

# Two Paths to Habituality: The Semantics of ‘Habitual Mode’ in Tlingit (and Simple Present in English)<sup>1</sup>

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**ABSTRACT:** This paper presents a detailed description and formal semantic analysis of habitual sentences in Tlingit (Na-Dene; Alaska, British Columbia, Yukon). As in many other languages (Carlson 2005, 2012), there are two means in Tlingit for expressing a habitual statement, such as ‘*my father eats salmon*’. The first employs a relatively unmarked verb, arguably realizing imperfective grammatical aspect. In the second type of habitual sentence, however, the verb bears special ‘habitual’ morphology. Although there is a significant overlap in the use of these two constructions, certain semantic contrasts do exist. Most notably, the habitual morphology of Tlingit cannot be used to express pure, unrealized ‘dispositions’/‘functions’/‘duties’ (e.g., ‘*Mary handles any mail from Antarctica*’). In other words, Tlingit habitual morphology – unlike imperfective aspect – requires the ‘habituality’ in question to have actually occurred, an effect that has also been observed for specially marked habitual-constructions in a variety of other, unrelated languages (Green 2000, Bittner 2008, Boneh & Doron 2008, Filip 2018). I develop and defend a formal semantic analysis that captures these (and other) contrasts between imperfective and habitual verbs. In brief, imperfective aspect is argued to possess a modal semantics, quantifying over alternative worlds/situations (Menendez-Benito 2013, Arregui et al. 2014). Habitual morphology, however, is argued to be associated with a (potentially covert) quantificational adverb, one that quantifies strictly over times in the actual world. The consequences of this account for the analysis of habitual sentences in other languages are explored, including English ‘simple present’.

## 1. Introduction: The Expression of Habituality in Tlingit

Despite their morphophonological simplicity, English sentences like (1) possess an especially complex semantics, one broadly relating to the habits, propensities, dispositions, *etc.* exhibited by the subject.

(1) **English Habitual Sentence:** My father **eats** salmon.

Although there is a broad consensus on the general form and character of these ‘habitual’ sentences, many quite fundamental issues regarding their exact truth-conditions and compositional interpretation remain obscure (Carlson 1977, 1989, 2005, 2012; Cohen 1999, 2001, 2004; Deo 2009; Greenberg 2007; Krifka *et al* 1995; Menendez-Benito 2013).

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<sup>1</sup> Deepest thanks and gratitude are owed first and foremost to Tlingit elders Lillian Austin (Yaḡdulákt), Irene Cadiente (Jigeit Tláa), George Davis (Kaxwaan Éesh), Margaret Dutson (Shak’sháani), Selena Everson (Kaséix), William Fawcett (Kóoshdaak’w Éesh), Carolyn Martin (K’altseen), John Martin (Keihéenák’w). I will forever be deeply grateful for all that they have taught me regarding the Tlingit language, as well as for their generosity, patience, and good humor.

I dedicate this work to the memories of Mr. Davis, Mrs. Dutson, Mrs. Everson, Mr. Fawcett, and Mr. Martin, all of whom have Walked Into the Forest since the time this project began. This project and many others owe an immeasurable amount to their tireless, inspiring, and entertaining teaching. Every moment spent with them was a blessing; their knowledge, spirit, and humor will be very deeply missed.

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Further complicating our understanding of these structures is the fact that some languages exhibit multiple ways of broadly expressing the ‘habitual’ meaning conveyed by (1) (Carlson 2005, 2012). For example, speakers of Tlingit (Na-Dene; Alaska, British Columbia, Yukon) can translate English (1) using either the verb form boldfaced in (2a) below – a so-called ‘imperfective’ form – or the one boldfaced in (2b) – a so-called ‘habitual’ form.

(2) **Expressions of Habituality in Tlingit**<sup>2</sup>

- a. Verb in ‘Imperfective Mode’  
 A<sub>x̄</sub> éeshch t’á **axá.**  
 1sgPOSS father.ERG king.salmon 3O.IMPRV.3S.eat  
*My father eats king salmon* (MD)<sup>3</sup>
- b. Verb in ‘Habitual Mode’  
 A<sub>x̄</sub> éesh xáat **uxáaych.**  
 1sgPOSS father salmon 3O.HAB.3S.eat  
*My father eats salmon.* (SE)

Many further details regarding the structure and meaning of the Tlingit verbs in (2) will be provided in the sections below. For the moment, however, we can already note that the basic facts in (1)-(2) raise the following key questions.

(3) **Basic Questions Regarding Habituality in Tlingit and English**

- a. What is the morphosyntactic & semantic difference – if any – between the two Tlingit verb forms in (2)?
- b. How do either of those verb forms in Tlingit compare syntactically and/or semantically to the simple English verb form in (1)?

The majority of this paper will be focused upon the question in (3a), the formal analysis of the Tlingit verb forms in (2). However, much of our discussion will take as background certain commonly held views regarding English sentences like (1), and so a perspective on the question

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<sup>2</sup> I employ the following glossing abbreviations, based on those originally developed by Crippen (2013): 1, ‘first person’; 2, ‘second person’; 3, ‘third person’; [+I], ‘I-feature of classifier’; ABL, ‘ablative’; ACC, ‘accusative’; CL, ‘classifier’; COND, ‘conditional’; CONT, ‘contingent’; COP, ‘copula’; DEM, ‘demonstrative’; DEP, ‘dependent indefinite’; ERG, ‘ergative’; FOC, ‘focus’; FUT, ‘future’; HAB, ‘habitual’; IMPRV, ‘imperfective’; IMPRVSUF, ‘imperfective suffix’; IND, ‘indicative’; Indef, ‘indefinite’; INST, ‘instrumental’; naCONJ, ‘na-conjugation’; NOM, ‘nominative’; O, ‘object’; PART, ‘partitive’; pl (PL) ‘plural’; POSS, ‘possessive’; PROG, ‘progressive’; PRS, ‘present’; PRV, ‘perfective’; PRVSUF, ‘perfective suffix’; PST, ‘past’; PTCPL, ‘participle’; RECIP, ‘reciprocal’; REL, ‘relative clause’; REP, ‘repetitive’; S, ‘subject’; sg, ‘singular’; SUB, ‘subordinate clause’; SUBJ, ‘subjunctive’.

<sup>3</sup> Throughout this paper, I will indicate whether a Tlingit sentence was (i) constructed by myself and judged by native speakers to be acceptable, or (ii) actually constructed and offered by the speakers themselves. In the former case, the sentence will be followed by a ‘(C)’, for ‘constructed’. In the latter case, I will write the initials of the speaker who provided the sentence: (LA) for Lillian Austin, (IC) for Irene Cadiente, (MD) for Margaret Dutson, (SE) for Selena Everson, (CM) for Carolyn Martin, and (JM) for John Martin.

in (3b) will also emerge by the end.<sup>4</sup> Furthermore, the answers to these questions will also themselves touch upon some broader, overarching questions in the semantic study of habituais and generics across languages. Most obviously, our analysis of the Tlingit verb forms in (2) might inform our broader understanding of similar systems in other languages. As already noted, and as further illustrated below, it is not uncommon for natural languages to possess two means for conveying the general ‘habitual’ information contributed by (1).

#### (4) Multiple Expressions of Habituality in Natural Languages

##### a. African American English (Green 2000):

(i) Bruce **sing**. ‘Bruce sings’

(ii) Bruce **be singing**. ‘Bruce sings’

##### b. Czech (Filip 2018):

(i) Honza **sedí** v hospodě  
John sit.**IMPRV** in pub  
*John sits in a pub*

(ii) Honza **sedává** v hospodě  
John sit.**HAB** in pub  
*John sits in a pub.*

##### c. Hebrew (Boneh & Doron 2008):

(i) Ya’el **nas’a** la-’avoda ba-’otobus  
Yael go.PST to-work by-bus  
*Yael went (used to go) to work by bus.*

(ii) Ya’el **hayta nosa’-at** la-’avoda ba-’otobus  
Yael **HAB.PST** go-PTCPL to-work by-bus  
*Yael went (used to go) to work by bus.*

To preview the central proposals developed here, we will see in the sections below that there are indeed important semantic and morphosyntactic differences between the Tlingit ‘imperfective mode’ in (2a) and the ‘habitual mode’ sentence in (2b). Chief among these is the fact that only the imperfective mode (2a) – and not the habitual mode (2b) – can be used to describe pure dispositions, ones that may not yet have been actualized by the subject. To illustrate, in the scenario under (5), the coffee machine has not yet actually been used, but has the capacity to make great coffee. Tlingit speakers can describe such a capacity using an imperfective-mode verb (5a), but not a habitual-mode verb (5b).

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<sup>4</sup> In addition, some further consequences for the analysis of English habitual sentences like (1) are presented in an appendix to this paper.

(5) **Tlingit Imperfective vs. Habitual and Pure Dispositions**

Scenario: We just bought a new coffee machine. **It’s never before been used.** But, this is a great model of coffee machine. Everyone agrees that this model makes great coffee.

a. Imperfective Mode Verb

Yá yées aa washéen kúnáx linúktsi coffee áwé  
DEM new PART machine very IMPRV.3S.sweet.REL coffee FOC

**al.úkx**

3O.IMPRV.3S.boil.REP

*This new machine boils very sweet coffee.*

(SE)

b. Habitual Mode Verb

# Yá yées aa washéen kúnáx linúktsi coffee áwé  
DEM new PART machine very IMPRV.3S.sweet.REL coffee FOC

**ool.úkch**

3O.HAB.PRV.3S.boil

*Speaker Comment:* “No. That means that you’ve used it.”

(C)

Importantly, judgments parallel to these have been reported for a wide variety of languages, include those listed in (4) (Carlson 2005, 2012).

In order to capture these and a number of other contrasts, Tlingit imperfective-mode sentences ((2a), (5a)) will be argued to have the structure in (6a) below. Under this analysis, the ‘habitual’ semantics observed for these sentences is directly contributed by the imperfective aspect itself, which can be interpreted as a modal quantifier (Deo 2009, Arregui *et al.* 2014).

(6) a. General Structure Proposed for Tlingit Imperfective-Mode Habituals:

[<sub>TP</sub> T [<sub>AspP</sub> **IMPRV**<sub>HAB</sub> [<sub>VP</sub> my father eat salmon ] ... ]

b. General Structure Proposed for Tlingit Habitual-Mode Habituals:

[<sub>TP</sub> **TempQuant** [<sub>TP</sub> T [<sub>AspP</sub> ASP [<sub>VP</sub> my father eat salmon ] ... ]

Habitual-mode sentences ((2b),(5b)) however, will be argued to have the structure in (6b). In brief, the special ‘habitual’ morphology seen in these sentences is licensed by the presence of a (non-modal) temporal quantifier (*i.e.*, quantificational adverb), locally scoping over the verb. In a sense, then, Tlingit habitual morphology is akin to the special morphology of so-called ‘dependent indefinites’, which serves to signal that a clause-mate quantifier is scoping over the marked element (Farkas 1997, 2001, 2002; Brasoveanu & Farkas 2011).

Returning to the English sentence in (1), it is most commonly held that such sentences have a form like that in (6a), where the habitual meaning is contributed by a kind of modal element, connected with ‘imperfective aspect’ in other languages (Deo 2009, 2015). However, in an appendix to this paper, I present evidence that sentences like (1) are in principle ambiguous, and can also receive the structure of Tlingit habitual-mode sentences in (6b). Thus, the morphology of

Tlingit – as well as the other languages in (4) – may serve to disambiguate two generally available but semantically quite different means for expressing ‘habituality’ in natural language.

The remainder of this paper is structured as follows. In the next section, I give some general background on the Tlingit language and the methodology used in this study. Section 3 then provides a detailed overview of the morphological form and basic semantics of the three Tlingit verbal inflections of major interest to this paper: the perfective-mode, the imperfective-mode, and the habitual-mode(s). With these basic facts on the table, Section 4 provides the key formal background regarding the syntax and semantics of aspect and tense across language, as well as the syntax and semantics of Tlingit imperfective-mode and perfective-mode, specifically. We then turn our attention to the habitual-mode(s) of Tlingit, noting a previously-documented relationship between these verbal forms and quantificational adverbs. I will therefore review some background assumptions and facts regarding the syntax and semantics of quantificational adverbs. After this review, Section 5 is devoted to laying out and defending the analysis of Tlingit habitual-mode outlined in (6b) above. Of course, there remain some outstanding challenges for this analysis, and these are summarized in Section 6, which concludes the paper. Finally, the paper includes an appendix, where I explore some further consequences of this account for the analysis of English habitual sentences like (1), as well as some additional morphosyntactic complexities regarding the habitual sentences in Tlingit.

## 2. Linguistic and Methodological Background

The Tlingit language (Lingí't; /ɬn.kít/) is the traditional language of the Tlingit people of southeast Alaska, northwest British Columbia, and southwest Yukon Territory. It is the sole member of the Tlingit language family, a sub-branch of the larger Na-Dene language family (Campbell 1997, Mithun 1999, Leer et al. 2010). It is thus distantly related to Athabaskan languages like Navajo and shares their complex prefixal verbal morphology (Leer 1991), aspects of which will be discussed in Section 3 below.

Tlingit is a highly endangered language. While there has been no official count of fully fluent speakers, it is privately estimated by some that there are less than 200 (James Crippen (Dze'iwsh), Lance Twitchell (X'unei), p.c.). Most of these speakers are above the age of 70, and there is no known adult below the age of 50 who learned Tlingit as their first language. There are extensive, community-based efforts to revitalize the language, driven by a multitude of Native organizations and language activists too numerous to list here. Thanks to these efforts, some younger adults have acquired significant fluency, and some of their children are acquiring Tlingit as one of their first languages (Twitchell 2018).

Unless otherwise noted, all data reported here were obtained through interviews with native speakers of Tlingit. Eight Tlingit elders participated in this study: Lillian Austin (Yaxdulákt), Irene Cadiante (Jigeit Tláa), George Davis (Kaxwaan Éesh), Margaret Dutson (Shak'sháani), Selena Everson (Kaséix), William Fawcett (Kóoshdaak'w Éesh), Carolyn Martin (K'altseen), John Martin (Keihéenák'w). All were residents of Juneau, AK at the time of our meetings, and are speakers of the Northern dialect of Tlingit (Leer 1991). Two or three elders were present at each of the interviews, which were held in classrooms at the University of Alaska Southeast in Juneau, AK. These interviews took place during the summers of 2016, 2017, and 2019.

The linguistic tasks presented to the elders were straightforward translation and judgment tasks. The elders were presented with various scenarios, paired with English sentences that could felicitously describe those scenarios. The scenarios were described orally to the elders, all of whom

were entirely fluent in English, and a written (English) description was also distributed. The elders were asked to freely describe the scenarios, as well as to translate certain targeted English sentences describing them. In order to more systematically study their semantics—and to obtain negative data—Tlingit sentences were also examined using truth/felicity judgment tasks, a foundational methodology of semantic fieldwork (Matthewson 2004). The elders were thus asked to judge the ‘correctness’ (broadly speaking) of various Tlingit sentences relative to certain scenarios. Unless otherwise indicated, all speakers agreed upon the reported status of the sentences presented here.

### 3. Basic Description of Tlingit Imperfective, Perfective, and Habitual Modes

There are five inflectional forms – traditionally called ‘modes’ – that a Tlingit verb heading a main, declarative clause can appear in (Leer 1991): (i) the imperfective-mode, (ii) the perfective-mode, (iii) the habitual-mode, (iv) the future-mode, and (v) the potential mode.<sup>5</sup> Only the first three of these – the imperfective, perfective, and habitual – will be of key interest to our discussion.<sup>6</sup> Consequently, in this section, I will provide a relatively informal overview regarding their morphophonological form and interpretation.

