporality generally. It is somewhat ill defined, at least for Tlingit, but is used here for continuity.

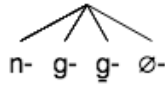


Figure 12. Conjugation Prefix Hierarchy (Leer 1991)

Even a brief investigation into distribution patterns however suggests that apart from some conjugation prefixes being more common than others, there's a different patterning relationship between certain prefixes that is not consistent with a privative four-way contrast. While it is outside the scope of this project to provide thorough analyses for all four conjugation morphemes, as we are really only concerned with one, it is useful to have a general understanding of the paradigm of which *g-* is a part.

### 3.1.1 Conjugation Prefix Distribution

The distributional patterns described here hold for all three of the conjugation prefixes' functions (aspectual, motion, and lexical). Crippen (2017 p.c.) proposes that the four conjugations comprise an asymmetrical set, when considering their lexical distribution, which looks something like figure 13.

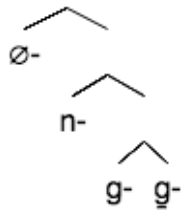


Figure 13. Conjugation Prefix Hierarchy (Crippen 2017)

Meaning that a verb stem will lexically specify for either a *g-* or *g̃-* conjugation prefix, but not both, and while still being compatible with a *n-* and *∅-* conjugation prefix as well. This predicts a potential scope relationship between the morphemes, syntactically, and should also fall out semantically as well.

So do the facts fit into Crippen's (2017) proposal as shown in figure 13?

The generalizations presented in tables 13-16 are made based on data from Twitchell 2017 but are themselves created by the author. They hold for the conjugation prefixes' aspectual and lexical function, but not for their motion function which is discussed in 3.2.

	∅-	n-	<i>g-</i>	<i>g̃-</i>
Doesn't Exist	—	—	—	—

Table 13. A root that only takes one conjugation prefix

Table 13 shows that there is no attested verb root that is limited to being realized with just one conjugation prefix. This makes some logical sense, considering the unlikelihood that a verb would only be allowed one aspectual conjugation. As Tlingit’s temporal system has been described in terms of aspect (Leer 1991, Crippen 2013, Twitchell 2016, Cable 2016) and these conjugation prefixes appear to have an aspectual function which will be talked about in section 3.3.2, for a verb to only be able to conjugate into one temporal mode (in this case an aspectual mode) would be odd, cross-linguistically. Even verbs that are restricted aspectually (the verb ‘to see’  $\sqrt{\text{tin}}$  cannot be imperfective etc.) are able to be conjugated into the prospective for example. Of course this also hinges on the fact that the  $\emptyset$ -morpheme really exists, which will be discussed in section 3.5.1, but for now we’ll assume table 13 corresponding to a null set in Tlingit.

What about verb roots that are restricted to just two conjugation prefixes? These possibilities are shown in table 14 below.

The examples in tables 14-16 were chosen because they were specifically not motion verbs, and for their minimal preverbal content, to maintain transparency.

Examples	$\emptyset$ -	n-	$\textcolor{teal}{g}$ -	$\text{g}$ -
$\sqrt{\text{i}}$ “cook”	✓	✗	✓	✗
$\sqrt{\text{aa}}$ “grow”	?	✓	✓	✗
$\sqrt{\text{choox}}$ “mooch”	?	✗	✓	✓

**Table 14.** Attested verbs that only take two conjugation prefixes

Determining distribution patterns is important for two reasons. First, a main goal of this thesis is to determine the semantic contribution of the  $\textcolor{teal}{g}$ - conjugation prefix, and in order to do that, it’s important to know the attested conjugation paradigms in Tlingit. Second, it raises interesting questions about the other three conjugation prefixes aspectual, motion, and lexical functions that may not be answered here, but will leave a trail for future research to be followed. Table 14 also is not predicted by the hierarchy proposed by Crippen 2017 (p.c.) demonstrated in figure 12.

What about roots that allow for three conjugation prefixes? That seems to be possible only if one assumes the existence of zero. For that reason, the verb examples presented in table 15 are roots that have been documented in Twitchell 2017 (with data from Edwards 2009, Naish and Story 1973, Leer 1973) as being “zero” verbs (or verbs that lexically specify for the  $\emptyset$ - conjugation prefix, which we discuss in section 3.4). This table represents roots that are capable of taking three conjugation prefixes at different times. These verbs don’t seem to form a natural class, but that is an avenue worth pursuing in future work.

Examples	$\emptyset$ -	n-	$\textcolor{teal}{g}$ -	$\text{g}$ -
$\sqrt{\text{gaa}}$ “store”	✓	✓	✓	—
$\sqrt{\text{gook}}$ “run”	✓	✓	✓	—

**Table 15.** Attested verbs that only take three conjugation prefixes

Last, is the question of whether there is a verb root that takes all four conjugation prefixes (and is not a motion verb). Based on Twitchell's 2017 verb compilation the answer seems to be no. Motion verbs are excluded due to the conjugation prefixes' other function of directionality, which will be shown in example 5 below to allow a single verb root to take all four conjugation prefixes. There is some debate about a verb root *√teen* "see" and whether or not that might be the one exception. There are a number of verbs that have historically been considered separate verbs (Leer 1991) such as *√teen*, but some Tlingit scholars (Crippen & Twitchell p.c.) believe it is possible that they are in fact a single verb with robust morphology that accounts for differing semantic readings. As that is an ongoing conversation, it will be left here.

Examples	Ø-	n-	g-	g-
Doesn't Exist	—	—	—	—

Table 16. Root that takes four conjugation prefixes

So why does this matter? First, as past literature has treated the conjugation prefixes paradigmatically (Leer 1991, Crippen 2013) it's beneficial to consider their distributional patterns as a whole before zeroing in on one conjugation prefix (*g-*) and one function of that prefix (aspectual). Second, it shows that there is still a lot left to consider about these prefixes that simply cannot be covered by one research endeavor. Finally, while the distributional pattern is still not fully understood, it does show that the *g-* conjugation prefix is in some sort of relationship with the other conjugation prefixes, and leaves room for further future research into that connection.

What follows then is a description of the conjugation prefixes in their three different functions, starting with the motion verb paradigm.

### 3.2 Motion Paradigm

Example 5 illustrates the motion function of these four prefixes. Example 5a demonstrates an imperative form of *to boat* (or drive) with the *g-* prefix, here in its motion function meaning *upward*. 5b similarly shows the verb root with the *n-* conjugation prefix in its motion function, meaning *toward there*, though for this construction it is also necessary to have some preverbal content as well. 5c is similar to 5a but with the *g-* prefix meaning *downward* in this context. Finally 5d shows a Ø- conjugation prefix for a *to there* reading.

#### Example 5.

- |  |   |
|--|---|
| <p>a.     <b>g- conjugation</b><br/> Gakúx<br/> g-     a-    √kúx<br/> g-     a- Ø-√kux- H<br/> G.CONJ-2S-CL-√boat-VAR<br/> "boat upstream!"</p> | <p>b.     <b>n- conjugation</b><br/> Aadé nakúx<br/> aa-dé     n-     a-    √kúx<br/> aa-dé     n-     a-Ø-√kux- H<br/> towards=it N.CONJ-2S-CL-√boat-VAR<br/> "boat toward there!"</p> |
|--|---|



- c. **g- conjugation**  
 Gakúx  
 g- a- √kúx  
 g- a- Ø-√kux- H  
 G.CONJ-2S-CL-√boat-VAR  
 “boat downstream!”
- d. **Ø- conjugation**  
 Át kúx  
 át √kúx  
 át Ø- Ø- Ø-√kux- H  
 it Ø.CONJ-2S-CL-√boat-VAR  
 “boat to there!” (BC, 2017)

This is perhaps the most straightforward example of a clear one-to-one correspondence between morpheme and meaning when considering these prefixes.<sup>2</sup> The examples have been purposefully conjugated in the imperative form to avoid as much preverbal content as possible. In Tlingit, the imperative form of a verb is the least morphologically complex, in general. The data in example 5 follows Twitchell’s 2016 generalizations which have been summarized in table 17 below:

Conjugation Prefix	Description
<i>g-</i>	upward motion
<i>n-</i>	unbounded motion
<i>g-</i>	downward motion
Ø-	motion that has an endpoint

**Table 17. Motion & Conjugation Prefixes**

There are actually quite a number of verbs that fall into a motion classification in the language.<sup>3</sup> Walking for example (the Tlingit singular root being: √gut) is a motion verb, but so is the Tlingit root √ha for hunger (which literally means to move invisibly). Hunger arrives at a person, and so is classified as a motion verb. Motion verbs are able to utilize the motion function of these four prefixes as in table 17.<sup>4</sup>

While the generalizations presented in table 17 do seem to hold across motion verbs in general when the intent is to describe the direction of motion, the same clear semantic correspondence is not necessarily found in the conjugation prefixes’ two other functions, which we turn to discuss now.

<sup>2</sup> Whether the meaning shown in example 5 remains stable across all clause types is still under-researched.

<sup>3</sup> Twitchell’s 2017 Verb Dictionary draft (which includes Edward’s 2009 and Leer’s 1973 verb paradigms) currently has about 400 verbs classified as motion, though many of these have the same root, but are listed separately due to semantic differences. While these distinctions are useful for second language learners, they may not themselves be separate verbs in the way we think of differing verbs linguistically, and so there are likely fewer than 400 motion verbs in general. Of course, this list is not exhaustive.

<sup>4</sup> Motion verbs are thus classified by the relation to this paradigm. Whether there is another diagnostic to determine what makes a “motion verb” in Tlingit is left for further research.

### 3.3 Aspect Paradigm

Another function of the conjugation prefixes is what Leer 1991 referred to as Mode. Here we suggest that they fulfill an aspectual function. Less clear is what aspectual contribution each conjugation class contributes. A complete paradigm utilizing *one* verb root to demonstrate all four conjugation prefixes may in fact be impossible and if that's the case, it seems prudent to demonstrate what *is* possible in the language, and what that may tell us about these prefixes' relationship with one another generally.

#### 3.3.1 Aspectual Contribution

Now that we have a sense of the conjugation distributional patterns, what kind of aspectual contribution are these prefixes making? A generalization is made in table 18.

Conjugation Prefix	Description
<i>g</i> -	(part of) prospective
<i>n</i> -	progressive
<i>g</i> -	unspecified
∅-	imperfective

Table 18. Aspect and Conjugation Prefixes (summarized from Twitchell 2016)

Table 18 then shows that the *g*- conjugation prefix is part of the prospective aspectual cluster that is the main discussion of this work, as in examples in earlier chapters. The *n*- conjugation prefix is part of a progressive reading, which will be discussed in example 7. The *g*- conjugation prefix has yet to be explored as far as a clear aspectual contribution and may be under or unspecified. The ∅- conjugation prefix most often correlates with an imperfective aspectual reading.