#### 3.1 The Perfective and Imperfective Modes of Tlingit

Like in the related Athabaskan languages, the verbal morphology of Tlingit is traditionally described as being ‘templatic’ with extensive ‘distributed exponence’ (Leer 1991). Under this mode of description, a single morpho-syntactic category in Tlingit is realized morphophonologically by a particular combination of prefixes and suffixes, each of which is individually ‘meaningless’, and whose order is rigidly specified by a language-particular template of affixal positions (Leer 1991).<sup>7</sup>

To illustrate, the category of ‘perfective-mode’ in Tlingit is morpho-phonologically realized by the following combination of elements: (i) a dedicated ‘perfective’ prefix *wu-*, which appears only in the perfective-mode, (ii) the absence of any conjugation-class prefix, (iii) the appearance of the so-called ‘I-feature’ on the verbal classifier prefix, and (iv) the use of a particular ‘perfective’ stem suffix, the identity of which depends upon the verb, but which can generally be predicted from certain other inflectional forms.<sup>8</sup> Such a combination of morphemes can be witnessed in the perfective-mode verb under (7) below. To make clear the underlying structure of that verb, I provide an abstract morphological decomposition of the verb, below the surface pronunciation of the sentence and above the glossing and free translation.

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<sup>5</sup> In addition to these five, Leer (1991) also identifies a now-defunct ‘Realizational’ mode, which seems to have left the language in the past few hundred years, but is preserved in certain narratives and songs. It seems to have been broadly semantically equivalent to the perfective mode, and etymologically related to perfective morphology in the Athabaskan languages (Leer 1991; Crippen, p.c.).

<sup>6</sup> For more information on the future-mode and potential-mode, their form and semantics, see Cable (2017a).

<sup>7</sup> But, see Crippen (2019) for an opposing analysis, where the prefixes and suffixes of Tlingit are each the realizations of distinct syntactic heads, and their ordering follows from independent principles of either syntax or phonology.

<sup>8</sup> In the extant dialects of Tlingit, these perfective stem suffixes are highly abstract, and generally surface as changes to either the length or the tone of the vowel in the stem.

(7) **Illustration of Perfective-Mode in Tlingit**

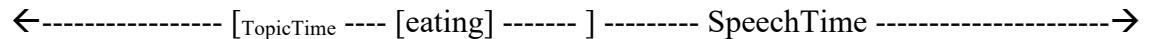
A <sub>x</sub>	tláach	wé	sakwnéin	aawaḡáa.	(MD)
A <sub>x</sub>	tláa-ch	wé	sakwnéin	a-wu-∅-∅-i-ḡa-y	
1sgPOSS	mother-ERG	DEM	bread	3O-PRV-3S-CL-[+I]-eat-PRVSUF	

*My mother ate the bread.*

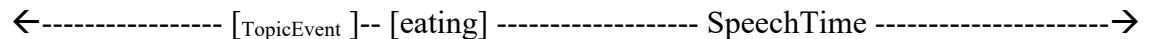
As discussed in detail by Leer (1991) – and as suggested by its very name – the general meaning of perfective-mode in Tlingit tracks closely with that of perfective aspectual morphology across languages. In main clauses, perfective-mode verbs generally describe events that have taken place in the past.<sup>9</sup> Furthermore, that past event is presented as either (i) lying within some topical state or interval of time, or (ii) lying just after some topical event, typically the immediately preceding event in a narrative discourse. That is, perfective-mode in Tlingit generally plays the role of ‘advancing the narrative’ (Leer 1991), again a role commonly fulfilled by perfective aspect in the world’s languages. Furthermore, when taken together, these features of the perfective-mode typically lead to an inference (in main-clauses) that events described by perfective-mode verbs are ‘over’ or ‘completed’ by the time of speech.<sup>10</sup> In summary, then, the meaning of a perfective-mode sentence like (7) can be visually modeled by a diagram like those in (8) below.<sup>11</sup>

(8) **Topographical Picture of the Meaning of Tlingit Perfective-Mode**

a. Time of Eating in (7) Lies Within Some Topical Time or State:



b. Time of Eating in (7) Lies Just After Preceding Event in Narrative:



In contrast to the perfective-mode in (7), the imperfective-mode of Tlingit has a quite simple morphophonological form. There is no aspectual prefix associated with imperfective mode, and the conjugation-class prefixes do not appear either. The principle exponent of this category is a particular imperfective suffix, the identity of which depends upon the verb. Moreover, unlike the suffix appearing in perfective-mode, the imperfective suffix cannot be predicted from any other inflectional forms of the verb; it must simply be independently memorized for each verb.<sup>12</sup> Finally, stative verbs appearing in the imperfective-mode additionally exhibit the so-called ‘I-feature’ on their verbal classifier prefix; this feature does not, however, appear with eventive/dynamic verbs

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<sup>9</sup> The temporal effects of perfective-mode in subordinate clauses are a much more complicated matter, just as they are for perfective aspect in most languages (Leer 1991). Since our discussion in this paper will focus exclusively on the semantics of matrix verb forms, I will put aside those additional complexities here.

<sup>10</sup> There is evidence to suggest that, as in other languages of the Pacific Northwest, this ‘completion inference’ with Tlingit perfectives is merely a defeasible implicature, and is not part of the inherent meaning of the perfective mode.

<sup>11</sup> As documented by Cable (2017b), the ‘perfective’ mode of Tlingit also seems to allow an interpretation more akin to a ‘perfect’, which places the event described *before* a particular (topical) time. For purposes of our discussion here, I set aside this secondary interpretation of the perfective mode.

<sup>12</sup> Also, once again, in the extant dialects of Tlingit, these imperfective suffixes are highly abstract, and generally surface as changes to either the length or the tone of the vowel in the stem.

in the imperfective-mode. These generalizations are illustrated by the pair of sentences under (9) below.<sup>13</sup>

(9) **Illustration of Imperfective-Mode in Tlingit**

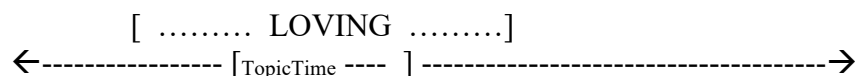
- a. Eventive/Dynamic Verb in Imperfective:  
 A<sub>x̄</sub>              éesh    káaxwee    adaná  
 A<sub>x̄</sub>              éesh    káaxwee    a-Ø-da-na'  
 1sgPOSS      father   coffee      3O-3S-CL-drink-IMPRVSUF  
*My father drinks coffee. / My father is drinking coffee.* (MD)
- b. Stative Verb in Imperfective  
 A<sub>x̄</sub>              tláach              asixán                              a<sub>x̄</sub>              éesh.  
 A<sub>x̄</sub>              tláa-ch              a-Ø-s-i-xan-y                      a<sub>x̄</sub>              éesh  
 1sgPOSS    mother-ERG    3O-3S-CL-[+I]-love-IMPRVSUF    1sgPOSS    father  
*My mother loves my father.* (LA)

Regarding the meaning of imperfective-mode, again the choice of the label ‘imperfective’ is quite apt. As documented by Leer (1991), imperfective-mode exhibits all the characteristics generally found for imperfective aspect across languages. First, in terms of its temporal effects, imperfective-mode can be used to describe events/states holding either in the past or at present.<sup>14</sup> In addition, there are three principle uses that imperfective-mode can receive. With stative verbs, imperfective-mode indicates that the state in question holds throughout a particular topical interval of time; this usage is sometimes referred to as the ‘Ongoing State’ interpretation of imperfective. With eventive verbs, however, imperfective mode can be construed in one of two different ways. First, imperfective-mode can be used when the event in question holds throughout a particular topical interval of time, a usage sometimes referred to as the ‘Ongoing Event’ interpretation. Secondly, and most importantly, eventive verbs bearing imperfective-mode can be interpreted to mean that there held throughout a particular topical time some general habit, propensity, disposition, *etc.* for events of the kind described to occur. This usage – of central interest to us here – is commonly referred to as the ‘Habitual’ interpretation of imperfective.

We will return later to the question of whether these three ‘usages’ of imperfective-mode (and imperfective aspect, more generally) should be viewed as distinct ‘readings’. For the moment, however, we can visually represent these three usages via diagrams like those in (10) below.

(10) **Topographical Picture of the ‘Meanings’ of Tlingit Imperfective-Mode**

- a. Ongoing State: Time of State in (9b) Lies Throughout Some Topical Time

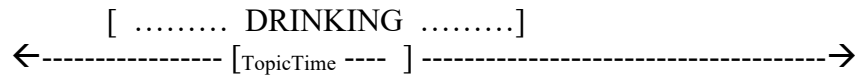


<sup>13</sup> It should be noted, however, that the preceding description of ‘imperfective-mode’ holds only for the forms that Leer (1991) refers to as ‘primary imperfectives’. For the purposes of this study, I set aside here the so-called ‘secondary imperfectives’ of Tlingit, which seem to have largely fallen out of use by present speakers of the language.

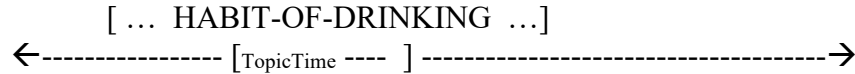
<sup>14</sup> To describe a future event or state, a verb in Tlingit must bear either the ‘future-mode’ or the ‘potential-mode’ (Cable 2017a, 2017b, 2019).



b. Ongoing Event: Time of Event in (9a) Lies Throughout Some Topical Time



c. Habitual: Throughout Topical Time There is a ‘Habit’ of Events in (9a)



Finally, before we turn our attention to the Tlingit habitual-mode(s), I will note one further feature of imperfective-mode, one that is again shared with imperfect aspect across other languages: it can be used to form generics. Note, for example, that sentence (11) is ambiguous in Tlingit (Leer 1991). As the free translations below indicate, it can be interpreted as saying either (i) that some particular group of dogs is/was barking, or (ii) that the *entire species* ‘dog’ has the habit/propensity/disposition of barking.

(11) **The Use of Tlingit Imperfective-Mode in Generics**

- |       |                                    |      |
|-------|------------------------------------|------|
| Keitl | asháa.                             | (LA) |
| Keitl | a-Ø-Ø-sha-:                        |      |
| dog   | 3O-3S-CL-bark- <b>IMPRVSUF</b>     |      |
| a.    | <i>Some dogs are/were barking.</i> |      |
| b.    | <i>Dogs bark.</i>                  |      |

Under the interpretation in (11b), sentence (11) constitutes a ‘generic’. That is, the sentence is understood as a claim about the entire class – or *kind* – ‘DOG’, and the properties instances of that class typically exhibit. Moreover, whether an imperfective-mode sentence receives such a ‘generic’ interpretation intuitively depends upon the interpretation of the imperfective-mode itself. That is, generics are commonly held to be based upon either ‘Habitual’ or ‘Ongoing State’ readings of imperfective aspect (Krifka *et al.* 1995, Greenberg 2007, Deo 2009). Consequently, if the imperfective receives an Ongoing Event construal, the sentence will not be a generic, but instead a claim about some particular entity or group of entities (11a).

The analysis of generics will not figure significantly into our discussion, and so I will largely be putting them aside in this paper. However, the interactions just noted between generic readings and the interpretation of imperfective will play a role in our later discussion of English sentences like (1), and so I will introduce later some common proposals regarding the syntax/semantics of such readings.

**3.2 The Habitual Mode(s) of Tlingit**

Although I have until now been using the singular term ‘habitual-mode’, this category in Tlingit actually comprises a group of inflectional subcategories, which we might refer to collectively as ‘the habitual modes’. Leer (1991) reports that there are three subtypes of habitual-mode, which he dubs (i) ‘perfective habitual’, (ii) ‘imperfective habitual’, and (iii) ‘future habitual’. Of these three, however, the ‘future habitual’ seems to have dropped out of the language. Leer (1991: 417) himself

already reports this form as being “very rare”, and no speaker that I have worked with has ever recognized or produced such forms. For this reason, I will be putting aside future habituals in this discussion. In addition, I will also make a slight cosmetic change to Leer’s (1991) original terminology. For reasons that we will soon see, it would be more accurate to label these categories ‘habitual perfective’ and ‘habitual imperfective’, and so I will do so throughout this paper.<sup>15</sup>

The ‘habitual perfective-mode’ of a verb is formed from the following ingredients: (i) the conjugation-class prefix for the verb, *if that verb is* ‘NA-’, ‘GA-’, or ‘GA-conjugation’, (ii) if the verb is ‘Ø-conjugation’, a dedicated ‘habitual perfective’ prefix *u-*,<sup>16</sup> (iii) the habitual suffix ‘-ch’. These forms are illustrated below; sentence (12a) features a ‘Ø-conjugation’ verb in the habitual perfective mode, while (12b) contains a NA-conjugation verb.

(12) **Illustration of Habitual Perfective-Mode in Tlingit**

- a. Habitual Perfective-Mode, Ø-Conjugation Verb:  

A <sub>x̄</sub>	éesh	xáat	uxáaych.	
a <sub>x̄</sub>	éesh	xáat	a-u-Ø-Ø-xa-ch	
1sgPOSS	father	salmon	3O-HAB.PRV-3S-CL-eat-HAB	
	<i>My father eats salmon.</i>			(SE)

  
b. Habitual Perfective-Mode, Non-Ø-Conjugation Verb:  

A <sub>x̄</sub>	tláa	x’úx’	anahunch	
A <sub>x̄</sub>	tláa	x’úx’	a-na-Ø-Ø-hun-ch	
1sgPOSS	mother	book	3O-naCONJ-3S-CL-sell-HAB	
	<i>My mother sells books.</i>			(C)

The ‘habitual imperfective-mode’ of a verb is formed by taking the regular imperfective-mode form and following it with the special habitual particle *nooch*.<sup>17</sup> Compare, for example, the habitual perfective-mode for *hun* ‘sell’ in (12b) with the habitual imperfective mode form in (13) below.

(13) **Illustration of Habitual Imperfective-Mode in Tlingit**

- |                 |  |       |                        |              |
|-----------------|--|-------|------------------------|--------------|
| A <sub>x̄</sub> | tláa   | x’úx’ | ahoon                  | nooch.       |
| a <sub>x̄</sub> | tláa   | x’úx’ | a-Ø-Ø-hun-:            | <b>nooch</b> |
| 1sgPOSS         | mother   | book  | 3O-3S-CL-sell-IMPRVSUF | <b>HAB</b>   |
|                 | <i>My mother sells books (Or, ‘My mother is often/always/regularly selling books’)</i> |       |                        |              |
- (LA)

Having now explained the morphophonological makeup of these four key inflections, I will henceforth be suppressing much of these details in the data presented below. Example sentences will no longer include the morphophonological decomposition of the Tlingit verbs, and I will move to a simpler convention for glossing those verbs. The verbs themselves will simply be glossed as being either ‘imperfective’ (IMPRV), ‘perfective’ (PRV), or ‘habitual perfective’ (HAB.PRV), while the modal particle *nooch* will be glossed as ‘HAB’.

<sup>15</sup> A similar terminological change to ‘habitual future’ for the third (now defunct) subtype of habitual-mode would also be warranted by its reported meaning (Leer 1991: 417).

<sup>16</sup> Crippen (2019) proposes that this ‘habitual perfective’ prefix *u-* and the ‘perfective’ prefix *wu-* are underlyingly the same.

<sup>17</sup> Etymologically, this habitual particle originates from the verb *nuk* ‘do’ in the habitual perfective-mode.

The existence of these two subtypes of habitual forms (12)-(13) naturally begs the question of what the semantic difference (if any) between them is. Before coming to that, let us first note the semantic properties these forms have in common. As indicated above, verbs in a habitual mode indicate that the eventuality in question occurs / has occurred multiple times; consequently, such forms are typically used to convey that there exists a habit, propensity, disposition, *etc.* for events of the kind described to occur (Leer 1991). In this sense, habitual-mode verbs seem to possess much the same interpretation as imperfective-mode verbs under their ‘Habitual’ construal (10c). Unlike imperfective verbs, however, habitual-marked verbs do not allow for either of the other two usages in (10a,b). As shown in (14), habitual-mode verbs cannot be used to describe ongoing events; the data in (15) illustrates that such verbs also cannot describe ongoing states.

(14) **Habitual Mode Cannot Receive ‘Ongoing Event’ Interpretation**

*Scenario:* Some dogs are barking outside. You want to remark on this.

a. Yeedát      gáanx’      áwé      asháa      wé      keitl.  
 now      outside.at      FOC      IMPRV.3S.bark      DEM dog  
*Dogs are barking outside now.* (C)<sup>18</sup>

b. # Yeedát      gáanx’      áwé      asháa      **nooch**      wé      keitl.  
 now      outside.at      FOC      IMPRV.3S.bark      **HAB**      DEM dog  
*Some dogs often/always/regularly bark outside.* (C)

*Speaker Comment:* “Nooch means ‘sometimes’” (SE)

(15) **Habitual Mode Cannot Receive ‘Ongoing State’ Interpretation**

a. A<sub>x</sub>      éesh      asixán      a<sub>x</sub>      tláa  
 1sgPOSS      father      3O.IMPRV.3S.love      1sgPOSS      mother  
*My father loves my mother.* (SE)

b. # A<sub>x</sub>      éesh      a<sub>x</sub>      tláa      asixán      nooch  
 1sgPOSS      father      1sgPOSS      mother      3O.IMPRV.3S.love      **HAB**  
*My father often/always/regularly loves my mother.* (C)

*Speaker Comment:* “[15b] means my dad loves my mom occasionally or intermittently.” (JM)

Turning now to their differences, Leer (1991) notes that the exact contrast between ‘habitual perfective’ and ‘habitual imperfective’ is not really detectable in isolated sentences, and instead comes out most clearly either in connected narratives or with temporal adverbs. Of course, a precise characterization of this contrast will only be possible once we have laid out a formal theory of tense and aspect in Section 4. For the moment, however, an informal ‘feel’ for the contrast can be gained by considering the intuitive contrast between the English sentences in (16).

<sup>18</sup> As will be seen through other examples in this handout, NPs marked by demonstratives in Tlingit do not appear to be inherently definite. In particular, they can introduce new entities into the discourse.

- (16) a. Whenever we arrive at his house, Dave **sings**.  
 b. Whenever we arrive at his house, Dave **is singing**.

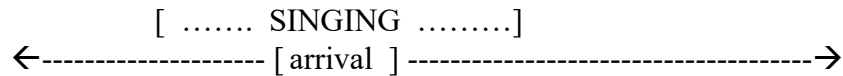
Both the sentences in (16) convey that there are ‘habitual’ occurrences of Dave singing. However, the two sentences differ in terms how those habitually recurring times of singing stand in relation to the times when we arrive at Dave’s house. Sentence (16a) places the singing-times *at* or *just after* the arrival-times, while (16b) places the singing-times *throughout* or *surrounding* the arrival-times. We can visually represent these contrasting meanings via the diagrams in (17) below.

(17) **Topographical Picture of the Meanings of Sentences (16a,b)**

- a. Sentence (16a): The (recurring) singing-times follow the arrival-times



- b. Sentence (16b): The (recurring) singing-times surround the arrival-times



Importantly, exactly this same contrast can be signaled in Tlingit via the choice of habitual perfective versus habitual imperfective (Leer 1991). As shown below, the meaning of sentence (16a) is conveyed in Tlingit via habitual perfective, while the meaning of (16b) is conveyed via habitual imperfective.

(18) **The Contrast Between Habitual Perfective and Habitual Imperfective in Tlingit**

- a. *Scenario:* Whenever we arrive at his house, he then sings for us (17a)

Tlákʷ du xánt wutu.ádi, yak'éiyi shí  
 always 3POSS vicinity.to PRV.1plS.walk.SUB IMPRV.3S.good.REL song

áwé du x'éidáx daak us.áxch.  
 FOC 3POSS mouth.from out 3O.HAB.PRV.3S.sing.prolonged  
*Whenever we come to him, he sings out a good song.* (JM)

- b. *Scenario:* Whenever we see him, he’s always in the middle of singing (17b)

Wutusateení, ch'a tlákʷ at shée nooch.  
 PRV.1plS.see.SUB just always IMPRV.3S.sing HAB  
*Whenever we see him, he’s always singing.* (SE)

We will see that the proposed formal analysis of Tlingit’s habitual morphology will successfully capture this key contrast in (18), as well as some further semantic differences between this habitual morphology and the ‘Habitual’ construal of imperfective mode.

### 3.3 Expressing Habituality With Imperfective vs. Habitual Mode

As noted above, there appears to be a significant overlap in usage between the Tlingit habitual modes and the Tlingit imperfective-mode under its ‘Habitual’ construal. It would be quite natural to suppose, then, that the Tlingit habitual modes serve simply to unambiguously express the meaning conveyed by that ‘Habitual’ construal of imperfective. That is, one might wonder whether the only difference between the habitual-mode(s) and imperfective-mode is that the former unambiguously expresses the ‘Habitual’-meaning of the latter, while the latter also possesses the ‘Ongoing-State/Event’ interpretations.

Indeed, there seems to be no difference between the imperfective-mode and the habitual-mode(s) in terms of the ontological category of habituality they can express. Carlson (2005, 2009) roughly divides the category of ‘habituality’ into (at least) the following ontological subtypes:

(19) **Carlson’s (2005, 2009) Subtypes of Habituality**

- a. *Personal Habits:* John bites his fingernails.
- b. *Capacities:* Cheryl high jumps nearly two meters.
- c. *Occupations/Duties:* Robert works for the government.
- d. *Functions:* This machine makes bottles.

Moreover, Carlson (2005, 2009) notes that no language has ever been reported to grammatically distinguish these ontological subtypes of habituality. As shown below, Tlingit is no exception here; each of the categories in (19) can be expressed using either imperfective-mode or a habitual-mode.

(20) **Personal Habits with Imperfective-Mode and Habitual-Mode(s)**

- a. Sh x’adas’eeḵ      aḵ      éesh  
**IMPRV.3S.smoke**    1sgPOSS      father  
*My father smokes* (SE)
- b. Aḵ      éesh    kúnáḵ      sh x’adas’eeḵ      nuch  
1sgPOSS      father really      **IMPRV.3S.smoke**      **HAB**  
*My father smoked a lot.* (JM)

(21) **Capacities with Imperfective-Mode and Habitual-Mode(s)**

- a. Scenario: This boat is big enough to hold 20 people.  
Tleikáa lingít      yei alsháitch      yá      yaakw  
twenty person      3O.**IMPRV.3S.hold.REP**      DEM      boat  
*This boat holds twenty people* (JM)
- b. Scenario: My father doesn’t eat salmon often, but he doesn’t refuse it when offered. It’s one of the things that he will eat.  
Aḵ      éesh    xáat      uxáaych.  
1sgPOSS      father salmon      3O.**HAB.PRV.3S.eat**  
*My father eats salmon.* (SE)

(22) **Occupations/Duties with Imperfective-Mode and Habitual-Mode(s)**

a. Ax tláa x'úx' ahóon.  
 1sgPOSS mother book 3O.IMPRV.3S.sell  
*My mother sells books.* (MD)

b. Ax tláa x'úx' anahúunch  
 1sgPOSS mother book 3O.HAB.PRV.3S.sell  
*My mother sells books.* (C)

(23) **Functions with Imperfective-Mode and Habitual-Mode(s)**

a. Wé washéen chookán alxáash.  
 DEM machine grass 3O.IMPRV.3S.cut  
*That machine [a lawnmower] cuts grass.* (SE)

b. Yá washéen kayaaní akaxáshti nooch.  
 DEM machine leaf 3O.IMPRV.3S.cut.into.pieces **HAB**  
*This machine [a lawnmower] chops up leaves (of grass).* (LA)

However, despite this broad overlap in their ability to describe ‘habitualities’, there is one significant difference in meaning between the Tlingit imperfective-mode and the habitual-modes. Importantly, this difference has also been reported for other languages that possess special ‘habitual’ morphology alongside a more general, ‘unmarked’, imperfective(-like) strategy for describing habitualities. As noted in Section 1, this difference concerns their ability to describe capacities, functions, or occupations which have never been ‘actualized’.<sup>19</sup>

To begin, let us note that it is possible for an entity to possess a function or duty/occupation, without it ever actually carrying out that function or duty/occupation. Such scenarios are sketched under (24a,b) below. Furthermore, as shown under (24), it is possible in English to describe such non-actualized capacities/functions/occupations using ‘simple present’ habituals like that in (1).

(24) **Non-Actualized ‘Habitualities’ and English ‘Simple Verbs’**

a. Scenario (Based on Green 2000):  
 We just bought a new coffee machine. **It’s never before been used.** But, this is a great model of coffee machine. Everyone agrees that this model makes great coffee.

<sup>19</sup> Interestingly, the interpretation of statives also provides another reason to distinguish the meaning of the habitual-modes from that of the imperfective under the ‘Habitual’ construal. To begin, it has been argued that we should seek to unify the ‘Habitual’ construal of imperfective aspect with its ‘Ongoing State’ reading (Chierchia 1995). In particular, recall from Section 3.1 that imperfective aspect yields a generic reading precisely when it receives either a ‘Habitual’ or an ‘Ongoing State’ construal (with so-called ‘I-level’ statives). For reasons such as this, some have aimed to reduce the ‘Ongoing State’ reading of imperfective to a particular instance of the ‘Habitual’ reading (Chierchia 1995), and thus to (implicitly) distinguish the ‘Ongoing Event’ construal from these two interpretations.

With this in mind, recall from Section 3.2 that statives in the habitual-modes cannot receive ‘Ongoing State’ interpretations (15). Consequently, if the ‘Ongoing State’ interpretation is simply a subcase of the ‘Habitual’ interpretation of imperfective, it would follow that verbs in the habitual-modes are not semantically equivalent to that latter interpretation.

(i) *Sentence:* This coffee machine **makes** great coffee.

b. Scenario (Based on Boneh & Doron 2008):

My dad has just signed a contract with the school. He's officially their employee now. **His first shift isn't until next week, though.**

(i) *Sentence:* My dad **works** for the school now.

Furthermore, as we see in (25) below, such non-actualized habitualities can in Tlingit be described using imperfective-mode.

### (25) Non-Actualized 'Habitualities' and Tlingit Imperfective-Mode

a. Scenario (24a):

Yá yées aa washéen kúnáx linúktsi coffee áwé  
DEM new PART machine very IMPRV.3S.sweet.REL coffee FOC

**al.úkx**

3O.IMPRV.3S.boil.REP

*This new machine boils very sweet coffee.*

(SE)

b. Scenario (24b):

Wé sgóon jeeyís áwé yéi jiné yeedát.  
DEM school for FOC IMPRV.3S.work now

*He [my father] works for the school now.*

(JM)

However, as shown in (26), these non-actualized habitualities cannot in Tlingit be described using the habitual perfective-mode.

### (26) Non-Actualized 'Habitualities' and Tlingit Habitual Perfective-Mode

a. Scenario (24a):

# Yá yées aa washéen kúnáx linúktsi coffee áwé  
DEM new PART machine very IMPRV.3S.sweet.REL coffee FOC

**ool.úkch**

3O.HAB.PRV.3S.boil

*Speaker Comment:* "No. That means that you've used it." (SE)

(C)

b. Scenario (24b):

# Ax éesh wé sgóonx' áwé yéi jinanéich yeedát  
1sgPOSS father DEM school.at FOC HAB.PRV.3S.work now (C)

On the other hand, if the function or duty/occupation has indeed been carried out (regularly), then use of the habitual perfective-mode is acceptable, as well as use of the imperfective mode.

(27) **Actualized ‘Habitualities’ with Habitual Perfective-Mode and Imperfective-Mode**

Scenario (Based on Green 2000):

We have an old coffee machine, which we’ve used for years. This coffee machine always makes great coffee.

- a. Yá ch’áagu aayí ch’a yeisú k’idéin linúktsi **al.úkx**  
DEM ancient PART just still well sweet.REL 3O.IMPRV.3S.boil.REP  
*This old one still boils sweet (coffee) well.* (SE)
- b. Yá ch’áagu aayí ch’a yeisú k’idéin linúktsi **ool.úkch**  
DEM ancient PART just still well sweet.REL 3O.HAB.PRV.3S.boil  
*This old one still boils sweet (coffee) well.* (SE)

In summary, then, non-actualized habitualities (capacities, functions, duties, obligations) can be described using imperfective-mode in Tlingit, but cannot be described with habitual perfective-mode. Rather, that latter mode is reserved for only those habitualities that have indeed been actualized. Importantly, this general pattern has been reported for many other, unrelated languages possessing specially marked ‘habitual’ constructions (Carlson 2005, 2012). As illustrated in (28)-(31) below, in these languages, use of the more morphosyntactically complex, specifically ‘habitual’ construction requires that the habituality in question have been actualized, while non-actualized habitualities can be described with a simpler, relatively ‘unmarked’ (and imperfective-like) verb form.

(28) **African-American English: Simple Verbs vs. ‘Habitual Be’ (Green 2000)**

Scenario: We’ve just bought a new printer. It’s never been used. But, it has the capacity to print a hundred pages a minute.

- a. This printer **print / # be printing** a hundred pages a minute.

(29) **Hebrew: Simple Verbs vs. Periphrastic Habituals (Boneh & Doron 2008)**

Scenario: Dan was employed by the university as a professor. However, in no semester during his time there, were there ever enough registered students for him to teach a class.

- a. Dan **limed** / # **haya melamed** b-a-’universita.  
Dan teach.PST **HAB.PST** taught-PTCPL in-the-university  
*Dan taught at the university.*

(30) **Czech: Imperfective vs. Habitual Morphology (Filip 2018)**

Scenario: This machine has been designed to crush oranges. However, we’ve never actually used it yet.

- a. Tento stroj **drtí** / # **drtívá** pomeranče  
this machine crush.IMPRV crush.HAB oranges  
*This machine crushes oranges.*



(31) **Kallalisut: Indicative vs. Habitual Morphology (Bittner 2008)**

Scenario: There has never been any mail from Mars. However, it's Mary's job to handle that mail, if it ever comes in.

- a. Mari Marsiminngaaniirsunik allakkirisuuvuq / # allakkirisarpuq  
Mary Mars.ABL.be.COND letter-work.IND letter-work.HAB  
*Mary handles mail if it is from Mars.*

Given the existence of this pattern across a diverse array of unrelated languages, we should obviously seek out a principled explanation for the contrasts in (25)-(27), one that could potentially be extended to the parallel facts in (28)-(31). Furthermore, one additional detail regarding this phenomenon in Tlingit may prove to be essential to our general understanding of it. Notice that the habitual verbs in (26)-(27) are in the habitual *perfective*-mode. Curiously, habitual *imperfective*-mode does not seem to require the habitualities in question to be 'actualized'. As shown below, habitual imperfective-mode can be used to describe non-actualized capacities, functions, or duties, in just the same way as (regular) imperfective-mode.

(32) **Non-Actualized 'Habitualities' and Tlingit Habitual Imperfective-Mode**

Scenario (Based on Green 2000):

We just bought a new rice cooker. **It's never before been used.** But, this machine is designed to cook rice.

- a. Wé kóox a káx' **dus.ée.**  
DEM rice 3O.inside 3O.IMPRV.IndefS.cook  
*People cook rice in it.* (IC)
- b. Wé kóox a káx' **dus.ée nuch.**  
DEM rice 3O.inside 3O.IMPRV.IndefS.cook **HAB**  
*People cook rice in it.* (C)

Taken together with (32), then, it appears that the contrast in (25)-(26) between Tlingit imperfective and habitual perfective is not due to the 'habitual' morphology *per se*, but rather the interaction between that morphology and the aspectual character of those habitual forms. That is, we should ideally seek to decompose the habitual modes of Tlingit in such a way that the 'habitual' portion of their meaning interacts with the '(im)perfective' portion to yield the observed contrasts in exactly the 'habitual perfective' forms. Finally, we should also seek to understand how the proposed account could be applied to capture the parallel facts from other languages in (28)-(31), even though those languages (unlike Tlingit) are not reported to exhibit aspectual 'sub-types' of their habitual forms.