This work is most interested in how *g*- contributes a futurity reading, and this claim is supported by example 6 below.

### Example 6.

#### a. Imperfective

$\text{xasa.ée}$   
 $\emptyset\text{-}\text{x}\text{a-}\emptyset\text{-}$        $\text{sa-}\sqrt{\text{.ée}}$   
 $\emptyset\text{-}\text{x}\text{a-}\emptyset\text{-}$        $\text{sa-}\sqrt{\text{i-}}$      $\text{H}\mu$   
 $3\text{O-1S-}\emptyset\text{.CONJ-CL-}\sqrt{\text{cook-VAR}}$   
 “I cook it; I am cooking it”

(Adapted from Edwards 2009)

#### b. Hortative

$\text{kasa.ee}$   
 $\emptyset\text{-}\text{k-}$      $\text{a-}$   $\text{sa-}\sqrt{\text{.ee}}$   
 $\emptyset\text{-}\text{g-}$      $\text{x}\text{a-}\text{sa-}\sqrt{\text{i-}}$      $\text{H}\mu$   
 $3\text{O-g.MD-1S-CL-}\sqrt{\text{cook-VAR}}$   
 “Let me cook it.”

(Adapted from Edwards 2009)

#### c. Potential

$\text{gwál k}\text{wasi.ee}$   
 $\text{gwál}$      $\text{k-}$      $\text{w-}$      $\text{a-}$      $\text{si-}\sqrt{\text{.ee}}$   
 $\text{gwál}$      $\emptyset\text{-}\text{g-}$      $\text{u-}$      $\text{x}\text{a-si-}$      $\sqrt{\text{i-}}$      $\mu$   
 $\text{DUB } 3\text{O-g.MD-IRR-1S-CL-}\sqrt{\text{cook-VAR}}$   
 “Maybe I can cook it.”

(Adapted from Twitchell 2016)

#### d. Prospective

$\text{kukasa.ée}$   
 $\text{k-}$      $\text{u-}$      $\text{k-}$      $\text{a-sa-}\sqrt{\text{.ée}}$   
 $\emptyset\text{-}\text{g-}$      $\text{u-}$      $\text{g-}$      $\text{x-s-}\sqrt{\text{i-}}$      $\text{H}\mu$   
 $3\text{O-g.CJ-IRR-g.MD-1S-CL-}\sqrt{\text{cook-VAR}}$   
 “I will cook it.”

(Adapted from Twitchell 2016)

Example 6a is presented for completeness, showing the  $\emptyset\text{-}$  conjugation prefix. The hortative verb mode in example 6b shows the  $\text{g-}$  modal which will be discussed in chapter 5. 6c shows a potential verb mode, but still without the  $\text{g-}$  conjugation prefix. It is 6d that really demonstrates that the  $\text{g-}$  conjugation prefix is necessary for a futurity reading in Tlingit. Meaning that the only environment in which you get futurity reading in Tlingit is the environment in which the  $\text{g-}$  conjugation prefix is present. The argument then is that it is the  $\text{g-}$  conjugation prefix that is contributing the futurity semantics in this cluster.

We will return to this example later, but for now, let's consider example 7.

### Example 7.

#### a. n- with progressive reading

$\text{Kei nak'éin}$   
 $\text{kei}$        $\text{na-}$        $\sqrt{\text{k'éi}}$        $\text{-n}$   
 $\text{kei}$        $\emptyset\text{-}$   $\text{na-}$        $\emptyset\text{-}\sqrt{\text{k'e-}}$      $\text{H}\mu\text{-n}$   
 $\text{preverb } 3\text{O-N.CONJ-CL-}\sqrt{\text{better-VAR-REP}}$   
 “s/he/it is getting better.” (Twitchell 2016)

#### b. lexicalized n-

$\text{Yak'éi}$   
 $\text{ya-}\sqrt{\text{k'éi}}$   
 $\emptyset\text{-}$   $\emptyset\text{-}$      $\text{ya-}\sqrt{\text{k'e}}$      $\text{-H}\mu$   
 $3\text{O-}\emptyset\text{.CONJ-CL-}\sqrt{\text{better-VAR}}$   
 “S/he/it is good” (Twitchell 2016)

#### c. lexicalized n-

$\text{Kana.aakw!}$   
 $\text{ka-}$        $\text{na-}$        $\sqrt{\text{aakw}}$   
 $\text{ka-}$        $\emptyset\text{-na-}$        $\emptyset\text{-}\sqrt{\text{akw-}\mu}$   
 $\text{them-}3\text{O-N.CONJ-CL-}\sqrt{\text{try -VAR}}$   
 “Try it!” (adapted from Twitchell 2017)

There is not a clean one-to-one correlation between form and meaning like we saw with the motion function, however. While in general *n-* does seem to be contributing something progressive, like in example 7a, this is not always the case, as in example 7b or 7c. Here we take progressiveness to mean something currently happening or underway.

Verbs that seem to lexically specify *n-* do not get a progressive reading everywhere the prefix appears (which will be shown in example 8 below). What is clear is that whenever a verb is conjugated for prospective aspect, the *g-* conjugation prefix is used (within the prospective aspect trimorphemic cluster).

Which leads us to the final function of these four prefixes: lexical specification.

### 3.4 Lexical Specification

There are three ways of approaching a description of what it means for conjugation classes to be “lexically specified”. Here lexicalization is taken to mean a part of a word that comes out of a speaker’s “word bank” as an integral part of the word. As an example, the word *dog* in English comes out of an English speaker’s “word bank” or lexicon as *dog*. If the word *dog* were to lose a letter, such as a *d* for example, the word becomes *og* and loses meaning altogether. The argument here then is whether or not certain parts of Tlingit verbs are in the lexicon similarly.

One is to assume that every verb lexically specifies one particular conjugation prefix as a default, with the most common default being  $\emptyset$ -. Then, in order to conjugate a verb as prospective for example, it’s a matter of replacing the default conjugation prefix with one more aspectually suitable for the context (*g-*).

Another possibility is that our previous understanding of conjugation classes as a four way paradigm was mistaken, and instead we only have three conjugation prefixes, with  $\emptyset$ - being truly absent. We address the issue of whether  $\emptyset$ - really exists in section 3.5.1, but for now if we think that perhaps  $\emptyset$ - is any underspecification without any real meaning, then we’re left with two more options when it comes to lexicalization. One being that there are in fact only three conjugation prefixes, and some roots specify them in the lexicon, and others don’t specify any at all.

Of course, the last logical option is that conjugation prefixes (regardless of the existence of a zero morpheme) are not lexically specified at all, which appears to be the traditional analysis (Leer 1991), with the verbal lexicon consisting of a root and a classifier. Overt discussion of lexicalization of these prefixes has not been made in Tlingit literature as far as this research is aware.

Let’s discuss each of these in turn before ultimately suggesting that there is some kind of lexicalization happening for these four prefixes.

#### 3.4.1 Lexical Specification of 3 Conjugation Prefixes

Verbs across Tlingit prefer certain conjugation classes as the “default”. This is most apparent in imperative forms which tend to be the least morphologically complex. This “preference” is overridden by other conjugation prefixes when a change in aspect is necessary. It would follow easily enough then to assume that these prefixes are lexicalized, emerging from the lexicon (the verb root is stored with its default conjugation prefix) with their conjugation prefix in tow, and that lexicalized prefixes are largely arbitrary. This is demonstrated in example 8 below, with 8a being the imperative form

showing the lexicalized conjugation prefix, and 8b and 8c showing its disappearance in the perfective and prospective verb forms.

**Example 8.**

**a. imperative**

at kanalshí  
 at ka- n- a- l- √shí  
 at ka- n- a- l- √shí- H  
 it THEM-N.CONJ-2S-CL-√compose-VAR  
 “Compose a song!”

**b. perfective**

at kawlishee  
 at ka- w- li- √shee  
 at ka- Ø- w- li- √she -μ  
 it THEM-3S-PERF-CL-√compose-VAR  
 “S/he composed a song.”

**c. prospective**

at kaguxlashée  
 at ka- g- u- x- la- √shée  
 at ka- Ø-g- u- g- la- √she -Hμ  
 it THEM-3S-g.CONJ-IRR-g.MD-CL-√compose-VAR  
 “S/he will compose a song.” (Adapted from Edwards 2009)

One possible wrench in that theory is an example like 9 below, where verbs appear to have the same root, yet different lexicalized conjugation prefixes.

**Example 9.**

**a. imperative**

at kanalshí  
 at ka- n- a- l- √shí  
 at ka- n- a- l- √shí- H  
 it THEM-N.CONJ-2S-CL-√compose-VAR  
 “compose a song!”

**b. imperative**

gashí  
 g- a- √shí  
 Ø-g- a-Ø- √shí- H  
 3O-G.CONJ-2.S-CL-√sing-VAR  
 “sing it!” (Adapted from Edwards 2009)

Homophony in verb roots is not uncommon in Tlingit and so example 9 may just be two homophonous roots. Yet this is not the only verb pair to have an identical surface realization, in this case √shí, and a (somewhat) related semantic meaning, but differing conjugation prefixes as their defaults. Example 9a is an *n-* conjugation verb, where example 9b utilizes *g-*. It's possible to say that within the lexicon perhaps these two roots are in fact the same, but once a thematic prefix and differing conjugation prefix is added, its semantic realization changes.

This leads to the next point, where we consider if a lexicalized proposal is necessary.

### 3.4.2 No Lexicalization

So what of our last, more traditional option?<sup>5</sup> This would follow if we say that these morphemes are inflectional and are added after the stem is taken from the lexicon. This is easy enough to implement when considering the aspectual function of these morphemes, as obviously inflection is not determined in the lexicon. This would also follow for our motion derivation function, as the specification for motion direction could be added after taking content from the lexicon as easily as aspectual inflection could be.

What does not follow for an anti-lexical approach is why verbs that *do* specify an overt conjugation class (so are not Ø-) do so without adding any real semantic content, be it directional, or aspectual in nature. Take a look at example 10 and example 11.