In the following section, we will begin taking up this task, by first laying out some background assumptions regarding the semantics of aspect, tense, and quantificational adverbs.

## 4. Formal Semantics Background: Aspect, Tense, and (Quantificational) Adverbs

This section presents the background assumptions regarding aspect, tense, and quantificational adverbs that the proposed analysis of the Tlingit habitual-modes builds upon. I first lay out the assumed framework for the semantics of tense and aspect (Section 4.1); in the course of this presentation, I will put forth the proposed analyses of Tlingit perfective-mode and imperfective-mode. Then, building upon this, I will lay out some important background regarding quantificational adverbs like *always*, *sometimes*, and *whenever we arrive* (Section 4.2).

### 4.1 Formal Semantics of Perfective Aspect, Imperfective Aspect, and Tense

My proposed analysis of Tlingit will build upon certain assumptions that are rather commonplace now in the literature on tense and aspect, though they remain controversial. These ideas have been developed through such seminal works as Bennett & Partee 1978, Klein 1994, Abusch 1997, Kratzer 1998, Kusumoto 2005, and Matthewson 2006, amongst many others. To begin, I assume that semantic interpretation is relative to a time  $t$ , world  $w$ , variable assignment  $g$  and context  $c$ .

#### (33) Interpretation Relative to Time, World, and Variable Assignment

$[[ XP ]]$  <sup>$w, t, g, c$</sup>  = Denotation of XP at world  $w$ , time  $t$ , relative to variable assignment  $g$ , and context  $c$ .

The contextual parameter  $c$  will not be fully relevant until our discussion of quantificational adverbs in Section 4.2; consequently, it will largely be suppressed in this section. In a matrix clause, the evaluation time  $t$  and evaluation world  $w$  are identical to the world and time at which the sentence is uttered (*i.e.*, the ‘speech-time’  $c_t$  and ‘speech-world’  $c_w$ ). I also assume an ontology that, alongside times (type  $i$ ) and worlds (type  $s$ ), contains so-called ‘eventualities’ (type  $\varepsilon$ ), which is a separate class of objects comprising both ‘events’ and ‘states’.

To present the major ideas regarding aspect and tense, I will walk the reader through the interpretation of three illustrative sentences of Tlingit, listed below. The sentences in (34a,b) will illustrate the interpretation of eventive predicates with perfective and imperfective aspect, while sentence (34c) will illustrate the interpretation of a stative predicate with imperfective aspect.

#### (34) Illustrative Tlingit Sentences

- |   |                            |                      |                            |   |                            |     |
|---|----------------------------|----------------------|----------------------------|---|----------------------------|-----|
| a.  | A <sub>x̄</sub><br>1sgPOSS | tláach<br>mother-ERG | sakwnéin<br>bread          | aawa <sub>x̄</sub> áa<br>3O.PRIV.3S.eat | tatgé.<br>yesterday        | (C) |
| <i>My mother ate bread yesterday.</i>                     |                            |                      |                            |   |                            |     |
| b.  | A <sub>x̄</sub><br>1sgPOSS | tláach<br>mother-ERG | sakwnéin<br>bread          | a <sub>x̄</sub> á.<br>3O.IMPRV.3S.eat   |                            | (C) |
| <i>My mother is eating bread. / My mother eats bread.</i> |                            |                      |                            |   |                            |     |
| c.  | A <sub>x̄</sub><br>1sgPOSS | tláach<br>mother-ERG | a <sub>x̄</sub><br>1sgPOSS | éesh<br>father                          | asixán<br>3O.IMPRV.3S.love | (C) |
| <i>My mother loves my father.</i>                         |                            |                      |                            |   |                            |     |

I assume that Tlingit sentences like these possess a syntactic structure whereby the verb and its direct arguments form a constituent together (VP), to the exclusion of any aspectual morphosyntax. These VPs will be assumed to denote predicates of ‘eventualities’. Thus, the sentences in (34a,b) contain the VP in (35a) below, while sentence (34c) contains the VP in (35b).

**(35) VPs are Predicates of Eventualities (Events and States)**

a. Interpretation of VP in Sentences (34a,b):

$[[ [_{VP} a\check{x} \text{ tláa} [_{VP} \text{ sakwnéin} [_{V} \check{x}á ] ] ] ] ]^{w,t,g} =$   
*my mother bread eat*

$[ \lambda e : \text{eat}(e,w) \ \& \ \text{Agent}(e,w) = \text{my mother} \ \& \ \exists y . \text{bread}(y,w) \ \& \ \text{Theme}(e,w) = y ]$

b. Interpretation of VP in Sentence (34b):

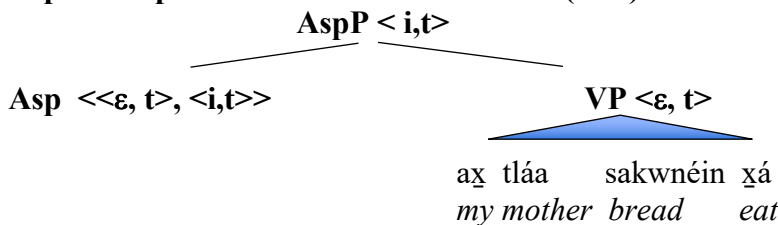
$[[ [_{VP} a\check{x} \text{ tláa} [_{VP} a\check{x} \text{ éesh} [_{V} s-\check{x}án ] ] ] ] ]^{w,t,g} =$   
*my mother my father love*

$[ \lambda e : \text{love}(e,w) \ \& \ \text{Exp}(e,w) = \text{my mother} \ \& \ \text{Theme}(e,w) = \text{my father} ]$

Furthermore, as shown above, the VP in sentence (35a) is assumed to denote a predicate that holds of an eventuality *iff* it is an eventuality of eating, whose Agent is the speaker’s mother, and whose theme is some quantity bread. Similarly, the VP in (35b) denotes a predicate that holds of an eventuality *iff* it is an eventuality of loving, whose Experiencer is the speaker’s mother, and whose theme is the speaker’s father.

Next, as illustrated in (36), the aspectual morphosyntax associated with the pronounced verb form combines with this VP constituent, forming a so-called ‘Aspectual Phrase’ (AspP).

**(36) Aspect Maps Predicates of Eventualities (VPs) to Predicates of Times (AspPs)**



I assume that there are two possibilities in Tlingit regarding the ‘Asp(ect)’ head of this AspP: [PRV] (perfective) and [IMPRV] (imperfective). Furthermore, I assume that semantically both these heads serve to map the predicate of eventualities denoted by the VP to a predicate of times.

To spell this out further, let us first consider the perfective-mode, which I will assume is the morpho-phonological realization in Tlingit of the [PRV] Asp-head. According to our informal description in Section 3.1, [PRV] requires that the time of the eventuality in question lies either (i) within some topical interval, or (ii) just after the time of some topical event.<sup>20</sup> To capture the first sort of usage, I assume that PRV can receive the denotation in (37a) below.

<sup>20</sup> As I will review below, the typical ‘past orientation’ of a perfective verb in a matrix clause (Section 3.1) is generally viewed as a kind of pragmatic effect (Bennett & Partee 1978, De Wit 2016), and not a part of the inherent semantics of ‘[PRV]’.

(37) **Formal Semantic Analysis of Perfective Aspect [PRV]**

- a. PRV Places Eventuality-Time Within Topical Time Interval:  
 $[[ \text{PRV}_1 ]]^{\text{w,t,g}} = [ \lambda P_{\langle e,t \rangle} : [ \lambda t' : \exists e . P(e) \ \& \ T(e) \subseteq t' ] ]$
- b. PRV Places Eventuality-Time Just After Topical Time Interval:  
 $[[ \text{PRV}_2 ]]^{\text{w,t,g}} = [ \lambda P_{\langle e,t \rangle} : [ \lambda t' : \exists e . P(e) \ \& \ t' \supset\subset T(e) ] ]$

Under the semantics in (37a), [PRV] denotes a function mapping a predicate of eventualities P – contributed by the VP – to a predicate of times, one that holds of a time *iff* it contains the time of an eventuality (T(e)) that the predicate P holds of. Similarly, to capture the second construal of [PRV], I assume that it may also receive the denotation in (37b). According to that entry, [PRV] denotes a function that maps a predicate of eventualities P to a predicate of times, which holds of a time *iff* it is immediately followed (‘ $\supset\subset$ ’) by the time of a P-eventuality.

The reader will note that, technically speaking, the entries in (37) treat [PRV] as lexically ambiguous; in other words, there are two distinct ‘[PRV]’ heads – PRV<sub>1</sub> and PRV<sub>2</sub> – each associated with one of the two documented usages of perfective aspect. This, of course, is far from ideal, and we should seek instead to derive both these usages from one and the same general meaning for [PRV]. However, the most successful attempts at doing so depend upon rather complex theories of discourse structure and the nature of ‘narrative progression’ (Altshuler 2016). Consequently, for our relatively limited purposes here, I will simply assume the lexical ambiguity in (37), and put aside the difficult question of what controls the exact reading that ‘[PRV]’ receives.

Putting these ingredients together, we thereby assume that sentence (34a) contains the AspP in (38a) below, which can be interpreted as denoting the predicate of times in (38b). That predicate of times holds of a temporal interval *iff* it contains the time of an event of the speaker’s mother eating bread.

(38) **AspPs are Predicates of Times**

- a.  $[[ [_{\text{AspP}} \text{PRV}_1 [_{\text{VP}} \text{a}\chi \text{tláa} [_{\text{VP}} \text{sakwnéin} [_{\text{V}} \text{xá} ] ] ] ] ] ]^{\text{w,t,g}} =$   
*my mother bread eat*
- b.  $[ \lambda t' : \exists e . T(e) \subseteq t' \ \& \ \text{eat}(e,w) \ \& \ \text{Agent}(e,w) = \text{my mother} \ \& \ \exists y . \text{bread}(y,w) \ \& \ \text{Theme}(e,w) = y ]$

As predicates of times, AspPs can be modified by other predicates of times, via an interpretation rule like Heim & Kratzer’s (1998) ‘Predicate Modification’. Such modification is frequently achieved via (non-quantificational) ‘frame’ adverbs. For example, we may assume that adverbs like English *yesterday* and Tlingit *tatgé* receive the interpretation in (39), where they are predicates of times falling within the day prior to the time of speech.

(39) **Semantics of Non-Quantificational, Frame Adverbs**

- $[[ \text{yesterday} / \text{tatgé} ] ]^{\text{w,t,g,c}} = [ \lambda t' : t' \subseteq \text{YESTERDAY}(c_t) ]$

We may therefore assume that sentences like (34a) contain the modified AspP in (40a) below, which will end up denoting the predicate of times in (40b). This predicate is nearly the same as that in (38b), but adds the condition that the time  $t'$  falls within the day prior to the time of speech.

(40) **Modification by Non-Quantificational, Frame Adverbs**

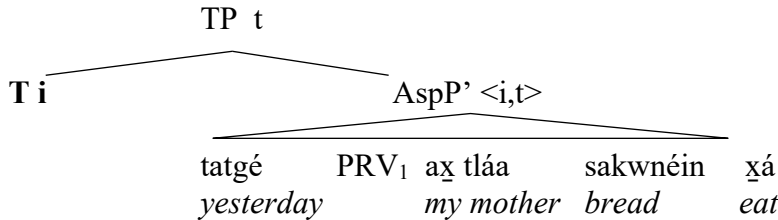
$$a. \quad \left[ \left[ \text{AspP}' \text{tatgé} \left[ \text{AspP} \text{PRV}_1 \left[ \text{VP} \text{ax} \text{tláa} \left[ \text{VP} \text{sakwnéin} \left[ \text{V} \text{xá} \dots \right] \right] \right] \right] \right] \right]^{w,t,g,c} =$$

*yesterday*                      *my mother*    *bread*                      *eat*

$$b. \quad [\lambda t' : t' \subseteq \text{YESTERDAY}(c_t) \ \& \ \exists e . T(e) \subseteq t' \ \& \ \text{eat}(e,w) \ \& \ \text{Agent}(e,w) = \text{my mother} \ \& \ \exists y . \text{bread}(y,w) \ \& \ \text{Theme}(e,w) = y]$$

The temporal predicate denoted by an AspP is in most cases understood to apply to some topical interval of time in the discourse. I follow Matthewson (2006) and others in assuming that this topical time is provided by a so-called ‘T(ense)’-head, which projects a ‘Tense Phrase’ or ‘TP’. Thus, the following syntactic tree represents the (more-or-less) complete structure of the Tlingit sentence in (34a).

(41) **Tense Provides a Topical Time (Topic Time) As Argument to AspP**



Although this remains highly controversial, I adopt the view that the T-head directly denotes the topical temporal interval itself, and so is type- $i$  (Partee 1984, Abusch 1997, Kratzer 1998, Matthewson 2006). As such, the T-head is a temporal pronoun, whose denotation depends upon the variable assignment  $g$ .

(42) **Pronominal Semantics for T(ense)-Heads:**                       $[[T_j]]^{w,t,g} = g(j)$

With all these ingredients in place, the Tlingit sentence in (34a) is predicted to receive the truth-conditions in (43) below. Thus, (34a) will be true *iff* the topical time interval  $g(j)$  is contained within the day preceding the day of speech, and itself contains an event of my mother eating bread.

(43) **Predicated Semantics for Perfective-Mode Tlingit Sentence (34a)**

$$\left[ \left[ \text{TP} T_j \left[ \text{AspP}' \text{tatgé} . \left[ \text{AspP} \text{PRV} \left[ \text{VP} \text{ax} \text{tláa} \left[ \text{VP} \text{sakwnéin} \left[ \text{V} \text{xá} \dots \right] \right] \right] \right] \right] \right] \right]^{w,t,g} = T \text{ iff}$$

$$g(j) \subseteq \text{YESTERDAY}(c_t) \ \& \ \exists e . T(e) \subseteq g(j) \ \& \ \text{eat}(e,w) \ \& \ \text{Ag}(e,w) = \text{my mother} \ \& \ \exists y . \text{bread}(y,w) \ \& \ \text{Thm}(e,w) = y$$

As the structure above indicates, despite the label ‘Tense’, the T-head need not bear traditional ‘tense features’, such as *past*, *present*, or *future*. Indeed, like in many languages, tense-

marking is not obligatory in Tlingit; in such cases, it is assumed that the T-head simply lacks those traditional tense features (Matthewson 2006, Cable 2017b). However, in cases where tense marking does appear – including in languages like English, where it is obligatory – the T-head is assumed to carry some additional tense feature expressed by that marking. Furthermore, following much prior work, I assume that those tense features serve semantically to place restrictions upon the denotation of the T-head itself. As illustrated in (44) below, those restrictions can be modelled as definedness conditions on the denotation of the T-head, which consequently trigger semantic presuppositions regarding the denotation of [T].

(44) **Presuppositional Semantics for Tense Features**

- a. Past Tense:  
[[ [T T<sub>j</sub> PST ] ]]<sup>w,t,g</sup> = g(j), but only if g(j) < t (undefined otherwise)
- b. Present Tense:  
[[ [T T<sub>j</sub> PRS ] ]]<sup>w,t,g</sup> = g(j), but only if g(j) = t (undefined otherwise)
- c. Future Tense:  
[[ [T T<sub>j</sub> FUT ] ]]<sup>w,t,g</sup> = g(j), but only if t < g(j) (undefined otherwise)

Thus, a past-tense and perfective-aspect sentence, such as the Russian one in (45a), is assumed to have the syntactic structure in (45b), and therefore will receive the interpretation in (45c).

(45) **Illustration of Past Perfective in Russian**

- a. Anja **ubrala** kvartiru včera  
Anna **clean.PRV.PST** apartment yesterday  
*Anna cleaned up the apartment yesterday.* (Altshuler 2014)
- b. Assumed Syntax: [TP [T T<sub>j</sub> PST ] [AspP PRV [VP *Anna clean apartment* ] ] ]
- c. Predicted Truth-Conditions [[ (45b) ]]<sup>w,t,g</sup> is only defined if g(j) < t  
When defined, is True *iff*  
 $\exists e . T(e) \subseteq g(j) \ \& \ \text{clean}(e,w) \ \& \ \text{Ag}(e,w) = \text{Anna} \ \& \ \text{Thm}(e,w) = \text{the.apartment}$

Under this analysis, then, (45a) will be true (and defined) *iff* the denotation of the T-head g(j) is a time lying prior to the time of speech *t*, and contains an event of Anna cleaning the apartment.

Thus far, we have been restricting our attention to sentences containing perfective aspect [PRV]. Before we turn our attention to imperfective aspect [IMPRV], one further feature of [PRV] must be mentioned. As noted in Section 3.1 (and footnote 20), perfective aspect in matrix clauses is generally incompatible with ‘present orientation’; that is, if a main clause bears [PRV] aspect, then the T-head is not able to denote the speech-time *t*. In a language with obligatory tense features, such as English or Russian, it follows that [PRV] in Asp cannot co-occur with [PRS] in T. Although the ultimate nature of this effect remains elusive, it is generally held to be a pragmatic – rather than semantic – phenomenon (De Wit 2016). Under one quite prevalent view, the combination of [PRV] aspect with present orientation would place impossible requirements upon

the time of speech (Bennett & Partee 1978). After all, under the ‘inclusion’ semantics in (37a), [PRV] would require that the time denoted by T contain an event of the sort described by the VP. However, [PRS] tense on T would require that the time denoted by T be the speech time, in a matrix clause (44b). Thus, [PRV] with [PRS] would require that the *time of speech* contains an event of the kind described by the VP. In most contexts, this would be a practical impossibility, and so the combination of [PRS] with [PRV] is not generally allowable. As natural and attractive as this view is, it does still face certain challenges. Most notably, languages seem to vary on the exact consequences of combining [PRV]-aspect with [PRS]-tense. For some languages, like English, it’s been proposed that the combinations are grammatical, but acceptable only in ‘play-by-play’ reports, sometimes called ‘sportscaster speech’ (e.g., ‘He **shoots**. He **scores**.’). For other languages, such as Russian, the morphological combination of [PRS]-tense and [PRV]-aspect can yield a future interpretation (De Wit 2016). Importantly, although both these kinds of interpretations of ‘present-perfective’ could follow from the lexical entries in (37), neither language freely allows for both, and neither so freely allows either. Thus, I will here remain agnostic as to exactly why [PRV] in main clauses disallows ‘present perspective’, but I will follow all prior literature in assuming that the effect should not be hard-encoded into the semantics of [PRV]-aspect (and so is somehow defeasible in certain contexts).

Turning now to imperfective aspect [IMPRV], we observed in Section 3.1 that there are three principle ‘usages’ that this aspect receives across languages, dubbed (i) Ongoing State, (ii) Ongoing Event, and (iii) Habitual. A major goal in the formal semantic literature on aspect is, of course, the unification of these three ‘construals’ under a single, univocal lexical semantics for [IMPRV] (Deo 2009, Arregui *et al.* 2014). Naturally, the most difficult challenge for such a unification is to relate the ‘Habitual’ interpretation to the other two ‘Ongoing’ interpretations. Given the complexity – and special assumptions – of the analyses that achieve this unification, I will in this paper adopt the simplifying assumption that, as with [PRV] (37), there are two formal semantic entries for [IMPRV] aspect. In essence, then, there are two distinct ‘flavors’ of [IMPRV]. The first we might label ‘[IMPRV<sub>OG</sub>]’, for ‘Ongoing’. As defined in (46) below, this meaning would cover both the ‘Ongoing State’ and ‘Ongoing Event’ construal of imperfective.

(46) **The ‘Ongoing’ Imperfective Head [IMPRV<sub>OG</sub>]**

$$[[ \text{IMPRV}_{\text{OG}} ]]^{\text{w,t,g}} = [ \lambda P_{\langle e,t \rangle} : [ \lambda t' : \exists e . P(e) \ \& \ t' \subseteq T(e) ] ]^{21}$$

Given this semantics, [IMPRV<sub>OG</sub>] would denote a function that maps a predicate of eventualities (events or states) P to a predicate of times, which holds of a time t’ if and only if t’ is contained within the time of a P-eventuality.

With (46) in hand, we can analyze the sentences in (34b,c) as potentially containing the AspPs in (47a,b) below, both of which are headed by [IMPRV<sub>OG</sub>].

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<sup>21</sup> It is broadly recognized that both the ‘Ongoing Event’ and ‘Ongoing State’ readings of imperfective also involve an important modal component, one that involves quantification over so-called ‘inertia worlds/states’ (Dowty 1979, Deo 2009, Arregui *et al.* 2014). Again, for purposes of simplicity, I will abstract away from that additional complexity.

(47) **Semantics of Imperfective AspPs, Headed by [IMPRV<sub>OG</sub>]**

a. AspP of Sentence (34b):

$$[[ [_{\text{AspP}} \text{IMPRV}_{\text{OG}} [_{\text{VP}} \text{a}\bar{x} \text{tláa} [_{\text{VP}} \text{sakwnéin} [_{\text{V}} \bar{x}\acute{\text{a}} ] ] ] ] ] ] ] ]^{\text{w,t,g}} =$$

*my mother bread eat*

$$[ \lambda t' : \exists e . t' \subseteq \mathbf{T}(e) \ \& \ \text{eat}(e,w) \ \& \ \text{Agent}(e,w) = \text{my mother} \ \& \\ \exists y . \text{bread}(y,w) \ \& \ \text{Theme}(e,w) = y ]$$

b. AspP of Sentence (34c):

$$[[ [_{\text{AspP}} \text{IMPRV}_{\text{OG}} [_{\text{VP}} \text{a}\bar{x} \text{tláa} [_{\text{VP}} \text{a}\bar{x} \acute{\text{eesh}} [_{\text{V}} \text{s-xán} ] ] ] ] ] ] ] ]^{\text{w,t,g}} =$$

*my mother my father love*

$$[ \lambda t' : \exists e . t' \subseteq \mathbf{T}(e) \ \& \ \text{love}(e,w) \ \& \ \text{Agent}(e,w) = \text{my mother} \ \& \\ \text{Theme}(e,w) = \text{my father} ]$$

Both these AspPs denote predicates that hold of a temporal interval *iff* that interval is *contained within* the time of some eventuality; in (47a), that eventuality must be an event of my mother eating bread, while in (47b), it must be a state of my mother loving my father. Either way, the eventuality in question must thereby hold throughout the entirety of the temporal interval, and so our semantics captures both the ‘Ongoing State’ and ‘Ongoing Event’ readings of imperfective.

Let us now finally consider the ‘Habitual’ construal of [IMPRV]. According to our informal characterization (Section 3.1), this reading states that throughout a particular topical time, there exists some general habit/propensity/disposition for eventualities of the kind described by the VP to occur. This of course begs the question of how one should formally analyze the notion of there being a ‘habit/propensity/disposition’ for certain eventualities to occur. Although this remains controversial (Cohen 1999, Deo 2009), there is a general consensus that ‘habitual’ readings of imperfective involve some form of modal quantification over other possible worlds (Krifka *et al.* 1995, Greenberg 2007, Menendez-Benito 2013, Arregui *et al.* 2014). One way to characterize this quantification would be to take as primitive the existence of so-called ‘habits’, ‘propensities’, ‘dispositions’, ‘functions’, and ‘obligations’ within our world *w* (Bittner 2008). These ‘habitualities’ (so-called) would each be associated with a set of possible worlds, namely those worlds where that habituality is indeed ‘realized’. So, for example, if there is a ‘disposition’ for my dog to bite people in our world *w*, this disposition would (by its primitive nature) project the set of worlds *w'* where my dog actually does bite someone.

To build towards a formal semantics incorporating these metaphysical notions, let us introduce the modal relation ‘HABIT’ in (48) below.

(48)  $\text{HABIT}(w,t) = \{ w' : \text{the habitualities existing in } w \text{ at } t \text{ are realized in } w' \}$

As defined above, ‘HABIT’ relates a world *w* and time *t* to the set of all possible worlds *w'* where the ‘habitualities’ in *w* at time *t* are realized. Thus, if our world *w* at time *t* contains a disposition for my dog to bite people, then  $\text{HABIT}(w,t)$  would only contain worlds where my dog does indeed bite someone.



We can now use this modal ‘HABIT’-relation to provide a rough semantics for the ‘Habitual’ construal of [IMPRV]. Let us suppose that alongside [IMPRV<sub>OG</sub>], there exists a second ‘flavor’ of imperfective – labeled ‘[IMPRV<sub>HAB</sub>]’ – which receives the denotation in (49) below.

(49) **The ‘Habitual’ Imperfective Head [IMPRV<sub>HAB</sub>]**

$$\begin{aligned} & [[ \text{IMPRV}_{\text{HAB}} ] ]^{w,t,g} = \\ & [ \lambda P_{\langle s, \langle \varepsilon, t \rangle \rangle} : [ \lambda t' : \forall w' \in \text{HABIT}(w, t') . \exists e . P^*(w')(e) \ \& \ t' \subseteq T(e) ] ] \end{aligned}$$

According to (49), the [IMPRV<sub>HAB</sub>] denotes a function that maps a property of eventualities P to a predicate of times, one that holds of time t’ if every world w’ in HABIT(w, t’) is one where t’ is contained within a *plurality* of P-eventualities. Recalling the definition in (48), this means that [IMPRV<sub>HAB</sub>] requires the topical time t’ to be contained within a plurality of P-eventualities, but only in those possible worlds w’ where the habitualities of w (at t’) are actualized.

To further illustrate this semantic analysis, let us consider sentence (34b) under its ‘Habitual’ interpretation (*i.e.*, ‘my mother eats bread’). According to the present proposals, to receive this reading, sentence (34b) would have the structure in (50a) below, and therefore the truth-conditions in (50b).<sup>22</sup>

(50) **Formal Semantic Analysis of ‘Habitual’ Construal of Imperfective-Mode**

- a.  $[[ [_{\text{TP}} T_j [_{\text{AspP}} \text{IMPRV}_{\text{HAB}} [_{\text{VP}} \text{a}\bar{x} \text{tláa} [_{\text{VP}} \text{sakwnéin} [_{\text{V}} \bar{x}\acute{a}] \dots ] ] ] ] ] ]^{w,t,g} = T \text{ iff}$
- b.  $\forall w' \in \text{HABIT}(w, g(j)) . \exists e . g(j) \subseteq T(e) . * \text{eat}(e, w') \ \& \\ * \text{Agent}(e, w') = \text{my mother} \ \& \ \exists y . \text{bread}(y, w') \ \& \ * \text{Theme}(e, w') = y$

According to (50b), structure (50a) will be true *iff* in the world of speech w, at the topical time g(j), the ‘habitualities’ that hold in w at g(j) are only realized in worlds where there are events of my mother eating bread (surrounding time g(j)). Thus, the ‘habits’, ‘propensities’, ‘dispositions’ *etc.* that exist in w at time g(j) are only actualized if my mother eats bread; in this sense, there is at g(j) a habit/propensity/disposition/*etc.* *for my mother to eat bread.*

Although there remains a great deal to further refine in this treatment of the ‘Habitual’ reading of [IMPRV], it is in keeping with the spirit of many key approaches to this phenomenon (Greenberg 2007, Menendez-Benito 2013, Arregui *et al.* 2014), and so it will suffice for our general purposes in this paper.<sup>23</sup> What is of greatest importance in this analysis is the postulated modal quantification over possible worlds. It is thanks to this feature that we are able to predict the key fact in (25), that habitualities described via imperfective-mode in Tlingit need not be actualized in the real world. Note that the truth-conditions in (50b) only require that there be events of my mother eating bread in those worlds w’ where the habitualities in w are actualized. But, the

<sup>22</sup> The observant reader may observe that to semantically combine [IMPRV<sub>HAB</sub>] (type  $\langle \langle s, \langle \varepsilon, t \rangle \rangle, \langle i, t \rangle \rangle$ ) with the VP (type  $\langle \varepsilon, t \rangle$ ), we would need to employ a rule like von Stechow & Heim’s (2011) ‘Intensional Function Application’.

<sup>23</sup> One significant drawback, however, to our distinguishing the heads ‘IMPRV<sub>HAB</sub>’ and ‘IMPRV<sub>OG</sub>’ is that the ‘Habitual’ construal of imperfective is divorced from the ‘Ongoing State’ construal. Recall from footnote 19, however, that the behavior of generics suggests that the ‘Habitual’ and ‘Ongoing State’ construals should somehow be unified. With this in mind, the more accurate split between the construals of imperfective would be between ‘Ongoing Event’ and the other two, rather than between ‘Habitual’ and the two ‘Ongoing’-construals (footnote 19).

real world  $w$  need not itself be such a world. Thus, our analysis correctly predicts that (50a) does not entail that there do in fact exist in our world  $w$  events of my mother eating bread. In this way, we are able to predict the felicity of sentences like (25a,b) in their associated contexts. Of course, our semantics also predicts that  $[\text{IMPRV}_{\text{HAB}}]$  should be perfectly possible when  $w$  is in fact a member of  $\text{HABIT}(w, g(j))$ , and so the habituality in question is actualized in the real world. Thus, we also correctly predict the felicity of sentences like (27a) in their associated contexts.

These considerations, though, naturally raise the question – of central interest to us here – of how and why the habitualities described by the *habitual perfective*-mode are required to be actualized in the real world ((5), (26)). The remainder of this paper will be devoted to that question, and the semantics of Tlingit ‘habitual’ morphology more generally.

Before we turn to that, however, I would like to briefly discuss one final feature of  $[\text{IMRPV}]$  aspect: its use in generic constructions. Recall that when  $[\text{IMPRV}]$  receives the ‘Habitual’ construal, sentences containing an indefinite subject receive a generic interpretation, whereby the habitual predication is understood to apply to the entire *kind* of entities associated with the subject NP. This is illustrated via the (b)-reading in (11), repeated below.

### (51) The Use of Tlingit Imperfective-Mode in Generics

- |       |                                    |      |
|-------|------------------------------------|------|
| Keitl | asháa.                             | (LA) |
| dog   | 3O.IMPRV.3S.bark                   |      |
| a.    | <i>Some dogs are/were barking.</i> |      |
| b.    | <i>Dogs bark.</i>                  |      |

In other words, when an indefinite subject NP cooccurs with  $[\text{IMPRV}_{\text{HAB}}]$ , it can receive a so-called ‘quasi-universal’ interpretation, one that seems to quantify over all (normal) entities falling under the denotation of the subject NP (*e.g.* dogs, in (51b)).

It is fair to say that the semantics of such generic constructions remains one of the most difficult outstanding challenges in the field of formal semantics. Exactly what the truth-conditions of readings like (51b) are – and how they are compositionally derived – is a deeply vexed matter, one that would (again) be beyond the scope of this paper to properly wade into. Nevertheless, it will be useful for certain later arguments to have on the table at least an outline of one prominent approach to such sentences. I will therefore follow much prior work in assuming that in generic sentences, the operator associated with the ‘habitual’ semantics – for us,  $[\text{IMPRV}_{\text{HAB}}]$  – is able to ‘unselectively bind’ the indefinite subject in the sentence (Carlson 1989, Wilkinson 1991, Krifka *et al.* 1995, Greenberg 2007). In somewhat vague terms, the AspP of (51) under the generic reading (51b) would be as in (52a) below.