**Example 10.**

- a. **imperative**  
 itukla.aan  
 i- tu- **k-** la-√.aan  
 i- tu- **k-** la-√.aan-Ø  
 2S-THM-**G.CONJ**-CL-√kind-INV  
 “be kind!”
- b. **prospective**  
 kei tuguxla.aan  
 kei tu- **g-** **u-** **x-** la-√.aan  
 kei Ø-tu- **g-** **u-** **x-** la-√.aan- Ø  
 PREVERB 3S-THM-**G.CONJ**-IRR-**G.MD**-CL-√kind-INV  
 “s/he will be kind”

**Example 11.**

- |    |  |    |  |
|----|--|----|--|
| a. | <p><b>imperative</b></p> <p>at kanalshí</p> <p>at ka- n- a- l- √shí</p> <p>at ka- n- a- l- √shí- H</p> <p>it THEM-N.CONJ-2S-CL-√compose-VAR</p> <p>“compose a song!”</p> | b. | <p><b>prospective</b></p> <p>at kaguxlashée</p> <p>at ka- <b>k-</b> <b>u-</b> <b>x-</b> la-√shée</p> <p>at Ø-ka- <b>g-</b> <b>u-</b> <b>g-</b> la-√shi- Hμ</p> <p>it 3S-THEM-<b>G.CONJ</b>-IRR-<b>G.MD</b>-CL-√compose-VAR</p> <p>“s/he will compose a song” (Adapted from Edwards 2009)</p> |
|----|--|----|--|

We see a contrast between an imperative form 10a and a prospective form 10b. While in the prospective form the *g*- conjugation prefix is interacting (with other prefixes) to provide a prospective reading, that same reading is absent in the imperative. To show that the imperative is not necessarily getting a potential modal reading from the *g*- conjugation prefix, examples 11a and 11b are shown with an *n*- conjugation prefix. There truly appears to be some kind of lexicalization happening, splitting verbs up into (at least three) different classes. While a preliminary investigation suggests there are some similarities that may make semantic sense in how those classes are formed, it's too early to say yet what those distinctions might be.

Which brings us to the outstanding issues that have been hinted at previously, but will be discussed below.

<sup>5</sup> While previous literature does document verb roots in terms of what conjugation prefix is default (see Edwards 2009 among others), no formal proposal for a lexicalized approach has been suggested.

## 3.5 Issues

### 3.5.1 Does Ø Exist?

Does Ø- actually exist or is there really nothing there at all? This is a discussion that's posed a challenge to morphological analysis across a number of languages. While our overall focus is not on the Ø- conjugation prefix specifically, determining an assumption about its existence is necessary for a more complete understanding of conjugation prefixes in general. Here then, we'll briefly outline an argument for and against, but ultimately return to the assumption that some sort of zero morpheme postulated for Tlingit, but it's outside of the scope of this research to address the others.<sup>6</sup>

### 3.5.2 If Ø were Absent

First, let's consider whether the conjugation prefix Ø- is not instead the absence of content entirely. This would be a relatively easy analysis to accept *aspectually*, with Ø- most often corresponding to an imperfective verb type, making it the default. One could theoretically argue then that with the absence of any prefix specification (be it the other three conjugation prefixes or the perfective marker *j̥u-*) the default is actually semantically underspecified. This option is presented based on preliminary data gathered during the summer of 2017 fieldwork session, where traditionally analyzed "imperfective" verbal conjugations were given both an imperfective and perfective reading by the fluent speaker. As this is preliminary investigation and somewhat outside to scope of this work, it will be left to further research.

A little less likely, but still potentially reasonable, option would be to argue that while a large set of verbs come with *lexically* specified conjugation classes, there is also a set of verbs that come without specification at all. This leaves room for a default underspecification, and makes predictions about the need for a relatively uniform verb typing system in relation to the three realized conjugation classes. Meaning that we ought to find verbs that specify for *n-* for example, verbs with an understandable semantic connection, and so forth with the other two conjugation prefixes. Work to determine if that is in fact the case is still ongoing.

What troubles this approach is areas in which Ø- does seem to be contributing something, at least semantically. That leads us to the next section.

### 3.5.3 Ø- is Real?

What is Ø- contributing?

In our motion understanding of these four conjugation prefixes, it's signaling motion that has some kind of endpoint.

Aspectually, it may also seem as if it would make some sense to say Ø- is absent and the default for all verbs is an imperfective verbal conjugation. However, when you consider verbs that

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<sup>6</sup> See Leer 1991 for discussion on the Tlingit classifier system and the Ø- conjugation prefix in particular.

lexically specify for an overt conjugation class, like *g-*, in order to get an imperfective verb, you have to override that conjugation prefix with something, that something being  $\emptyset$ -. Take a look at example 12.

**Example 12.**

**a. imperative**

geesgáax̄  
 g- ee- s- √gáax̄  
 $\emptyset$ - g- ee- s- √gáax̄- $\emptyset$   
 3.O-G.CONJ-2.S-CL-√ask-INVAR  
 “Ask for it!”

**b. imperfective**

asgáax̄  
 a- s- √gáax̄  
 a-  $\emptyset$ -  $\emptyset$ - s- √gáax̄- $\emptyset$   
 3.O- $\emptyset$ .CONJ-3.S-CL-√ask- INVAR  
 “S/he is asking for it”

**c. hortative**

agaagasgáax̄  
 a- gaa- g- a- s-√gáax̄  
 a- gaa- g- a- s-√gáax̄- $\emptyset$   
 3.O-G.CONJ-G.MD-3.S-CL-√ask-INVAR  
 “Let him/her ask for it.” (Adapted from  
 Edwards 2009)

This is an example of a *g-* specified verb as shown in example 12a’s imperative form, in contrast with example 12b’s imperfective form that loses all overt conjugation marking in order to have an imperfective reading. While it could be the case that the imperative verb form has had a conjugation prefix inserted, and that the imperfective form is the default, this would go against the generalization that the imperative verb forms in Tlingit demonstrate the lexicalized specified conjugation prefix for that verb root. It would also mean that the *g-* conjugation prefix would have to be inserted in the hortative mode as well as in 12c, though neither 12a or 12c seems to have overt change in semantics to necessitate a conjugation class insertion in the first place.

Even for verbs that don’t lexically specify an overt conjugation marker, for continuity it would make more sense to suggest a  $\emptyset$ - morpheme that accounts for the motion function we see in example 5 as well as the aspectual information we get throughout the verbal paradigms, than it would to argue for two different systems.

### 3.5.4 Does it Matter?

Ultimately, while interesting, determining definitively whether the  $\emptyset$ - conjugation prefix is real won’t make much difference for an analysis looking specifically at the realized prefix *g-* which is the eventual goal, though it is pertinent for the paradigm as a whole. Second language teaching includes the  $\emptyset$ - prefix as part of the conjugation paradigm, and has served learners well so far. Of course this is a discussion worth continued pursuit for its own sake, but we leave it here for now, still with the assumption that some type of  $\emptyset$ - does in fact exist.



### 3.6 Homophony

Another potential issue that arises when considering the conjugation prefix paradigm is determining whether or not other prefixes that have been categorized as separate from conjugation are in fact homophones, or are instead actually just conjugation prefixes themselves with another function. For example, the *g*- conjugation prefix looks identical to the *g*- modal prefix that will be discussed in chapter 5. If they are not merely homophonous this would mean that conjugation prefixes are not in fact in complementary distribution (meaning example 12c would instead have two of the same conjugation prefixes instead of a modal prefix and a conjugation prefix as it is currently glossed), and would also mean that our understanding of how conjugation prefixes are assigned, both aspectually and lexically, would need to be revised.

So is this a case of homophony or do we have another function for a conjugation class not yet investigated? Take a look at example 13.

#### Example 13.

- |   |  |
|---|--|
| <p>a. <b>imperative</b><br/>           sa.í<br/> <br/>           sa- √í<br/>           Ø- Ø- Ø-sa- √i- H<br/>           3.O-Ø.CONJ-2.S-CL-√cook-VAR<br/>           “cook it!”</p>     | <p>b. <b>hortative</b><br/>           axsa.ee<br/> <br/>           a- x- sa-√.ee<br/>           a- Ø- x- Ø-sa-√.ee- μ<br/>           3.O-Ø.CONJ-G.MD-3.S-CL-√cook-VAR<br/>           “let her/him cook it”</p>             |
| <p>c. <b>imperative</b><br/>           geeshkaak<br/>           g- ee-sh-√kaak<br/>           g- ee-sh-√kaak- Ø<br/>           G.CONJ-2.S-CL-√squat-INVAR<br/>           “squat!”</p> | <p>d. <b>hortative</b><br/>           gaagashkaak<br/>           gaa- g- a- sh-√kaak<br/>           Ø- gaa- g- a- sh-√kaak- Ø<br/>           3.O-G.CONJ-G.MD-3.S-CL-√squat-INVAR<br/>           “let her/him/it squat”</p> |
- (Adapted from  
Edwards 2009)

Example 13a and 13b compare a zero conjugation prefix verb’s imperative and hortative forms. Just considering these two examples, as well as consulting table 17 where it’s not entirely known what the *g*- conjugation prefix contributes aspectually, it may be easy enough to suggest that the *g*- conjugation prefix is hortative and leave it at that. Examples 13c and 13d however show that with a *g*- conjugation verb, in the hortative you get two *g*- prefixes (with some vowel epenthesis involved). Most other data (with the exception also of the prospective which has a similar conjugation and modal combination) suggest that the conjugation prefixes are in complementary distribution and so this would take some reevaluation.

We leave this section with the belief that the *g*- conjugation prefix and the *g*- modal prefix are two separate, homophonous morphemes.

### 3.7 Conclusion

This chapter has touched on a number of topics, the largest of which being the three functions of the four conjugation prefixes found in Tlingit. This summary of the conjugation prefix distribution sets the stage for more thorough analysis of particular morphemes, as well as for more in-depth work on the interaction between motion derivation and aspectual inflection. It is also significant in that it may make teaching Tlingit's complex morphological structure somewhat easier for second language teachers in the future. Summarized, second language teachers can take what is already being taught in classrooms; that there is a four way paradigmatic relationship between these prefixes (n-, *g*-, *g*-, and Ø-) and expand that to include that these prefixes have three different functions. First, they serve as directionals in motion verbs, as summarized in table 17. Second, they serve as aspectual markers, as tentatively summarized in table 18. And finally, they are lexically specified parts of verb roots, and can be taught more explicitly as an integral part of the verb stem.

With the *g*- conjugation prefix in particular, I think it would be safe to label it as a temporal futurity marker, making it the component of the trimorphemic prospective aspect cluster that contributes futurity. This morpheme has not previously been analyzed this way, and this proposal hopefully adds to our theoretical understanding of both conjugation prefixes in general, and our more immediate goal of understanding this cluster in particular.

## Chapter 4

### Irrealis Marking *u-*

The second member of the trimorphemic prospective cluster is *u-*, which Leer 1991 labels as irrealis, but its semantic function is not well understood. In terms of distribution *u-* is found in four contexts: with negation (14a), with potential<sup>1</sup> (14b), with prospective (14c), and with small number of lexically specified verbs (example 15).<sup>2</sup>

#### Example 14.

##### a. Negation

hél uxsa.ee

hél *u-* x- sa-√.ee

hél Ø-*u-* xa-sa-√.i- μ

NEG 3O-IRR-IS- CL-√cook-VAR

“I don’t cook it;

I am not cooking it.”