### (52) General Assumptions Regarding Generic Sentences

- a.  $[[ [\text{AspP } \text{IMPRV}_{\text{HAB}} ] [\text{VP } \text{keitl}_j [\text{VP } \text{a-sha } ] ] ] ]^{w, t, g} =$
- b.  $[\lambda t' : \forall \langle w', x \rangle . w' \in \text{HABIT}(w, t') \ \& \ \text{dog}(x, w', t') .$   
 $\exists e. t' \subseteq T(e) . *bark(e, w') \ \& \ *Agent(e, w) = x ]$

Moreover, I assume that – via mechanisms left unexplained here – the ‘unselective binding’ structure in (52a) receives the interpretation in (52b). Crucially, under this semantics, the modal

quantification associated with  $[IMPRV_{HAB}]$  quantifies over *dogs* as well as other possible worlds. The resulting predicate is thereby true of a time  $t'$  if in all the worlds  $w'$  where the habitualities in  $w$  are satisfied – *and for all the dogs  $x$  that exist in  $w'$  at  $t'$*  – there is a plurality of barking-events by  $x$  in  $w'$  around time  $t'$ . Thus, (52b) would require that at the topical time  $t'$  (in  $w$ ), there is a ‘habit’ for *dogs* (as a class) to bark.

Again, there are a great many refinements needed in order to fully flesh out this semantics for generic constructions. What is of central importance here, however, is simply that such interpretations rely upon the presence of the ‘ $[IMPRV_{HAB}]$ ’-head, as well as its binding ‘unselectively’ into the indefinite subject, as in (52a).

## 4.2 The Syntax and Semantics of Quantificational Adverbs

Thus far, we have constructed a semantics for Tlingit perfective-mode and imperfective-mode that captures their core properties outlined in Section 3. One crucial assumption of this semantics is that the ‘Habitual’ construal of imperfective-mode involves modal quantification across other possible worlds/situations (Greenberg 2007, Menendez-Benito 2013, Arregui *et al.* 2014). It is this feature that allows imperfective-mode sentences to describe scenarios where a ‘habituality’ – a duty, obligation, function, disposition – has not been ‘actualized’ within the real world (25a,b).

What remains to be explained, however, is why (i) habitual perfective-mode verbs are unable to describe such scenarios (26), but (ii) habitual imperfective-mode verbs are (32). As previewed in Section 1, I will propose that there is a connection between the habitual morphology of Tlingit and temporal quantificational adverbs, such as *sometimes*, *always*, or *whenever*. For this reason, I will now present some key background ideas regarding the semantics of these expressions. Since I will illustrate these notions using English, it is important to introduce here one key fact regarding the aspectual nature of English verbs: simple past-tense verbs in English can be interpreted as ‘past perfectives’. That is, an English sentence like (53a) can receive the morphosyntactic parse in (53b), and thus the interpretation in (53c) below.

### (53) English Simple Past-Tense Verbs Can be Past Perfective

- a. Sentence: My mother ate bread yesterday.
- b. Structure:  $[_{TP} [_{T} T_j PST ] [_{yesterday} [_{AspP} PRV_1 [_{VP} my\ mother\ eat\ bread ] \dots ]]$
- c. Truth-Conditions:  $[[ (53b) ] ]^{w,t,g}$  is only defined if  $g(j) < t$   
 When defined, is  $[[ (53b) ] ]^{w,t,g} = T$  iff  
 $g(j) \subseteq YESTERDAY(c_t) \ \& \ \exists e . T(e) \subseteq g(j) \ \& \ eat(e,w) \ \& \ Agent(e,w) = my\ mother \ \& \ \exists y . bread(y,w) \ \& \ Theme(e,w) = y$

We see above that these assumptions make accurate predictions regarding English sentences where a simple past-tense verb is modified by a non-quantificational, ‘frame’ adverb like *yesterday*. But, what of sentences like (54a) below, where the sentence contains a (temporal) quantificational adverb (*every Tuesday*)?

### (54) English Sentences Containing Quantificational Adverbs

- a. Sentence: My mother ate bread **every Tuesday**.

b. Desired Truth-Conditions:

$\forall t' . \text{Tuesday}(t') \ \& \ t' < t \ \& \ t' \in C_c \rightarrow$

$\exists e . T(e) \subseteq t' \ \& \ \text{eat}(e,w) \ \&$

$\text{Agent}(e,w) = \text{my mother} \ \& \ \exists y . \text{bread}(y,w) \ \& \ \text{Theme}(e,w) = y$

As indicated above, sentence (54a) seems to have the truth-conditions in (54b). These truth-conditions state that for every time interval  $t'$ , if  $t'$  constitutes a ‘Tuesday’ and precedes the speech time  $t$  (that is,  $t'$  is a Tuesday ‘in the past’) and  $t'$  is also a member of the contextually-determined restriction  $C_c$ , then  $t'$  contains an event of my mother eating bread. The requirement that  $t'$  be a member of  $C_c$ , a contextually-determined class of times, is needed to prevent sentence (54a) from entailing that the speaker’s mother ate bread on *every single* Tuesday in the past, including the Tuesdays before she was born, or before she could eat solid foods, *etc.*

To build towards an account that captures these truth-conditions, we can begin by adopting a semantics for (temporal) quantificational adverbs, illustrated below, where they denote functions of type  $\langle it, t \rangle$ .

(55)  $[[ \text{every Tuesday} ]]^{\text{w,t,g,c}} = [ \lambda P_{\langle i, t \rangle} : \forall t' . \text{Tuesday}(t') \ \& \ t' \in C_c \rightarrow P(t') = 1 ]$

Thus, the denotation of *every Tuesday* takes as argument a predicate of times  $P$ , and yields ‘true’ iff  $P$  holds of every time  $t'$  that constitutes a ‘Tuesday’, and which lies within the contextually determined restriction  $C_c$ .

Recall, though, the quantification over Tuesdays in (54a) is understood as further restricted to Tuesdays *in the past* ( $t' < t$ ). Intuitively, this additional restriction should somehow be contributed by the past-tense on the main verb *eat*. As first noted by Heim (1994), this interaction between tense and adverbial quantification can be analyzed as an instance of ‘local presupposition accommodation’. Put briefly and informally, when a quantificational expression binds a presupposition trigger, the presupposition associated with the bound element can be ‘locally accommodated’, and thereby function as an additional restriction on the quantificational expression binding the trigger. To illustrate, the possessive DP in (56a) triggers the presupposition that the referent of the pronoun has a sister. However, as shown in (56b), when that possessive is bound by the quantificational DP ‘*everyone*’, its associated presupposition can end up serving as an additional restriction on the quantifier. In this way, ‘*everyone*’ is construed in (56b) as quantifying only over those individuals that have sisters, and thus could be defined values for the bound pronoun. This phenomenon is generally viewed as falling within the broader category of ‘local presupposition accommodation’ (Sudo 2012).

(56) **Local Accommodation of Bound Presupposition Triggers**

a. Presuppositions of Possessive DPs in English:

$[[ \text{their}_j \text{ sister} ]]^{\text{w,t,g}}$  is only defined if **g(j) has a sister**

when defined, equals the unique  $y$  such that  $y$  is sister to  $g(j)$

b. Local Accommodation to Restrictor of Quantifier

(i) *Sentence:* [ Everybody<sub>j</sub> [ loves [ their<sub>j</sub> sister ] ] ]

(ii) *Intuitive Truth-Conditions:*

$\forall x . x \text{ is a person} \ \& \ x \text{ has a sister} \rightarrow x \text{ loves } x\text{'s sister.}$

Given our pronominal semantics for T-heads (42) and our presuppositional semantics for tense-features (44), we can capture the additional past-restriction in (54a,b) as a similar instance of local accommodation. Following Heim (1994), we assume that temporal quantificational adverbs bind the T-head. Thus, sentence (54a) has the structure in (57a) below.<sup>24</sup>

### (57) Analysis of Temporal Quantificational Adverbs in English

a. Structure of (54a):

[<sub>TP</sub> [ every Tuesday ]<sub>j</sub> [ [<sub>T</sub> T<sub>j</sub> PST ] [<sub>AspP</sub> PRV<sub>1</sub> [<sub>VP</sub> my mother eat bread ]...]

b. Predicted Truth-Conditions (Via Local Accommodation (56)):

$\forall t' . \text{Tuesday}(t') \ \& \ t' \in C \ \& \ t' < t \rightarrow$

$\exists e . T(e) \subseteq t' \ \& \ \text{eat}(e,w) \ \&$

$\text{Agent}(e,w) = \text{my mother} \ \& \ \exists y . \text{bread}(y,w) \ \& \ \text{Theme}(e,w) = y$

Under our semantics for '[PST]' in (44a), the T-head in (57a) triggers the presupposition that its denotation precedes the speech time  $t$ . Thus, by the process outlined in (56), this presupposition can be locally accommodated as an additional restriction on the binder *every Tuesday*, and its quantification is thereby understood as restricted only to Tuesdays lying in the past (Heim 1994).<sup>25</sup>

With this general approach on the table, we can provide the following analyses for some other, basic temporal quantificational adverbs in English.

### (58) Semantics for Other Temporal Quantificational Adverbs

a.  $[[ \text{always} ]]^{w,t,g,c} = [ \lambda P_{\langle i,t \rangle} : \forall t' . t' \in C_c \rightarrow P(t') = 1 ]$

b.  $[[ \text{sometimes} ]]^{w,t,g,c} = [ \lambda P_{\langle i,t \rangle} : \exists t^* . t^* \in C_c \ \& \ \forall t' . t' \in t^* \rightarrow P(t') = 1 ]$

According to (58a), the denotation of *always* takes as argument a predicate of times  $P$ , and holds of  $P$  iff every time  $t'$  within the contextually-given restriction  $C_c$  is such that  $P$  holds of  $t'$ . Similarly, the lexical entry in (58b) states that the denotation of *sometimes* takes as argument  $P$ , and holds iff there is a *plurality* (or set) of times  $t^*$  within  $C_c$ , every member of which  $t'$  is such that  $P$  holds of  $t'$ . As the reader can confirm, these analyses predict that the sentences in (59a,b) below will receive the truth-conditions indicated there.

<sup>24</sup> To save space and aid legibility, I will suppress certain details regarding the syntax and semantics of pronominal binding, and simply co-index binders with the expressions they are understood to bind.

<sup>25</sup> The reader may note that this analysis of the past-orientation of (54a) would appear to make incorrect predictions regarding its present-tense variant below:

(i) My mother **eats** bread every Tuesday.

Observe that the quantifier *every Tuesday* in sentence (i) above appears to be rather unrestricted, and quantifies over Tuesdays lying in the past, present, and future of the speech time. However, when combined with the general approach in (56)-(57), our presuppositional semantics for '[PRS]' in (44b) would wrongly predict that '*every Tuesday*' in (i) quantifies only over Tuesdays that *overlap* the time of speech.

This issue is discussed in depth in the appendix, where a solution is provided. In brief, I propose that the surface 'present-tense' morphology in (i) is actually an instance of the 'vacuous present' that can appear in English precisely when the T-head is bound but not c-commanded by another instance of T (Sauerland 2002; Kusliy 2018, 2020).

(59) **Illustration of Proposed Semantics for Simple Temporal Quantificational Adverbs**

- a. (i) *Sentence:* My mother **always** ate bread.
- (ii) *Predicted Truth-Conditions:*  
 $\forall t' . t' < t \ \& \ t' \in C_c \rightarrow \exists e . T(e) \subseteq t' \ \& \ \text{eat}(e,w) \ \& \ \text{Agent}(e,w) = \text{my mother} \ \& \ \exists y . \text{bread}(y,w) \ \& \ \text{Theme}(e,w) = y$   
*(i.e., ‘Every past time  $t'$  (within  $C_c$ ) contains the time of an event of my mother eating bread.’)*
- b. (i) *Sentence:* My mother **sometimes** ate bread.
- (ii) *Predicted Truth-Conditions:*  
 $\exists t^* . t^* < t \ \& \ t^* \in C_c \ \& \ \forall t' . t' \in t^* \rightarrow \exists e . T(e) \subseteq t' \ \& \ \text{eat}(e,w) \ \& \ \text{Agent}(e,w) = \text{my mother} \ \& \ \exists y . \text{bread}(y,w) \ \& \ \text{Theme}(e,w) = y$   
*(i.e., ‘There exists a plurality (set) of past times  $t^*$ , and every time  $t'$  in  $t^*$  contains the time of an event of my mother eating bread.’)*

Finally, let us consider some more complex quantificational adverbs, such the ones boldfaced in the sentences below.

(60) **Clausally Restricted Quantificational Adverbs**

- a. My mother **always** ate bread **when my father made dinner.**
- b. My mother ate bread **whenever my father made dinner.**

The internal compositional semantics of these clausally-restricted adverbs is, of course, a complex issue, one that lies beyond the scope of this paper. Thus, to avoid these complications, I will simply assume the following stipulated semantic entries, leaving aside how exactly they map to the surface morphosyntactic form of these structures.

(61) **Semantics of Clausally Restricted Quantificational Adverbs**

$$\begin{aligned} & [[ \text{always when my father made dinner} ]]^w,t,g,c & = \\ & [[ \text{whenever my father made dinner} ]]^w,t,g,c & = \\ & [ \lambda P_{\langle i,t \rangle} : \forall t' . t' \in C_c \ \& \ \exists e . T(e) = t' \ \& \ \text{make.dinner}(e) \ \& \ \text{Ag}(e) = \text{my father} \rightarrow P(t') = 1 ] \end{aligned}$$

As shown above, the adverbials ‘*always when my father made dinner*’ and ‘*whenever my father made dinner*’ are assumed to be semantically equivalent. Both denote a type- $\langle i,t \rangle$  function that takes as argument a predicate of times  $P$ , and holds of  $P$  iff  $P$  holds in turn of every time  $t'$  (in  $C_c$ ) that is the time of an event of my father making dinner. The reader is invited to confirm that under this general approach, sentences (60a,b) can receive the syntactic analysis in (62a) and thus the truth-conditions in (62b).

(62) **Analysis of Clausally Restricted Quantificational Adverbs (in English)**

- a. Structure of Sentences (60a,b):  
 $[_{TP} [ \textit{always/whenever my father made dinner} ]_i$   
 $[ [_{T} T_j \textit{ PST} ] [_{AspP} \textit{ PRV}_2 [_{VP} \textit{ my mother eat bread} ] \dots ]$
- b. Predicted Truth-Conditions of (60a,b):  
 $\forall t'. t' \in C_c \ \& \ t' < t \ \& \ \exists e. T(e) = t' \ \& \ \textit{make.dinner}(e) \ \& \ \textit{Ag}(e) = \textit{my father} \ \rightarrow$   
 $\exists e' . t' \supset C T(e') \ \& \ \textit{eat}(e,w) \ \& \ \textit{Agent}(e,w) = \textit{my mother}$   
 $\ \& \ \exists y . \textit{bread}(y,w) \ \& \ \textit{Theme}(e,w) = y$

According to the semantics in (62b), sentences (60a,b) are true *iff* every past time  $t'$  (in  $C_c$ ) that is the time of an event of my father making dinner is ‘directly followed’ ( $\supset C$ ) by the time of an event of my mother eating bread. Thus, every dinner-making by my father was directly followed by a bread-eating by my mother. The reader will note that to obtain such truth-conditions for (60a,b), we must assume that the perfective aspect within the main clause is an instance of ‘[PRV<sub>2</sub>]’ (37b). As stated earlier in Section 4.1, we will put aside here the difficult matter of what determines the ‘flavor’ of perfective aspect that appears within a clause (*i.e.*, PRV<sub>1</sub> or PRV<sub>2</sub>).<sup>26</sup>

**4.2.1 Some Additional, Relevant Features of Quantificational Adverbs**

Before we return in the next section to the Tlingit habitual-modes, I would like to discuss two further features of quantificational adverbs, which will be relevant to our later discussion. Although these features have not (to my knowledge) received much discussion or analysis in their own right, they are arguably connected with certain more general phenomena surrounding quantification and temporal modification.

First, it is worth noting that sentences of English can be construed as lying within the scope of a temporal quantificational adverb, even though no such adverb is overtly pronounced in the sentence. Consider, for example, the discourses in (63a,b) below.