##### b. Potential

gwál kwasi.ee

gwál *k-* *w-* a- si- √.ee

gwál Ø- *g-* *u-* xa-si- √.i- μ

DUB 3O-g.MD-IRR-IS- CL-√cook-VAR

“Maybe I can cook it.”

##### c. Prospective

kukasa.ée

*k-* *u-* *k-* a- sa-√.ée

Ø- *g-* *u-* *g-* x- s- √.i- Hμ

3O-g.CJ-IRR-g.MD-1S- CL-√cook-VAR

“I will cook it.”

(MH, 2016)

#### Example 15.

##### Lexicalized Irrealis (Imperfective)

tukuwadáskw

tu- ku- *wa-* √dáskw

tu- g- *u-* Ø-√daskw -H

PREVERB-G.CONJ-IRR- CL-√quick-tempered-VAR

“s/he is quick-tempered.”

(adapted from Twitchell 2017)

For a lexically specified irrealis marked verb, it is unpredictable by meaning why some verbs have lexical specification and some do not. It also means that the verb in example 15 always has the irrealis marking.

This distribution pattern is what one might expect for something considered irrealis (with the exception of the lexicalized verbs) (Palmer 2001). Interestingly though, the irrealis does not appear in

<sup>1</sup> There is a discrepancy in the literature about what constitutes a “potential” mode in Tlingit. Namely whether the dubitative marker (that would be words like *gwál* or *kwshé* or words that indicate uncertainty (Palmer 2001)) is obligatory in potential verb modes or not. See Leer (1991), Twitchell (2016) and Cable (2016) for discussion. The example 14b is from Marsha Hotch and follows Twitchell’s 2016 generalization about the verb type that potential verb modes necessarily have to have a dubitative marker.

<sup>2</sup> There are approximately 25 inherently irrealis verbs. See Twitchell’s dictionary draft (2017) for full compilation.

the conditional verb mode which was noted in section 2.4 to be a verb mode that is typically irrealis (in Central Pomo among other languages), nor does it appear in the hortative verb mode, which will be discussed in section 4.3. With distribution in mind though, the purpose of this chapter is to explore what it means to be an irrealis marker in Tlingit in particular, and to argue for a semantic contribution of this prefix within the larger trimorphemic prospective aspect cluster needed to get a future reading.

#### 4.1 The Question

Referring back to section 2.4 there is a discussion within the field as to what makes an irrealis an irrealis, and whether or not such a category in the way it has been historically presented is a useful one.<sup>3</sup> The main issue surrounding the irrealis marker currently is that it is challenging to find a single semantic generalization that presents the facts, even more so when considering the environments it appears in cross-linguistically. Thus whether it is possible to make a universally valid generalization about what an irrealis means semantically is still under discussion. This work will likely not solve that debate. Instead this chapter will discuss the logical possibilities of what this prefix is doing semantically in Tlingit, before settling on a theory that incorporates some kind of semantic contribution, be that contribution that is semantically redundant or a more traditional irrealis analysis, and then concluding.

#### 4.2 Is the Prefix *u-* Semantically Vacuous?

One possible argument for what this prefix is contributing semantically is that it is not in fact contributing anything. If we look again at example 14, we see that in all three environments where the irrealis appears, it also appears with other prefixes, or preverbal content where a “not real” reading may be coming from. This would side step the theoretical disagreements presented about what makes an irrealis an irrealis by stating that this morpheme in Tlingit is a “semantic agreement marker” in the sense that it does not itself have inherent semantics but is simply “agreeing” with the environments in which it appears. If we look again at example 14, negation, the potential, and the prospective are all traditionally “unreal” environments in that they have to do with a possible world not set in reality. In each of those environments however, there are other overt morphemes that signal that what is being discussed is a possible world and not a “real” one. Negation in 14a has the negation marker *hél*, the potential in 14b has the dubitative marker *gwál* or for speakers who do not require overt dubitation, there is still the modal prefix *g-* and in the prospective in 14c, there is the combination of the conjugation prefix *g-* and the modal prefix *g-*.

While this approach is ideal from a theoretical standpoint (removing the *u-* prefix from the irrealis debate), it still raises questions about what the need for a semantically vacuous marker might be in the first place (agreement perhaps), and also has no explanation for why the irrealis is not always in the same linear position in relation to the modal prefix *g-* as we see in 14b and 14c. That would not be explained necessarily by a semantically contentful analysis either though.

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<sup>3</sup> For a more thorough discussion of realis/irrealis as a semantic category see Palmer 2001, Matthewson 2010 and Michael 2014.

This approach also cannot readily explain the distinction that is shown by the inclusion of a hortative and an imperfective verb in the paradigm shown by example 16 (example 6 in chapter 3) which is discussed in the next section.

#### 4.3 The Prefix *u-* as a Semantically Relevant Morpheme

Example 16 shows the morphological addition of each of the morphemes currently under investigation in this work, with the addition of the irrealis marker in verbs conjugated for aspect, as most pertinent to this chapter.

##### Example 16.

##### a. Imperfective

$\text{xasa.ée}$   
 $\emptyset\text{-}\text{x}\text{a}\text{-sa-}\sqrt{\text{.ée}}$   
 $\emptyset\text{-}\text{x}\text{a}\text{-sa-}\sqrt{\text{i-}} \quad \text{H}\mu$   
 $3\text{O-1S-CL-}\sqrt{\text{cook-VAR}}$   
 “I cook it; I am cooking it”  
 (Adapted from Edwards 2009)

##### b. Hortative

$\text{kasa.ée}$   
 $\emptyset\text{-}\text{k-} \quad \text{a- sa-}\sqrt{\text{.ée}}$   
 $\emptyset\text{-}\text{g-} \quad \text{x}\text{a}\text{-sa-}\sqrt{\text{i-}} \quad \text{H}\mu$   
 $3\text{O-g.MD-1S-CL-}\sqrt{\text{cook-VAR}}$   
 “Let me cook it.”  
 (Adapted from Edwards 2009)

##### c. Potential

$\text{gwál kwasi.ée}$   
 $\text{gwál} \quad \text{k-} \quad \text{w-} \quad \text{a- si-}\sqrt{\text{.ée}}$   
 $\text{gwál} \quad \emptyset\text{-}\text{g-} \quad \text{u-} \quad \text{x}\text{a}\text{-si-}\sqrt{\text{i-}} \quad \mu$   
 $\text{DUB } 3\text{O-g.MD-IRR-1S-CL-}\sqrt{\text{cook-VAR}}$   
 “Maybe I can cook it.”  
 (Adapted from Twitchell 2016)

##### d. Prospective

$\text{kukasa.ée}$   
 $\text{k-} \quad \text{u-} \quad \text{k-} \quad \text{a-sa-}\sqrt{\text{.ée}}$   
 $\emptyset\text{-}\text{g-} \quad \text{u-} \quad \text{g-} \quad \text{x}\text{-s-}\sqrt{\text{i-}} \quad \text{H}\mu$   
 $3\text{O-g.CJ-IRR-g.MD-1S-CL-}\sqrt{\text{cook-VAR}}$   
 “I will cook it.”  
 (Adapted from Twitchell 2016)

The imperfective in Tlingit is often the least morphologically marked (with exception of the imperative), and so is shown for completeness. If we look at example 16b and example 16c however, the difference between these two verb forms appears to be the irrealis marker. Again it’s noted that the dubitative marker in example 16c is not obligatory for all speakers, and so it can be argued that the irrealis marker is changing the semantic nature of the verb.

Whatever this morpheme is contributing semantically, it seems to be contributing something, perhaps signaling a non-actual event.

#### 4.4 Semantic Redundancy

It is then logically possible that instead of being semantically vacuous, *u-* is merely semantically redundant. This follows as it is obligatory in all of the environments in which it appears, and is not an optional marker. That does not necessarily explain the change between the hortative verb mode in example 16b and the potential verb mode in 16c though. A more thorough discussion between the

potential and hortative verb modes will be presented in chapter 5, and so here we will leave this section suggesting that redundancy is possible, but an unlikely analysis for this particular prefix *u-*.

#### 4.5 The Prefix *u-* as a Subjunctive

Another possibility is following Matthewson 2010, and looks into this marker being a subjunctive instead of an irrealis, like in St'át'imcets (Salish). What subjunctive contributes in St'át'imcets is summarized in figure 14.

ENVIRONMENT	INDICATIVE MEANING	SUBJUNCTIVE MEANING
plain assertion	assertion	wish
deontic modal	deontic necessity/possibility	wish
deontic modal	deontic necessity/possibility	'pretend'
imperative	command	polite request
wh-question + evidential/future	question	uncertainty/wondering
yes-no question + evidential/future	question	uncertainty/wondering
wh-word + evidential	question	ignorance free relative
scalar particle <i>t'u7</i>	'just/still'	'might as well'
wh-word + scalar particle <i>t'u7</i>	N/A	indifference free relative

Figure 14. Subjunctive in St'át'imcets (Matthewson 2010)

Matthewson's 2010 work argues that the subjunctive (at least in St'át'imcets) restricts the conversational background of a governing modal by restricting the modal's force. This distinction will be come more relevant in chapter 5 when the discussion of modality in Tlingit is expanded.

If we return to figure 14 though, *u-* does not appear in the hortative verb mode however, which one consultant referred to as a "strong wish" (Hotch p.c.). It does not appear in the imperative either and while it does seem to be weakening the force if we look again at the difference between 14b and 14c, its presence in negation (14a) does not seem necessarily modal in nature. The prefix is also not used to uncertainty. For all these reasons, *u-* does not seem to be patterning like a subjunctive marker.

##### 4.5.1 Subjunctive versus Irrealis

Table 19 below takes both Matthewson 2010 and Palmer's 2001 work and summarizes what the categorical understanding of subjunctive would be (using Tlingit verb mode terminology such as the hortative for *wish*) showing how neither entirely fit Tlingit exactly.

Verb Modes	Subjunctive	Irrealis	Tlingit
future/prospective	✓	✓	✓
imperative	✓	✓	✗
conditional	✓	✓	✗
negation	#	✓	✓
hortative	✓	✓	✗
potential	✓	✓	✓

Table 19. Subjunctive, Irrealis and Tlingit Compared  
(adapted from Palmer 2001 & Matthewson 2010 & Matthewson 2017 p.c.)

There is near complete overlap between what is considered subjunctive and what is considered irrealis.<sup>4</sup> Matthewson's 2010 work teases the two categories apart a bit better, but when looking at the verb modes that this research is familiar with in regard to Tlingit in table 19, it's not as clear. Tlingit no more seems to pattern as a "prototypical" irrealis marking language than it does a subjunctive marking one.<sup>5</sup>

#### 4.6 Conclusion

So if it is not a subjunctive, and it does not fit quite nicely into an irrealis analysis, which is itself in a state of flux cross-linguistically, what is the morpheme exactly? While the label of irrealis is not satisfying semantically, it does work when considered a form based label, instead of a semantic category. Wiltschko's 2014 work discusses how categories like "subjunctive" or "irrealis" are not universal cross-linguistically. So while it may be useful or enlightening to compare it with other languages that have the same irrealis label, the fact that it does not exactly fit into any one model should not be surprising.

This work will not solve the theoretical issue under debate, but this chapter can leave us with a better understanding of what this prefix is *not* in Tlingit. It does not appear to be a subjunctive mood marker, nor does it appear to be semantically vacuous as far as this research can determine, but it still raises the question about what the marker really is, both categorically, and what semantics it contributes within this cluster. One potential analysis is that this morpheme contributes a definedness

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<sup>4</sup> Tlingit has not been analyzed as having a subjunctive form, independent of the realis/irrealis discussion happening here.

<sup>5</sup> Whether there is such a prototypical irrealis marking language is debated, though Michael 2014 suggests one may exist.

condition, while leaving the truth-conditions unaffected, so the formalization of this prefix will be one of a presupposition trigger about possible worlds.



## Chapter 5

### Modality Prefix *g-*

In this chapter the focus is on the modal *g-* prefix. In section 5.1 the analysis touched on in section 2.3 is revisited, setting up for section 5.2 which lays out the current issues with our theoretical understanding of modality in Tlingit as a whole. Section 5.3 lays out a modal analysis for a multi-morphemic approach, and we conclude this chapter with the assertion that the modal prefix *g-* is where the modal semantics of the prospective aspect cluster *g-u-g-* is originating from.

#### 5.1 Prior Research

Leer 1991 labels the *g-* prefix as “modal” but does not propose a semantic analysis of its force or flavour.

Cable 2016 provides a more in depth account of modality in Tlingit, looking at the prospective and potential verb modes, while also briefly touching on the hortative.<sup>1</sup> Per Cable’s 2016 analysis the prospective can *only* be circumstantial necessity, and the potential can *only* be circumstantial possibility; this is summarized in table 1. Cable’s proposal is the first step in a complete understanding of modality in Tlingit which this research builds upon. The proposal that the prospective denotes circumstantial necessity treats the tri-morphemic prospective aspect cluster an unanalyzed chunk, the goal of the present analysis is to deconstruct this cluster.

	Possibility	Necessity
Circumstantial	Potential	Prospective

Table 1 Modal Force & Flavour (Cable 2016)

Presenting targeted modal contexts, Cable 2016 shows that consultants rejected other types of verbal constructions when presented with a circumstantial necessity context, and would only allow for a prospective aspect verb to be used, as shown in figure 15.

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<sup>1</sup> What Cable 2016 refers to as the future, this research refers to as the prospective.

<u>Scenario:</u> You are watching me place an antenna on my roof. I didn't do a good job placing the antenna, and it looks really wobbly. As I'm walking back, the antenna starts to tilt over, and now it's dangling over the side of the roof. You want to warn me that the antenna is about to fall off the roof...			
<u>English Sentence to Translate:</u>		“Watch out! That’s going to fall!”	
<u>Tlingit Translation Offered:</u>			
Dlookát latín!	Aax	<b>ḍaak gugwaxéex.</b>	(WF)
watch.out	there.from	<b>FUT.3S.fall</b>	
<i>Watch out! It's going to fall!</i>			

---

<u>Scenario:</u>		(Same as in (46))	
<u>English Sentence to Translate:</u>		“Watch out! That’s going to fall!”	
<u>Rejected Tlingit Translation:</u>			
# Dlookát latín!	Aax	<b>ḍaak gwaaxeex.</b>	(C)
watch.out	there.from	<b>POT.3S.fall</b>	
<u>Speaker Comments:</u>			
• “This says ‘it <i>might</i> fall’, not ‘it’s going to fall’.”			(SE)
• “No. Doesn’t fit this.”			(A)

Figure 15. Circumstantial Necessity Context (Cable 2016: 23, 24)

Here, the consultant provided a prospective verb form, and when presented with a potential form, that was rejected by his consultant group. His analysis then rests on similar principles to this work, namely utilizing targeted semantic contexts and having speakers provide felicity judgements based on those contexts.

Where this research departs from Cable 2016, however, is in taking the prospective aspectual cluster, and attempting to assign semantic content to each of those individual morphemes, in this chapter namely the *g*- prefix.

## 5.2 The Issue

The issue with the previous literature is a lack of explicit semantic analysis in Leer 1991's case, and a lack of accounting for morphological complexity in Cable 2016's case. It's not necessarily the case that whatever modal force (necessity) Cable 2016 proposed for the prospective as a whole will work for the *g*- prefix, since the *g*- prefix also appears in other constructions which are not obviously necessity environments. As this research aims to provide a compositional semantic account of the tri-morphemic prospective aspect cluster as a whole, below is a brief outline for what motivates a more

nuanced morphological breakdown of that cluster, before raising the main question; while Cable 2016's analysis was replicated by this work, the main question here is what modal force and flavour does the prefix *g-* contribute to the tri-morphemic cluster, if it is not the same as the prospective aspect cluster as a whole?

### 5.2.1 Morphological Complexity

This work follows the tradition of Leer 1991 and Crippen 2013 in assuming that the prospective aspect marker in Tlingit (*g-u-g-*) is in fact three distinct morphemes that fulfill different semantic and syntactic roles. The fact that there are three morphemes is not itself controversial. If we look again at example 15 below, the fact that these verbs are morphologically complex is apparent.

#### Example 15.

##### a. Imperfective

*ḡasa.ée*  
*ḡa-sa-√.ée*  
 Ø- Ø- *ḡa-sa-√.i-* Hμ  
 3O-Ø.CJ-1S-CL-√cook-VAR  
 "I cook it; I am cooking it"  
 (Adapted from Edwards 2009)

##### b. Hortative

*ḡasa.ée*  
*k-* a- sa-√.ée  
 Ø-Ø- *g-* *ḡa-sa-√.i-* Hμ  
 3O-Ø.CJ-*g*.MD-1S-CL-√cook-VAR  
 "Let me cook it."  
 (Adapted from Edwards 2009)

##### c. Potential

*ḡwál ḡwasi.ée*  
*ḡwál* *k-* *w-* a- si-√.ée  
*ḡwál* Ø- Ø- *g-* *u-* *ḡa-si-√.i-* μ  
 DUB 3O-Ø.CJ-*g*.MD-IRR-1S-CL-√cook-VAR  
 "Maybe I can cook it."  
 (Adapted from Twitchell 2016)

##### d. Prospective

*kukasa.ée*  
*k-* *u-* *k-* a- sa-√.ée  
 Ø- *g-* *u-* *g-* *ḡ-* s-√.i- Hμ  
 3O-*g*.CJ-IRR-*g*.MD-1S-CL-√cook-VAR  
 "I will cook it."  
 (Adapted from Twitchell 2016)

These morphemes appear in a predictable distribution pattern and are obligatory in order to express the verb modes desired (hortative, potential, prospective etc). The alternative is that these large morphologically complex verbs are part of the lexicon as a frozen chunk, a hypothesis that this thesis does not support.

### 5.3 Modality in Tlingit

In chapter 3 it was determined that the conjugation prefix *g-* contributes futurity, and in chapter 4 the irrealis prefix *u-* was determined to signal a non-actual event.

This leaves then how to determine what *g-*'s default semantic contribution is. If the potential and prospective verb modes are possible and necessary respectively as we see in table 20, with differing prefix interactions (the conjugation class prefix *g-* in particular) then the prediction would be

that the hortative verb mode would be the environment in which to determine the *g*- prefix default semantic contribution as it is the only environment in which the *g*- prefix occurs by itself.

This prefix *g*- is referred to as a modal prefix for three reasons. First, it was labeled as such by Leer 1991, but little example or explanation was presented for why that label was appropriate. Second, as shown in example 15b, this prefix is obligatory in all hortative environments which as we will see, are modal in nature. And three, as the following discussion will highlight, the modal nature of this prospective aspect cluster must be coming from somewhere and neither the *g*- prefix or the *u*- prefix has been shown to be modal in their other environments. The irrealis prefix *u*- appears in negation, which is not modal. Also, if the irrealis prefix is semantically vacuous it cannot be the sole source of what is contributing modality in the prospective aspect cluster. That leaves a single morpheme left to contribute modality (*g*-).

### 5.3.1 Hypotheses

That leaves three potential hypotheses about *g*-’s force:

- i. The *g*- prefix default modal force is necessity, which stays in the prospective verbal mode as in example 15d, and is weakened by the dubitative marker in example 15c.<sup>2</sup>
- ii. The *g*- prefix default modal force is possibility, which stays possible in the potential verb mode and is strengthened in the prospective.
- iii. The *g*- prefix default modal force is not specified and so is able to give both a possible or necessary reading, depending on context.

Hypothesis i predicts that all environments in which *g*- occurs with a possible reading, it’s due to a weakening effect contributed by other prefixes in the cluster, or other elements like the dubitative marker *gwál*.

Hypothesis ii predicts the opposite in that all the environments in which *g*- occurs with a necessary reading, it must be due to a strengthening force contributed by other prefixes in the cluster.

Hypothesis iii predicts that the *g*- modal prefix is simply sensitive to any environments in which it occurs, and will contribute the force needed for the context. The force restriction would then need to be attributed to another prefix in the cluster, or another element in the clause.

In order to test these hypotheses, a series of modal tests were conducted. This led to some replication of data found in Cable 2016, while also providing insights into the hortative verb mode which is investigated here, but has not been included explicitly in other semantic research on Tlingit as of this writing.

### 5.3.2 The Proposal

It actually seems to be the case that hypothesis iii. is what the data shows, where the default modal force is unspecified, and is strengthened in the prospective verb mode. Below in table 20 the results are summarized. The green row is from Cable 2016 due to a gap in the data set presented here.

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<sup>2</sup> See 2.2.1 for discussion.