(63) **Implicit Temporal Quantification in English Sentences**

- a. (i) Person 1:      What did Dave do every Tuesday?  
(ii) Person 2:      **He baked a pie.**
- b. (i) Person 1:      Every Tuesday, Dave visited his mother.  
(ii) Person 2:      **He also baked a pie.**

Importantly, in both discourses, Person 2’s response is naturally understood as lying within the scope of the temporal quantificational adverb *every Tuesday*. That is, in both (63a,b), Person 2 is understood as stating that Dave baked a pie *every Tuesday*.

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<sup>26</sup> Note, however, that if the structure in (62a) contained ‘[PRV<sub>1</sub>]’ then the predicted truth-conditions would wrongly require each dinner-making by my father to *contain* the time of a bread-eating by my mother (37a). Thus, it is crucial here that we assume sentences like (60a,b) contain an instance of ‘[PRV<sub>2</sub>]’.

I will not in this paper provide a fully adequate analysis of this kind of implicit temporal quantification. One imaginable approach, however, might be to analyze this phenomenon as akin to the understood temporal restriction at play in discourses like (64a) below. Note that even though Person 2's response in (64aii) does not contain an overt adverb, it is naturally construed in this context as being restricted to 'this Tuesday'.

(64) **Phenomena Possibly Related to the Implicit Temporal Quantification in (63)**

- a. Implicit (non-Quantificational) Temporal Restriction
  - (i) Person 1: What did Dave do this Tuesday?
  - (ii) Person 2: He **baked a pie**.
  
- b. 'Telescoping' of Quantifier into Following Utterances (Keshet 2008)
  - (i) [ **Each male student** ]<sub>i</sub> walked in from the right hand of the stage.
  - (ii) **He**<sub>i</sub> took **his**<sub>i</sub> diploma from the Dean and returned to **his**<sub>i</sub> seat.

However, despite the surface similarities between (63) and (64a), given our assumed semantics for tense and quantificational adverbs, a more promising line of analysis may be to view discourses like those in (63) as involving so-called 'telescoping' phenomena, of the kind illustrated in (64b). That is, one may wish to say that in (63), the T-head of sentences (63aii)-(63bii) is somehow bound by a quantificational expression in the preceding sentences (63ai)-(63bi). Importantly, exactly such configurations can seem to occur with nominal quantification in discourses like (64b), a phenomenon commonly referred to as 'telescoping'.

Rather than develop either of these lines of approach, however, I will instead assume here as a 'stop gap' that sentences like (63aii) can contain an unspoken (or elided) quantificational adverb. That is, I will simply, provisionally assume that the syntax of (63aii) is akin to (65) below.

(65) [TP [~~every Tuesday~~]<sub>j</sub>] [ [T T<sub>j</sub> **PST** ] [AspP PRV<sub>1</sub> [VP *he baked a pie* ]...]

What is truly crucial here for our subsequent discussion, though, is that there exists *some* mechanism in English (and other languages) by which the T-head of a sentence can be interpreted as quantificationally bound, even though the sentence itself contains no overt temporal quantifier.

A second feature of quantificational adverbs that will be relevant later is their interaction with so-called 'I-level' statives. To review, as originally distinguished by Carlson (1977), an I-level (stative) predicate is one that denotes a relatively stable and/or permanent state of an entity. For example, *is Italian*, *is male*, and *loves my mother*, are all I-level stative predicates. By contrast, an 'S-level' (stative) predicate is one that denotes a rather temporary and/or 'unstable' state of an entity; such predicates include *is in the room*, *is angry*, and progressive VPs like *is dancing*.

Importantly, temporal quantificational adverbs seem rather anomalous with I-level stative predicates. As illustrated below, to the extent that such structures are interpretable, they imply that the I-level state holds 'intermittently', at the times quantified over by the adverb, but not at others.

(66) **Temporal Quantificational Adverbs and I-Level Statives**

- a. # My mother loved my father **every Tuesday**
- b. # My mother **always** loved my father **when he made dinner**.
- c. # My mother loved my father **whenever he made dinner**.



As with the facts in (63), it will be beyond the scope of this paper to settle upon a particular account of this effect. It is, however, likely connected with the more general inability for I-level statives to be temporally modified (Magri 2009). As illustrated in (67), modification of I-level predicates by non-quantificational frame adverbs is also rather anomalous, as it implies that the state in question does not hold at other times.<sup>27</sup>

(67) **Non-Quantificational Frame Adverbs and I-Level Statives**

- a. # My mother loved my father **last Tuesday**.
- b. # My mother loved my father **when we visited last week**.

Whatever the correct account of it may be, the crucial fact to observe here is simply that the modification of stative predicates by quantificational adverbs implies that the state in question holds intermittently, and thus is rather anomalous when the stative in question is ‘I-level’.

**5. Tlingit Habitual Mode as a Quantificationally Dependent Tense**

With all this background in place, we may now turn finally to the analysis of Tlingit’s habitual perfective-mode and habitual imperfective-mode. One major inspiration for the account I will put forth here is a rather striking, previously documented relationship in Tlingit texts between the appearance of these modes and the presence of a quantificational adverbial.

In his detailed descriptive study of Tlingit verbal morphology, Leer (1991: 405) notes the following: “[There is a] pronounced preference for Habitual forms in the presence of a temporal adverbial which imposes a condition on the instances of the habitual occurrence.” As his own examples make clear, the adverbials Leer refers to here are all quantificational. In other words, it is quite common in naturally produced Tlingit narratives to find verbs marked with a habitual-mode within the scope of a quantificational adverbial. The following data illustrate:

(68) **Tlingit Habitual-Modes Occurring With Quantificational Adverbs**

- a. Wáa nganeen sáwé **yéi yanduskéich** “I káani áwé...”  
 sometimes 3O.HAB.PRV.IndefS.tell 2sgPOSS brother-in-law COP  
*Sometimes they would say to him, “it was your brother in law...”*  
 (Dauenhauer & Dauenhauer 1990: 294, line 176)

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<sup>27</sup> Magri (2009) proposes that the facts in (67) are due to a grammaticalized scalar implicature associated with the adverbial modification. One potential issue for such an account, however, is the fact that this anomaly persists even with strong, universal adverbs like ‘always’.

- (i) # My father **always** loved my mother. (ii) # My father **always** loves my mother.

Since there is arguably no alternative temporal quantifier stronger than *always*, it is unclear how the anomaly of (i)-(ii) might follow from a scalar implicature (*i.e.*, that any stronger alternatives are false).

A further complication to this mystery is that although (i)-(ii) anomalously imply a kind of ‘intermittency’ to the I-level state in question, such intermittency is not implied when the stative predicate is S-level. That is, (iii) below quite felicitously describes a continuous, uninterrupted, and stable state of the cat being in the house, while (iv) is quite naturally understood as describing a constant, uninterrupted state of the phone being on silent. Thus, the inability of (i)-(ii) to describe a similarly constant, stable, uninterrupted state of my father loving my mother is quite mysterious.

- (iii) My cat was **always** in the house. (iv) My cellphone is **always** on silent.

- b. Wáa nganein sáwé yá Ch'al'geiyita.aan áa **yéi haa nateech.**  
 sometimes DEM Ch'al'geiyita.aan there **HAB.PRIV.1plS.dwell**  
*Once in a while, we lived there in Ch'al'geiyita.aan.*  
 (Dauenhauer & Dauenhauer 1987: 84, line 41)
- c. Tlákwx woosh eetéex **yaa gasxitch** áx'  
 always RECIPIENT after **HAB.PRIV.breed** there  
*They (always) multiply one generation after another over there.*  
 (Dauenhauer & Dauenhauer 1987: 262, line 38)
- d. Tlákwx aku.éikw **nooch** du yéi jinéiyi yéi adaaneiyí.  
 always IMPRV.3S.whistle **HAB** 3POSS work 3O.IMPRV.3S.do.SUB  
*He always whistles while he's doing his work.* (JM)<sup>28</sup>
- e. Yóo dikée kei xtu.áadín áwé, s du yeegáa áa **xtookéech.**  
 DEM above up CONT.1plS.go FOC PL.3O.for there **HAB.PRIV.1plS.sit**  
*Whenever we'd gotten way up high, we sat there waiting for them.* (Leer 1991: 407)

Furthermore, even though (as we've seen) use of a habitual-mode does not grammatically require an overt adverb (2b), the connection between this morphology and quantificational adverbs can sometimes be detected in the translations speakers offer. For example, when one does find in a Tlingit text a sentence containing a habitual-mode verb without any adverb, that sentence is frequently translated (by the native-speaker translator) into English via a quantificational adverb – even though no such adverb appears in the original Tlingit passage. The following illustrate.

(69) **Tlingit Habitual-Mode(s) Translated With Quantificational Adverbs**<sup>29</sup>

- a. Yá áx éesh hásh has dutlakw **nooch,**  
 DEM 1sgPOSS father.PL PL.3O.IMPRV.IndefS.narrate **HAB**  
*The story of my fathers is always told*  
 (Dauenhauer & Dauenhauer 1987: 66, line 91)
- b. Áwé tle yéi xwajée nuch wé taan áwé  
 FOC then 3O.IMPRV.1sgS.think **HAB** DEM sealion FOC  
 aax has jiwtnúk wé atxá sákw.  
 3O.for PL.PRIV.3O.want DEM food for  
*I sometimes think it was the sea lions they wanted to kill for food.*  
 (Dauenhauer & Dauenhauer 1987: 138, line 9)

Given this apparent relationship between Tlingit habitual morphology and temporal quantification, I make the following, general proposal.

<sup>28</sup> Although this sentence was uttered during an interview session, it was offered spontaneously and naturally in conversation with another elder, and was not an elicited translation.

<sup>29</sup> It should be noted that the English translations found in the works Richard and Nora Marks Dauenhauer were composed principally by Nora Marks Dauenhauer, a fluent native speaker of both Tlingit and English.

(70) **Tlingit Habitual-Mode and Quantificational Binding of Tense**

Habitual-mode morphology in Tlingit is licensed *iff* the T-head of a sentence is quantificationally bound.<sup>30</sup>

Furthermore, I will make this general proposal slightly more concrete by adopting the following formal implementation. As outlined in (71) below, I propose that the habitual-mode morphology is itself a special realization of the T-head, one that is triggered when the T-head is bound by a quantifier. Such a dependency could be achieved via the morpho-phonological ‘Vocabulary Items’ in (71a,b), within a framework like that of Distributed Morphology (Halle & Marantz 1993).

(71) **Morpho-Phonological ‘Vocabulary Items’, Implementing the Proposal in (70)**

- a. Vocabulary Item for ‘Habitual Perfective-Mode’  
T<sub>j</sub> ⇔ / -ch /      / \_\_\_[ PRV ] and T<sub>j</sub> is bound by a quantifier
- b. Vocabulary Item for ‘Habitual Imperfective-Mode’  
T<sub>j</sub> ⇔ / nooch /      / \_\_\_[ IMPRV ] and T<sub>j</sub> is bound by a quantifier

Read informally, the ‘Vocabulary Item’ in (71a) states that the T-head is ‘spelled out’ as the suffix *-ch* when it is both (i) followed by [PRV] aspect and (ii) bound by a quantifier. Similarly, (71b) states that T is spelled out as the particle *nooch* when it is (i) followed by [IMPRV] aspect and (ii) bound by a quantifier. In this sense, then, habitual morphology in Tlingit is a kind of ‘quantificationally dependent tense’; it is a realization of the T(ense)-head that is licensed by – and so serves to signal – the binding of [T] by a higher quantifier.

Although there remain some significant issues for these rules as formulated in (71), the key proposal they are meant to capture is simply that Tlingit sentences bearing habitual (im)perfective-mode have the general syntactic shape indicated in (72) below.

(72) **The Syntactic Structure of Tlingit Sentences Headed by Verbs in Habitual-Mode**

- a. Structure of a Sentence Headed by Verb in Habitual Perfective-Mode  
[<sub>TP</sub> QUANT-ADVERB<sub>j</sub> [<sub>TP</sub> T<sub>j</sub> [<sub>AspP</sub> PRV [<sub>VP</sub> ... ] ] ] ]
- b. Structure of a Sentence Headed by Verb in Habitual Imperfective-Mode  
[<sub>TP</sub> QUANT-ADVERB<sub>j</sub> [<sub>TP</sub> T<sub>j</sub> [<sub>AspP</sub> IMPRV [<sub>VP</sub> ... ] ] ] ]

In other words, in a sentence whose main verb bears habitual perfective-mode, the AspP is headed by [PRV], and the T-head is bound by some (type <it,t>) quantificational expression. Similarly, in a sentence whose main verb bears habitual imperfective-mode, the AspP is headed by [IMPRV], and the T-head is again bound by a temporal quantifier. As the reader will see, it is the syntactic

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<sup>30</sup> It is important that the generalization in (70) states that the T-head is ‘quantificationally bound’ – *i.e.*, bound by a temporal quantifier (type <it,t>) – rather than being ‘bound’ *simpliciter*. Note that it is frequently proposed in the semantic literature on tense that the T-head can also be bound by a variety of *modal* operators, such as propositional attitude verbs (*e.g.*, ‘believes’, ‘said’). Such modal environments, however, do not seem to be sufficient for the appearance of habitual-mode morphology in Tlingit, and so it seems that this morphology is crucially connected with binding of [T] by (temporal) quantificational adverbs specifically.

consequences in (72) that are of ultimate importance for my account of the Tlingit habitual modes, rather than the particular morphophonological implementation in (71).

Indeed, one major problem with the ‘Vocabulary Item’ statements in (71) is, of course, their requirement that T be “bound by a quantifier”. Formulated as it is here as a *morphosyntactic* requirement, this condition faces two difficulties. The first is that such a binding relationship need not be immediately local, and so this constraint could require the kind of ‘global evaluation’ of syntactic structure that morphological theory generally eschews. The second difficulty is that one would need to introduce and define a purely morphosyntactic notion of ‘quantificational binding’.

As a way to obviate both these problems, I would like to briefly sketch one alternative means for implementing the general perspective in (70) and (72). This alternate approach would take more seriously the claim that Tlingit habitual marking is a kind of ‘quantificationally dependent’ tense, and would seek to analyze it as a so-called ‘dependent indefinite’ (Farkas 1997, 2001, 2002; Brasoveanu & Farkas 2011). In many languages, indefinite expressions can bear a special morphology precisely when they are interpreted within the scope of some other quantificational expression. For example, as illustrated below, the marker *cîte* in Romanian can modify an indefinite interpreted within the scope of a quantifier like *fiecare baiat* ‘every boy’ (73a), but it cannot appear on indefinites that do not scope below such quantifiers (73b).

(73) **Dependent Indefinites in Romanian (Brasoveanu & Farkas 2011)**

- |    |   |            |     |         |             |         |
|----|---|------------|-----|---------|-------------|---------|
| a. | Fiecare                                       | baiat      | a   | recitat | <b>cîte</b> | un poem |
|    | Every   | boy        | has | recited | <b>DEP</b>  | a poem  |
|    | <i>Every boy received a (different) poem.</i> |            |     |         |             |         |
| b. | * <b>Cîte</b>                                 | un student | a   | plecat. |             |         |
|    | <b>DEP</b>                                    | a student  | has | left    |             |         |

Importantly, a purely semantic analysis of dependent indefinites has been developed in the work of Farkas (1997, 2001, 2002) and Brasoveanu & Farkas (2011). In the work of Brasoveanu & Farkas, for example, the scope of an existential quantifier is essentially ‘read off of’ a set of indices associated with the existential operator. Consequently, dependent indefinite markers like Romanian *cîte* can be given an interpretation that ultimately requires the indefinite they appear on to *not* have widest scope (Brasoveanu & Farkas 2011: 37).