	Hortative	Potential	Prospective
Circumstantial Possibility	✓	✓	#
Pure Circumstantial Necessity	#	#	#
Deontic Possibility	?	✓	#
Deontic Weak Necessity	?	-	✓
Deontic Necessity	#	#	#
Epistemic Possibility	-	#	#
Epistemic Weak Necessity	#	#	#
Epistemic Necessity	#	#	#

Table 20. Modal Force and Flavour (Keiyishí Bessie Cooley data 2017, Cable 2016)

The table above tells us four things. First that Tlingit modal marking is all some type of circumstantial modality. This is because of Kratzer 1981's postulation that deontic modality is actually a subset of circumstantial modality. Second, this work departs from Cable 2016's argument, and shows that the potential verb mode can also have a deontic possibility reading. Third, that Cable 2016's analysis (table 1) is somewhat compatible with a multi-morphemic approach, if one accounts for deontic modality being considered a subset of circumstantial (Kratzer 1981). While this data did not show a circumstantial necessity reading being felicitous, it did allow for a deontic weak necessity reading, which may be explained as deontic modality is a subset of circumstantial modality. And fourth, the modal prefix *g-* is capable of contributing either modal force and is restricted by its interaction with other morphemes in a verbal construction.

The data in the next section will walk through the contexts and the elicited data that was summarized in table 20.

### 5.3.3 The Data (BC 2017)

The contexts used here were created referring to Vander Klok (2014). Speaker comments will be introduced with the abbreviation SC. The data here was provided by Keiyishí Bessie Cooley in the summer of 2017. The modal force and flavour being targeted will be listed at the top, with the context and targeted environment in English following. The consultant was asked to provide ways to express a similar notion in Tlingit, which are listed under the "offered sentences" heading, before then being

asked to judge the felicity of the main verb in the prospective, hortative, and potential verb modes. The dubitative marker *gwál* was also elicited with each verb form, but that is not the main purpose of this research and so that data will be included in the appendix.

As a reminder the notation used throughout the example set includes a \* which indicates an ungrammatical sentence, a # which indicates an infelicitous sentence in that particular context, but is still grammatical, and a ? which indicates an uncertainty by the speaker, and is explained in that examples notes.

The first example set we look at is one focused on circumstantial possibility, in example 16.<sup>3</sup> The English translations were provided or checked to be correct by the consultant.

Again, the idea is by systematically testing the modal force and flavor of the hortative, potential and prospective verb modes in Tlingit so that a force and flavour semantic contribution can be attributed to the modal prefix *g-*.

### Example 16. Circumstantial Possibility

#### *Context:*

Dzéiwsh loves to talk about potatoes. These potatoes came from Klukwan but the soil and temperature is conducive to growing them in Washington as well.

Target: “The potatoes CAN grow in Washington.”

Offered Sentences:

#### a. Progressive

Wé k'únts' yaa dax kana.éin

wé k'únts' yaa=dax ka-na- √.éi -n

wé k'únts' yaa=dax Ø- ka-na- Ø- Ø-√.ei- Hμ- n

that potato PREVERB 3.O-THEM-N.CONJ-3.S-CL-√grow- VAR

“The potatoes are growing.”

#### b. Hortative

Wé k'únts' kanga.aa

wé k'únts' ka-n-ga-√.aa

wé k'únts' Ø- ka- n- *ga-* Ø-Ø-√.aa -μ

that potato 3.O-THEM-N.CONJ-*g*.MD-3.S-CL-√grow- VAR

“Let the potatoes grow”

<sup>3</sup> Preverbal content is more complex than glossed here, but for simplicity, and because the preverbal morphology does not have any immediate bearing on aspect, it will be glossed as PREVERB. Future modal research may want to revisit this, but for the current purpose the glossing conventions presented here and throughout the thesis will suffice.

### c. Imperfective

Wé k'únts' Waashdánx' k'idéin kana.áa

wé k'únts' Waashdán -x' k'idéin ka- na- √.áa

wé k'únts' Waashdán -x' k'idéin Ø- ka- na- Ø-Ø-√.a- Hμ

that potato washington-LOC well 3.O-THEM-N.CONJ-3.S-CL-√grow- VAR

“The potatoes grow well in Washington.”

(SC: You can't say if you don't know for sure though)

### d. Repetitive Dubitative Imperfective

Gwál wé k'únts' Waashdánx' k'idéin dax kana.éich

gwál wé k'únts' Waashdán -x' k'idéin dax ka- na- √.éi -ch

gwál wé k'únts' Waashdán -x' k'idéin dax Ø- ka- na- Ø-Ø-√.ei- H -ch

DUB that potato washington-LOC well PREVERB 3.O-THEM-N.CONJ-3.S-CL-√grow- VAR- REP

“Maybe the potatoes grow well in Washington.”

“Maybe the potatoes would grow well in WA.”

(SC: If you don't know)

### Constructed Sentences:

#### e. Prospective

# Wé k'únt's Waashdánx' dax kakgwa.áa

wé k'únt's Waashdán -x' dax ka- k- g- wa- √.áa

wé k'únt's Waashdán -x' dax Ø-ka- g- g- u- Ø-Ø-√.a- Hμ

that potato washington-LOC PREVERB 3.O-THEM-G.CONJ-G.MOD-IRR-3.S-CL-√grow- VAR

“The potatoes will grow in Washington.”

#### f. Hortative

Wé k'únts' Waashdánx' dax kanga.aa

wé k'únts' Waashdán -x' dax ka- n- ga- √.aa

wé k'únts' Waashdán -x' dax Ø- ka- n- ga- Ø-Ø-√.aa -μ

that potato washington-LOC PREVERB 3.O-THEM-N.CONJ-g.MD-3.S-CL-√grow- VAR

“Let the potatoes grow in Washington.”

(SC: You can say this if you're not certain.)

### c. Potential

Wé k'únts' Waashdanx' kungaa.aa

wé k'únts' Waashdan -x' k- u- n- ga- a- √.aa

wé k'únts' Waashdan -x' Ø- k- **u-** n- **ga-** a-Ø- √.a -μ

that potato washington-LOC 3.O-THEM-IRR-N.CONJ-**g**.MD-3.S-CL-√grow- VAR

“The potatoes might grow in Washington.”

(SC: You can say this if you're not sure.)

This example set is consistent with Cable 2016 with the additional inclusion of the hortative verb mode, which is particularly relevant for this work as it is the one environment in which the modal prefix appears in isolation from the other prefixes under investigation here. This fits with Cable 2016's generalization (that the potential is compatible with a circumstantial possibility reading, and the prospective is not), as well as including the hortative verb mode into the paradigm which was not previously tested elsewhere. Interpreting the # status of the prospective sentence in this context as having the wrong meaning (necessity) the context supports only a possibility reading.

Example 17 reviews circumstantial necessity, which is predicted by Cable 2016 to be compatible with prospective aspect, but no other verb mode.

### Example 17.

#### Pure Circumstantial Necessity

*Context:*

I have to cough!

Offered Sentence<sup>4</sup>:

### a. Prospective

# akgwaskúkx

a- k- g- wa- s- √kúk -x

a- **g-** **g-** **u-** Ø- s- √kúk- H -x

3.O-G.CONJ-**g**.MD-IRR-3.S-CL-√cough- VAR-REP

“He's going to cough.”

<sup>4</sup> While this sentence was initially offered when asked for a Tlingit equivalent, it was later rejected as having the same meaning as the English target sentence.



## Constructed Sentences:

### b. Hortative

# angaskúkx

a-n-ga-s-√kúk-x

a- n- **ga**- Ø- s- √kúk- H -x

3.O-N.CONJ-g.MD-3.S-CL-√cough- VAR-REP

“let him cough”

### c. Potential

# anaxdzikúkk

a- n- a- x- dzi-√kúk -k

a- n- **u- g**- Ø- dzi-√kúk- H -k

3.O-N.CONJ-IRR-g.MD-3.S-CL- √cough- VAR-REP

“he might cough”

This particular context is somewhat problematic within modal investigation in general. One prevailing comment that came from this consultant was that “you either do it, or you don’t” (Cooley p.c.) and that is certainly true of a context in which coughing is involved. Davis, Rullman and Matthewson 2009 discuss this very issue in their work on St’átimcets and the confounds between a pure circumstantial necessity case, and future marking.

There was also a switch from first person to third which may have confused this data.

The original test cases from Kratzer (1981) for circumstantial necessity were the ‘I have to sneeze’ cases which were tested here in example set 17 as *I have to cough*. Cable 2016 doesn’t test those types of cases however, instead only testing future statements like ‘it’s going to fall’, as we see in figure 15 above. Meaning that Cable 2016’s findings and what is demonstrated here are due to the testing of different types of circumstantial necessity modality.

Example 18 investigates deontic possibility, which again Cable 2016 predicts to be compatible only with the potential verb mode.

### Example 18.

#### Deontic Possibility

##### Context:

A person has been ill for a long time, and was having stomach problems. For a while he was not allowed by his doctor to have solid food. Yesterday he got permission from his doctor to eat food again, but he’s not able to because he’s too weak.

Target: “He CAN eat.” ...but he doesn’t.

Offered Sentence:

**a. Perfective (with capability predicate)**

Du jeegáa yatee at wuxaayí

du=jeegáa=yatee at wu-  $\sqrt{x}aa$  -yí  
du=jeegáa=yatee at Ø- Ø- wu- Ø-Ø-  $\sqrt{x}a$ -  $\mu$  -yí  
capable that 3.O-Ø.CONJ-PFV- 3.S-CL-  $\sqrt{eat}$ - VAR-DEC

“He is capable of (or able) to eat.”

(SC: He’s allowed to, but doesn’t.)

Constructed Sentences:

**b. Prospective**

# at gugaxáa

at g- u- ga-  $\sqrt{x}áa$   
at  $\underline{g}$ -  $\underline{u}$ -  $\underline{ga}$ - Ø- Ø- $\sqrt{x}a$ - H $\mu$   
it G.CONJ-IRR-g.MD-3.S-CL- $\sqrt{eat}$ - VAR

“He/she will eat.”

(SC: Contradictory in a situation where he doesn’t.)

**c. Hortative**

? at gaxaa

at g- ga-  $\sqrt{x}aa$   
at Ø-  $\underline{ga}$ - Ø-Ø- $\sqrt{x}a$ -  $\mu$   
it o.CONJ-g.MD-3.S-CL- $\sqrt{eat}$ - VAR

“let him/her eat.”

(Note: BC stated that this example was okay, but that she would like to revisit it and we ran out of time. This is indicated by the question mark in table 12.)

**d. Potential**

at gwaaxaa

at g- wa-a- $\sqrt{x}aa$   
at Ø-  $\underline{g}$ -  $\underline{u}$ - a- Ø- $\sqrt{x}a$ -  $\mu$   
it o.CONJ-g.MD-IRR-3.S-CL- $\sqrt{eat}$ - VAR

“he/she might eat.”

This example set demonstrates the potential verb mode’s ability to serve as a deontic possibility modal according to the consultant, though the English translation presented is more dubitative than would normally be associated with a deontic modal in general. Also the trepidation about accepting the hortative verb mode suggests that there is a very fine grained semantic distinction happening in the hortative verb mode that traditional modal investigations are not equipt to handle as yet. It is

possible that in the discourse context it is not clear to the consultant how appropriate it is to say 'let him eat'.

Example 19 is the investigation of deontic weak necessity, which is an interesting modal category theoretically. Weak necessity was not a category tested by Cable 2016.

### Example 19.

#### Deontic Weak Necessity

##### Context:

My nephew's parents are concerned about his grades. He would rather go fishing instead of studying. They tell him:

Target: "You OUGHT to do your homework before fishing."

Offered Sentence:

##### a. Imperative & Imperative

I sgóon yéi jineiyí yán saní s'é aagáa tsáa shaneelxóot'

I sgóon=yéi=jineiyí yán=saní=s'é aagáa=tsáa sha- ne- e- l-√xóot'

I sgóon=yéi=jineiyí yán=saní=s'é aagáa=tsáa sha- ne- e- l-√xut'- Hμ  
you schoolwork first then THEM-N.CONJ-2.S-CL-√spin.cast- VAR

"Finish your schoolwork first, then go spin casting."

(SC: You do or you don't.)

Constructed Sentences:

##### b. Imperative & Prospective

I sgóon yéi jineiyí yán saní s'é aagáa tsáa shakgeelxóot'

I sgóon=yéi=jineiyí yán=saní=s'é aagáa=tsáa sha- k- g- e- e- l-√xóot'

I sgóon=yéi=jineiyí yán=saní=s'é aagáa=tsáa sha- g- g- u- e- l-√xut'- Hμ  
you schoolwork first then THEM-G.CONJ-G.MOD-IRR-2.S-CL-√spin.cast- VAR

"Finish your schoolwork first, then you will go spin casting."

##### c. Imperative & Hortative

? I sgóon yéi jineiyí yán saní s'e, aagaa tsáa shangeelxóot'

I sgóon=yéi=jineiyí yán=saní=s'é aagáa=tsáa sha- n- g- ee- l-√xóot'

I sgóon=yéi=jineiyí yán=saní=s'é aagáa=tsáa sha- n- g- ee- l-√xut'- Hμ  
you schoolwork first then THEM-N.CONJ-G.MOD-2.S-CL-√spin.cast- VAR

"Finish your schoolwork first, then you could go spin casting."

#### d. Imperative & Potential

— I sgóon yéi jineiyí yán saní s'e, aagaa tsáa shangilixóot'

I sgóon=yéi=jineiyí yán=saní=s'é aagaa=tsáa sha- n- g- i- li-√xóot'

I sgóon=yéi=jineiyí yán=saní=s'é aagaa=tsáa sha- n- g- i- li-√xut'- Hμ  
 you schoolwork first then THEM-N.CONJ-G.MOD-2.S-CL-√spin.cast- VAR

“Finish your schoolwork first, then you might go spin casting.”

(Note: This is a gap in the data in which there was no record of whether the consultant judged this felicitous or not)

Important to note, in this example set, the simple sentences themselves were not tested separately, which may very well have confounded the data, but are presented here anyways for completeness.

Example 20 is an investigation of deontic necessity. Cable 2016 argues there is no deontic modal flavour in Tlingit, at least not explicitly.

#### Example 20.

##### Deontic Necessity

##### Context:

There is a preschool environment with a strict schedule, and a little boy who doesn't want to eat at lunch time. The teacher is trying to explain to his parents that...

Target: “Your child MUST eat right at noon.”

Offered Sentence:

##### a. Imperative

# Kúnáx sitgamsáanx' at xá!

kúnáx sitgamsáan-x' at √xá

kúnáx sitgamsáan-x' at Ø- Ø-Ø-√xa- H

really noon -LOC it Ø.CONJ-2.S-CL√eat-VAR

“Eat right at noon.”

(SC: You either do it or you don't.)

## Constructed Sentences:

### b. Prospective

# I yátk'u kúnáx sitgamsáanx' at gugaxáa

I yátk'u kúnáx sitgamsáan-x' at g- u- ga- √xáa  
 I yátk'u kúnáx sitgamsáan-x' at g- u- ga- Ø-Ø-√xa- Hμ  
 your child very noon -LOC it g.CONJ-IRR-G.MOD-3.S-CL-√eat-VAR  
 “Your child will eat right at noon.”

(SC: You're giving the child a choice, you don't know for sure)

### c. Hortative

# I yátk'u kúnáx sitgamsáanx' at gaxaa

I yátk'u kúnáx sitgamsáan-x' at ga- √xaa  
 I yátk'u kúnáx sitgamsáan-x' at ga- Ø-Ø-√xa- μ  
 your child very noon -LOC it G.MOD-3.S-CL-√eat-VAR  
 “Let your child eat right at noon.”

(SC: Not being really forceful, giving him a choice, he's maybe diabetic so he has to eat then.)

### d. Potential

# I yátk'u sitgamsáanix' at gwaaxaa

I yátk'u kúnáx sitgamsáan-x' at g- wa- a- √xaa  
 I yátk'u kúnáx sitgamsáan-x' at g- u- a- Ø-√xa- μ  
 your child very noon -LOC it G.MOD-IRR-3.S-CL-√eat-VAR  
 “Your child might eat at noon.”

(SC: This would be okay in a context where you child has an upset stomach and the caretaker says that they'll try to have him eat at noon, but not when he must.)

This example set is consistent with Cable 2016 in that none of the verb modes investigated yielded a felicitous deontic necessity reading. The provided imperative sentence would have been used as a direct command to the student, not the parents. Again we see the consultant comment about either doing it, or not.

In example 20b, the comment concerning choice is an interesting one in that the way it's interpreted in Tlingit, 20b is offering the child a choice that is not the intended force of the context in English.

There is a gap in the data set presented here concerning an epistemic possibility environment. In the original elicitation, what was thought to be an epistemic possibility context turned out to instead be another circumstantial possibility context with an ability reading confound. If we return to table 20, that row of data is referencing Cable 2016's data on epistemic possibility instead. Due to time limitations, filling this gap and completing the paradigm will be left to future elicitation work.

Example 21 demonstrates an epistemic weak necessity set.

### Example 21.

#### Epistemic Weak Necessity

*Context:*

In Juneau it always rains this time of year.

Target: “It SHOULD be raining in Juneau right now.”

Offered Sentence:

##### a. Perfective (with gwál)

# Gwál séem daak wusitán Dzántik’ihéenix’, kúnáx yeedaat

gwál séem daak      wu-si-√tan      Dzántik’ihéeni-x’, kúnáx=yeedaat

gwál séem daak Ø-      wu- si- √tan-      H Dzántik’ihéeni-x’, kúnáx=yeedaat

DUB rain fall Ø.CONJ-PFV-CL-√precipitate- VAR Juneau      -LOC right.now

“Maybe it’s raining in Juneau right now.”

Constructed Sentences:

##### b. Prospective

\* Séem daak guxsatáan Dzántik’ihéenix’, kúnáx yeedaat.

Attempted: “It will be raining in Juneau right now.”

##### c. Hortative

# Séem daak gasataan Dzántik’ihéenix’, kúnáx yeedaat.

séem daak      ga-      sa-√taan      Dzántik’ihéeni-x’, kúnáx=yeedaat

séem daak Ø-      ga-      sa-√tan      -μ Dzántik’ihéeni-x’, kúnáx=yeedaat

rain fall Ø.CONJ-G.MOD-CL-√precipitate- VAR Juneau      -LOC right.now

“Let it rain in Juneau, right now.”

##### d. Potential

# Séem daak gwasitaan Dzántik’ihéenix’, kúnáx yeedaat.

séem daak      g-      wa- si-√taan      Dzántik’ihéeni-x’, kúnáx=yeedaat

séem daak Ø-      g-      u- si-√tan      -μ Dzántik’ihéeni-x’, kúnáx=yeedaat

rain fall Ø.CONJ-G.MOD-IRR-CL-√precipitate- VAR Juneau      -LOC right.now

“It might rain in Juneau right now.”

“It might be raining in Juneau right now.”

(SC: You can’t be sure.)

(Note: The second English translation is unconfirmed with the speaker but is likely a better aspectual interpretation into English.)

Here the prospective verb form is not compatible with the adverb time restriction, and neither the hortative or the potential are felicitous in this context. Why the consultant offered a sentence and yet ultimately rejected it as felicitous in context is an interesting question. In this particular case, when going back to see if 21a was compatible with this environment the speaker determined that it wasn't quite right for the *should* reading in English. As with all translation tasks, finding an exactly right correlation is difficult at best, but the speaker ultimately decided that this was not felicitous in this instance.

Example 22 looks at epistemic necessity.

**Example 22.**  
**Epistemic Necessity**

*Context:*

Dzéiwsh goes to the restaurant every morning at the same time of day. It's 9AM and so...

Target: "Dzéiwsh MUST be at the restaurant."

Offered Sentence:

**a. Imperfective (with gwál)**

# Gwál yú atxá daakeedix' yéi yatee, Dzéiwsh

gwál yú=atxá=daakeedi-x'	yéi		ya-	√tee	Dzéiwsh
gwál yú=atxá=daakeedi-x'	yéi	Ø-	ya-Ø-√te-	μ	Dzéiwsh
DUB restaurant		-LOC PREVERB	Ø.CONJ-??-CL√be-	VAR	James

"Maybe Dzéiwsh is at the restaraunt."

Constructed Sentences:

**b. Prospective**

# yú atxá daakéedix' yéi kgwatée, Dzéiwsh

yú=atxá=daakeedi-x'	yéi	k-	g-	wa-	√tée	Dzéiwsh
yú=atxá=daakeedi-x'	yéi	g-	g-	u-	Ø-√te-	Hμ Dzéiwsh
restaurant		-LOC PREVERB	G.CONJ-G.MOD-IRR-CL√be-	VAR	James	

"He will be at the restaurant, Dzéiwsh."

**c. Hortative**

# yú atxá daakéedix' yéi nagatee, Dzéiwsh

yú=atxá=daakeedi-x'	yéi	na-	ga-	√tee	Dzéiwsh
yú=atxá=daakeedi-x'	yéi	na-	ga-	Ø-√te-	μ Dzéiwsh
restaurant		-LOC PREVERB	N.CONJ-G.MOD-CL√be-	VAR	James

"Let him be at the restaurant, Dzéiwsh."

#### d. Potential

# yú atxá daakéedix' yéi ungaatee, Dzéiwsh.

yú=atxá=daakeedi-x' yéi u- n- gaa- √tee Dzéiwsh  
yú=atxá=daakeedi-x' yéi u- n- gaa- Ø-√te- μ Dzéiwsh  
restaurant -LOC PREVERB IRR-N.CONJ-G.MOD-CL√be- VAR James

“He may be at the restaurant, Dzéiwsh.”

(SC: You're just guessing.)

Similar to 21a, 22a was offered by the speaker and then ultimately rejected after further review. Like much of Tlingit semantic analysis, our understanding of *gwál* is also a work in progress, and may have to do with the hesitation about whether or not *gwál* is compatible with an English *must* environment.

## 5.4 Conclusion

The data presented here, and summarized in table 20 is consistent with a modal analysis that accounts for complex morphology (when the gap in epistemic possibility data is taken into account). Taking Cable 2016's work and assuming the subcategorization of deontic modality to circumstantial, the argument presented here is that the *g-* prefix default modal force is not overtly specified and so is able to give both a possible or necessary reading.

The following chapter looks at the formal semantic notation of the three morphemes discussed throughout this thesis.



## Chapter 6

### Prospective Aspect & Compositional Semantics

This work is based on Heim and Kratzer’s understanding of type driven interpretation (1998). This chapter then lays out the formal semantic notations that are applicable to each morpheme. Though this chapter may be the least accessible to a non-linguistic audience, it is intended to contribute to the formal semantic dialogue, to better improve linguistic theory. That goal may be ambitious, but also important for a better understanding of similar (or differing) linguistic phenomena.

First, in section 6.1 will be a more in depth review of the semantic notation itself, giving definitions for the formulas presented in the following sections. Section 6.2 will focus on the temporal futurity marker (*g*-). Section 6.3 will focus on the irrealis (or mood) marking (*u*-), and section 6.4 will present modality notation (*g*-). Section 6.5 will conclude this chapter.

#### 6.1 Semantic Notation

Mucha 2015 summarized much of the semantic notation that will be used in this chapter, and so much of the tables to follow can be credited to her work. Figure 16 for example was taken from Mucha 2015 but follows Bennett & Partee 1978 and Stechow 2009. It summarizes the relation of time intervals and the notation used to express them.

#### Relations of time intervals

- |    |             |                         |
|----|-------------|-------------------------|
| a. | $<$         | (anteriority, “before”) |
| b. | $>$         | (posteriority, “after”) |
| c. | $O$         | (overlap)               |
| d. | $\supseteq$ | (inclusion)             |
| e. | $\supset$   | (proper inclusion)      |

Figure 16. Time Intervals (Mucha 2015)

Similarly figure 17 summarizes semantic types, and variables respectively, following the conventions of Heim & Kratzer 1998 and Krazter 2001.

### Semantic types and domains

- a.  $e$  is the semantic type for entities, their domain is  $D_e = D$
- b.  $l$  is the semantic type for eventualities, their domain is  $D_l$
- c.  $i$  is the semantic type for temporal intervals, their domain is  $D_i$
- d.  $s$  is the semantic type for worlds, their domain is  $D_s$
- e.  $t$  is the semantic type for truth values, their domain is  $D_t$
- f. If  $\sigma$  and  $\tau$  are semantic types, then  $\langle \sigma, \tau \rangle$  is a semantic type.  
Nothing else is a semantic type.

### Variables

- a. 'x' ranges over entities
- b. 'e' ranges over eventualities
- c. 't' ranges over temporal intervals
- d. 'w' ranges over worlds
- e. 'P' ranges over functions

Figure 17. Semantic Types & Variables (Mucha 2015)

With figures 16 and 17 as keys, we can now move into discussing the lambda notation of prospective aspect.

## 6.2 Temporal Futurity Marker $g$ -

The conjugation marker  $g$ - denotes temporal futurity in line with the figure 18 below when its used in its aspectual marking function, overviewed in chapter 3.

$$[[g-]]^{c,w} = \lambda P_{\langle i, st \rangle} \lambda t \lambda w . \exists e [t < \tau(e) \ \& \ P(e)(w)]$$

Figure 18. Futurity (adapted from Kratzer 1998)

This applies to conjugation marker  $g$ - in its aspectual function. This is to say that the conjugation prefix  $g$ - is homophonous with non-prospective and non-aspectual uses of the conjugation prefix  $g$ - (i.e. motion & lexical uses as discussed in chapter 3).

## 6.3 Irrealis Marker $u$ -

As discussed in chapter 4 the irrealis is still a debated category, and as such there is no clear formalization that would fit properly for Tlingit. Moreover, a semantic formalization of irrealis marking is not available in the literature and so what follows will be the best estimation of one, per this research.

$[[\text{u-}]]^{c,w} = \lambda p_{\langle st \rangle} : \text{the speaker doesn't believe } p \text{ is true in the actual world . } p$

Figure 19. Irrealis Marking as Presupposition

#### 6.4 Modality Marker $g-$

Figure 19 below demonstrates a formalization of modality that fits with how this modal marker  $g-$  is behaving in the contexts reviewed in chapter 5.

$[[g-]]^{c,w}$  is only defined if  $c$  provides a circumstantial modal base  $B$ .  
if defined,  $[[g-]]^{c,w} = \lambda P_{\langle i, st \rangle} \lambda t \lambda w . \forall w' [w' \in B(w, t) \rightarrow P(t)(w')]$

Figure 20. Modality Formalization (adapted from Davis, Matthewson, Rullmann 2009)

This is to say the the prefix  $g-$  encodes for circumstantial modality as its modal flavour. Following Rullmann et al. 2009, here the assumption is that although the force is universal/necessity, the interpretation can be weakened by restricting the domain of worlds over which the modal quantifies. Rullmann et al 2009, uses a modal choice function, which applied to the set of worlds given by the modal base and takes a subset from them. So, if the choice function was the identity function, it returns the entire modal base and gives an ordinary necessity interpretation. If it picks a proper subset, the modal then quantifies over a smaller set of worlds and you get a weaker reading. Here we assume a similar weakening operation.

#### 6.5 Compositionally

$[[g-]]^{c,w}$  is only defined if  $c$  provides a circumstantial modal base  $B$ .  
if defined,  $[[g-]]^{c,w} = \lambda P_{\langle i, st \rangle} \lambda t \lambda w . \forall w' [w' \in B(w, t) \rightarrow P(t)(w')]$

$[[\text{u-}]]^{c,w} = \lambda p_{\langle st \rangle} : \text{the speaker doesn't believe } p \text{ is true in the actual world . } p$

$[[g-]]^{c,w} = \lambda P_{\langle i, st \rangle} \lambda t \lambda w . \exists e [t < \tau(e) \ \& \ P(e)(w)]$

Figure 21. The Composition of the Three Morphemes ( $g-u-g-$ )

Here we assume (following similar proposals made by Condoravdi 2001, Rullmann and Matthewson to appear) that the temporal futurity marker ( $g-$ ) semantically scopes below the modality marker ( $g-$ ), and applies first. The irrealis ( $u-$ ) takes an entire proposition and thus applies last. It's listed in the

middle because that is typically where it appears in linear ordering but because it takes an entire proposition, its linear ordering doesn't change its semantic scope, as far as this research can tell.

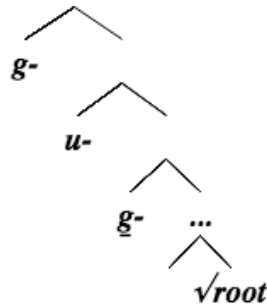


Figure 22. Tentative Prefix Ordering

## 6.6 Conclusion

This chapter contributes to the continued inclusion of indigenous languages as an important source of the discipline's mutual understanding of morphological and semantic phenomena.

## Chapter 7

### Conclusion

This work has presented a compositional semantic analysis of a trimorphemic prospective aspect cluster (*g-u-g*) in Tlingit.

In chapter 1, there was a review of Tlingit linguistic terminology, previous research, and the area in which Tlingit is spoken.

Chapter 2 was a theoretical review of previous linguistic work that provided the foundation for the arguments made throughout the rest of the research.

Chapter 3 looked specifically at the conjugation prefix *g*- giving an overview of conjugation classes in Tlingit in general, before asserting that the conjugation prefix *g*- that appears in this cluster is performing its aspectual function. We left the chapter with the assertion that the prospective nature of the trimorphemic cluster originates from this particular morpheme.

Chapter 4 looked at the irrealis prefix *u*-. Issues in the current linguistic literature on what makes an irrealis marker “irrealis” versus subjunctive for example was recounted, before looking at the environments in which this marker appears for Tlingit in particular. The chapter was ended with an assertion that there is a semantic contribution being made by the prefix, but just what that contribution is will have to be accounted for in later research. One possible analysis is that this morpheme contributes a definedness condition while leaving the truth-conditions unaffected which was formalized later in chapter 6.

Chapter 5 considers modality in Tlingit, looking specifically at the modal prefix *g*-, beginning with Cable 2016’s analysis, and then presented a modal analysis that accounts for each morpheme under discussion (*g-u-g*) individually. It was determined that the *g*- prefix default modal force is not overtly specified and so is able to give both a possible or necessary reading. For our trimorphemic prospective aspect cluster, the *g*- contributes a weak necessity force, causing the prospective verb form in Tlingit to always read as weak necessity in nature. This follows what Cable 2016 showed, with some changes. A compositional semantic approach necessitates that the underlying force of *g*- be underspecified.

Chapter 6 presents the semantic formalization of each morpheme. The question of what restricts the modal force in potential and prospective verb modes is left for further research.

This research raises questions about the intersection between motion and aspect, the definition of irrealis marking as a grammatical category, and questions of modality research on understudied languages. It also raises the issue of how languages divide modal and temporal properties. In languages like English, an element like *will* is assumed to convey both modality and temporal futurity. In some languages, like was shown in this work with Tlingit, those two elements are separated into different morphemes (*g*- and *g*-). Matthewson 2013 has show a similar phenomena in Gitksan. The question then is why do many languages, like English, bundle these two elements, and what prevents the temporal futurity marker from appearing without the modal marker in Tlingit? As

Tlingit marks these two elements by two different morphemes what prevents Tlingit from just using the *g*- prefix from marking future alone, instead of necessarily co-occurring with the *g*- modal prefix?

This is a huge question, cross linguistically, and we do not have an answer to present here. Instead we leave this work now with the hopes that the information here is useful both to furthering our linguistic understanding of language as a whole, but more importantly relevant to those hoping to learn this complex, yet absolutely amazing language.

Gunalchéesh to the elders who shared their knowledge, and gunalchéesh reader.

Yee gu.aa yáx x'wán!

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