With this in mind, I leave open here the interesting possibility that the formal tools of Brasoveanu & Farkas (2011) could be used to implement the general notion in (72) that the Tlingit habitual-modes require the T-head to lie within the scope of a temporal quantifier. It must be noted, however, that such an approach would *per force* need to view the T-head as a kind of indefinite expression, existentially quantifying over times, rather than directly referring to a time. Although this alternate view on the semantics of tense is well attested in the literature (von Stechow 2009, Ogihara & Sharvit 2012, Altshuler & Schwarzshild 2012), it does require a rather different approach to the meaning of quantificational adverbs than the one presented in Section 4.2 (von Stechow 2002). Consequently, I will leave to future work the question of whether the general approach to ‘habitual morphology’ offered here could indeed be implemented semantically, rather than with the somewhat problematic morphosyntactic conditions in (71).<sup>31</sup>

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<sup>31</sup> It is also worth noting in this context that modal quantifiers are often not sufficient to license a dependent indefinite (Brasoveanu & Farkas 2011): (cont’d)

However one opts to implement it, though, the general perspective in (70) and (72) can capture a variety of facts regarding the Tlingit habitual-modes, including the key puzzles introduced in Section 3. Before we see this in detail, however, I would like to note in passing that certain accurate morphophonological predictions also follow from the claim that Tlingit habitual marking is a realization of the T-head. In particular, this correctly predicts that habitual morphology should be able to co-occur with the independent Asp-heads [PRV] and [IMPRV], yielding the two subcategories of ‘habitual perfective’ and ‘habitual imperfective’.<sup>32</sup> In addition, it would also correctly predict that the principle exponents of habitual marking – the suffix *-ch* and the particle *nooch* – are both *post-verbal* elements. Crippen (2019) argues that all projections higher than AspP in Tlingit, including the T-head and the C(omplementizer)-head, are necessarily *post-verbal*, realized as either suffixes or *post-verbal* particles. This is certainly true for the complementizers in the language. Furthermore, Cable (2017b) argues at length that the so-called ‘decessive-mode’ of Tlingit is ultimately a realization of past-tense, ‘[T PST]’. It would not be coincidental, then, that the principle exponents of this decessive-mode are also a suffix (*-ín*) and a *post-verbal* particle (*yeeyí*).

More importantly, though, the hypothesized structures in (72) could straightforwardly account for the basic contrast noted in Section 3.2 between habitual perfective and habitual imperfective. To recall, as repeated below in (74), a habitual perfective verb indicates that the recurring events described by the verb happen *just after* some other recurring event-type (74a), while a habitual imperfective verb indicates that the recurring events occur *throughout* that other recurring event-type (74b).

(74) **The Contrast Between Habitual Perfective and Habitual Imperfective in Tlingit**

- a. *Scenario:* Whenever we arrive at his house, he then sings for us (17a)

Tlákw	du	xánt	wutu.ádi,	yak’éiyi	shí
always	3POSS	vicinity.to	PRV.1plS.walk.SUB	IMPRV.3S.good.REL	song
áwé	du	x’éidáx	daak	us.áxch.	
FOC	3POSS	mouth.from	out	3O.HAB.PR.V.3S.sing.prolonged	
<i>Whenever we come to him, he sings out a good song.</i>					(JM)

- 
- (i) Trebuie sa plece (\*cîte) un student.  
 must SUBJ leave DEP a student

*A student must leave.*

(Brasoveanu & Farkas 2011: 10)

In their semantic account, Brasoveanu & Farkas (2011) can model this sensitivity by specifying the semantic type of the indices associated with the existential quantifier in the dependent indefinite.

With this in mind, recall from footnote 30 that binding of [T] by modal quantifiers does not appear to license the presence of habitual morphology in Tlingit; only binding by temporal quantifiers suffices. Again, the parallels to dependent indefinites are striking, and an account within Brasoveanu & Farkas’s system may prove promising.

<sup>32</sup> Recall, as well, that the ‘habitual imperfective’ mode is realized simply by the regular imperfective inflection co-occurring with the *post-verbal* habitual particle *nooch* (Section 3.2). On the other hand, of course, there are more drastic differences between the realization of (regular) perfective-mode and that of habitual perfective (Section 3). Nevertheless, it should be noted that the special prefix *u-* found in habitual perfective has been argued by Crippen (2019) to be an allomorph of the regular perfective prefix *wu-* (footnote 16). Thus, to a certain degree, the habitual perfective-mode may also be morpho-phonologically compositional.

- b. *Scenario:* Whenever we see him, he's always in the middle of singing (17b)

Wutusateení, ch'a tlákw at shée nooch.  
 PRV.1plS.see.SUB just always IMPRV.3S.sing HAB  
*Whenever we see him, he's always singing.* (SE)

This contrast follows directly from our account in (70)-(72), given our semantics for [PRV] and [IMPRV] aspect (Section 4.1). Note that the habitual perfective sentence in (74a) would receive the syntax in (75a) below, and thus will receive the truth-conditions in (75b).<sup>33</sup>

(75) **Illustration: The Semantics of Habitual Perfective**

- a. Syntactic Structure of (74a):

[<sub>TP</sub> [<sub>AdvP</sub> Tlákw du xánt wutu.ádi ]<sub>j</sub> [<sub>TP</sub> T<sub>j</sub> [ **PRV**<sub>2</sub> [<sub>VP</sub> yak'éiyi ... s-áx ] ... ]  
*always when we go to his house* *he sings a good song*

- b. Predicted Truth-Conditions of (75a):

$\forall t'. t' \in C_c \ \& \ \exists e. T(e) = t' \ \& \ \text{go.to.his.house}(e,w) \ \& \ \text{Ag}(e,w) = \text{us} \ \rightarrow$   
 $\exists e'. t' \supseteq T(e') \ \& \ \text{sing}(e,w) \ \& \ \text{Agent}(e,w) = \text{him}$   
 $\ \& \ \exists y. \text{good.song}(y,w) \ \& \ \text{Theme}(e,w) = y$

According to (75b), sentence (74a) will be true *iff* every time  $t'$  (in the contextual restriction  $C_c$ ) that is the time of an event of us going to his house, is directly followed by the time of an event of him signing a good song. Thus, every (contextually salient) event of our coming to his house is *followed* by an event of him singing.<sup>34</sup> On the other hand, the habitual imperfective sentence in (74b) will be assigned the structure in (76a), and thus the truth-conditions in (76b).<sup>35</sup>

(76) **Illustration: The Semantics of Habitual Imperfective**

- a. Syntactic Structure of (74b):

[<sub>TP</sub> [<sub>AdvP</sub> Tlákw wutusateení ]<sub>j</sub> [<sub>TP</sub> T<sub>j</sub> [ **IMPRV**<sub>OG</sub> [<sub>VP</sub> at shi ]... ]  
*always when we see him* *he sing*

- b. Predicted Truth-Conditions of (76a):

$\forall t'. t' \in C_c \ \& \ \exists e. T(e) = t' \ \& \ \text{see}(e,w) \ \& \ \text{Ag}(e,w) = \text{us} \ \& \ \text{Theme}(e,w) = \text{him} \ \rightarrow$   
 $\exists e. t' \subseteq T(e) \ \& \ \text{sing}(e,w) \ \& \ \text{Agent}(e,w) = \text{him}$

<sup>33</sup> The truth-conditions in (75b) will follow from the semantics in (i) below for the adverbial *tlákw du xánt wutu.ádi* 'always when we go to his house', based upon our semantics for English complex clausal adverbials (61).

(i) [ $\lambda P_{\langle i,t \rangle} : \forall t'. t' \in C_c \ \& \ \exists e. T(e) = t' \ \& \ \text{go.to.his.house}(e) \ \& \ \text{Ag}(e) = \text{us} \ \rightarrow P(t') = 1$  ]

<sup>34</sup> As with the parallel English data in (62), the fact that the relevant events in (75) are temporally sequenced is ultimately due to the appearance of [PRV<sub>2</sub>] in structure (75a), rather than [PRV<sub>1</sub>] (footnote 26). Again, we must leave aside here the independent (and quite difficult) question of what determines the precise contribution of 'perfective aspect' in a given syntactic context.

<sup>35</sup> Again, the truth-conditions in (76b) will follow from the semantics in (i) below for the adverbial *tlákw wutusateení* 'always when we see him', based upon our semantics for complex clausal adverbials (61).

(i) [ $\lambda P_{\langle i,t \rangle} : \forall t'. t' \in C_c \ \& \ \exists e. T(e) = t' \ \& \ \text{see}(e,w) \ \& \ \text{Ag}(e,w) = \text{us} \ \& \ \text{Theme}(e,w) = \text{him} \ \rightarrow P(t') = 1$  ]

The truth-conditions in (76b) state that for every (contextually accessible) time  $t'$  that is the time of an event of our seeing him,  $t'$  is contained within the time of an event of him singing. Thus, every (relevant) event of our seeing him takes place *within* some larger event of him singing.

We find, then, that our proposals in (70)-(72) are able to derive the differing contributions of habitual-perfective and habitual-imperfective from the independent semantic contrasts between [PRV] and [IMPRV]. Under our account, this is ultimately because the ‘habitual’ morphology itself is semantically vacuous; our analysis in (70)-(72) assigns no interpretation to the ‘HAB’ suffix or particle. Instead, their presence is simply triggered/licensed by the existence of a higher, quantificational adverb, and it is the interactions between that quantifier and the lower ASP-heads that ultimately determine the meaning of the habitual sentence.

This dimension of our analysis, however, raises a rather obvious question: what about the many Tlingit sentences found above that contain a habitual-mode verb, but don’t seem to contain any quantificational adverb? That is, it is quite understandable why previous descriptive works on Tlingit would impute a distinct meaning to the habitual morphology itself (Leer 1991). After all, in sentences like (2b) above, the only overt material in the sentence that seems connected with the understood ‘habituality’ is the habitual-mode morphology. This of course invites the quite natural view that it’s that morphology which contributes that portion of the sentence’s meaning.

This need not be the case, however. Recall, for example, that even in English, a sentence can be interpreted as involving quantification over times, even though no overt quantificational adverb appears in the sentence (63). Indeed, such a process seems to be at play in many naturally occurring, textual examples of Tlingit sentences with habitual-mode but no overt quantificational adverb (Leer 1991: 401-403). In these cases, although a quantificational adverb may be missing from one habitual sentence in a narrative, such an adverb does appear earlier in the narrative, and the habitual sentence is understood in context as lying within the scope of that adverb.

However, such ‘implicit anaphora’ to preceding adverbs cannot account for all cases where Tlingit habitual-mode appears without an overt adverb. For example, speakers easily accept and produce sentences like (2b) ‘out of the blue’, and such ‘adverb-less’ habituals can be used to initiate a sequence of other habitual sentences, forming an entire habitual narrative devoid of any overt quantificational adverbs (Leer 1991: 394-396). Here, we must assume that speakers of Tlingit are able to more freely accommodate (or ‘fill in’) an implicit, unspoken temporal quantifier, such as *tlákw* ‘always’ or *wáa nganein sáwé* ‘sometimes’. Such accommodation may (or may not) be impossible in English, but it might be possible in Tlingit precisely because of the existence of the habitual morphology, which serves to signal the presence of some higher (possibly implicit) temporal quantifier. Once again, an analogy can be drawn here to the case of dependent indefinites. Although some languages, like Romanian, do not allow dependent indefinites to appear alone, without another overt quantifier (73b), such sentences are possible in other languages (Zimmermann 2002, Oh 2005, Balusu 2006, Cable 2014). In Korean, for example, although the dependent indefinite marker *ssik-* is generally licensed in the scope of some other quantifier (77a), it is still acceptable in sentences where no overt quantifier scopes over the indefinite (77b).

**(77) Dependent Indefinites in Korean Can Appear Without Another Overt Quantifier**

- a. Haksayng twu-myeng-i kakkak sangca han-kay-**ssik**-lul wunpanhayssta.  
 student two-CL-NOM each box one-CL-**DEP-ACC** carried  
*Two students each carried one box.* (Oh 2005)

- b. Namca twu-myeng-ssik-i sangca sey-kay-lul wunpanhayssta.  
 man two-CL-DEP-NOM box three-CL-ACC carried  
 (At each time / location) two men carried three boxes. (Oh 2005)

Importantly, even in languages that allow sentences like (77b), such sentences are still interpreted as if the dependent indefinite lies within the scope of another quantificational expression. Typically, this understood quantifier is something akin to an adverbial quantifier like ‘at every time’ or ‘at every location’ (Zimmermann 2002, Oh 2005, Balusu 2006, Cable 2014). Thus, it does seem that some languages allow speakers to more freely accommodate (or ‘fill in’) an implicit, unspoken quantificational adverbial, precisely when morphology licensed by such quantifiers occurs in the absence of an overt quantificational expression.<sup>36</sup>

With all this in mind, and given our earlier discussion of similar phenomena in English (Section 4.2.1), we might simply assume that sentences like (2b) in Tlingit possess a syntax like that in (78b) below. Under this approach, then, Tlingit sentences where habitual morphology seems to appear on its own, without an accompanying adverb, underlyingly contain some implicit quantificational adverbial, binding the T-head.

(78) **Implicit Quantificational Adverbs in Some Habitual-Mode Sentences of Tlingit**

- a. Sentence: A<sub>x̄</sub> éesh x̄áat ux̄áaych.  
 1sgPOSS father salmon 3O.HAB.PRV.3S.eat  
*My father eats salmon.* (SE)
- b. Basic Syntax: [<sub>TP</sub> ADV<sub>j</sub> [<sub>TP</sub> T<sub>j</sub> [<sub>AspP</sub> PRV [ a<sub>x̄</sub> éesh x̄áat x̄a ] ] ] ] ]  
*my father salmon eat*

We have seen so far how the general view in (70)-(72) can capture the observed contrasts between habitual perfective-mode and habitual imperfective-mode. Let us now consider how this account can also capture the contrasts between these habitual-modes and (plain) imperfective-mode. First, it rather directly follows that sentences containing a habitual-mode cannot be used to describe (single) ongoing events or states (14)-(15); thus, habitual-marked verbs in Tlingit cannot receive the ‘Ongoing’ readings of imperfective-mode verbs. For example, a sentence like (14b) – repeated below in (79a) – will receive the syntax in (79b). Given the presence of the quantificational adverb in (79b), sentence (79a) will necessarily entail the existence of multiple barking events distributed across a set of times, just as the speaker’s comment in (79a) suggests.

<sup>36</sup> It should be noted, however, that the acceptability of sentences like (77b) in some languages has led others to hypothesize that the understood quantification over times/events in these sentences is directly contributed by the ‘dependent’-marking itself (Zimmermann 2002, Cable 2014). On the other hand, an outstanding problem for these alternate accounts is the possibility of sentences like (77a), where that ‘dependent’-marking appears in construction with a higher quantifier, and it is that quantifier that seems to truly contribute the quantification over events in the sentence (Cable 2014).

Once again, an analogous issue arises with the analysis of the habitual-modes in Tlingit. Note that if one did wish, on the basis of sentences like (2b) and (69), to analyze the Tlingit habitual-modes as directly contributing the understood quantification over times/worlds/situations (*etc.*), then the sentences in (68) become a challenge, since the understood temporal quantification there is intuitively contributed by the overt adverbial alone. Thus, with both dependent indefinites and the Tlingit habitual modes, there exists an analytic tension between those cases where the morphology seems merely to be licensed by some higher quantificational expression, and sentences where no such quantifier (overtly) appears, and the morphology itself seems to contribute such quantification.



(79) **Habitual Mode Cannot Receive ‘Ongoing Event’ Interpretation**

*Scenario:* Some dogs are barking outside. You want to remark on this.

- a. # Yeedát gáanx’ áwé asháa **nooch** wé keitl.  
now outside.at FOC **IMPRV.3S.bark HAB** DEM dog  
*Some dogs often/always/regularly bark outside.* (C)  
Speaker Comment: “*Nooch* means ‘sometimes’” (SE)
- b. Basic Syntax: [TP **ADV**<sub>j</sub> [TP T<sub>j</sub> [AspP IMPRV [ keitl gáanx’ a-sha ] ] ] ]  
*dogs outside bark*

For exactly this same reason, we predict that sentences like (15b) – repeated below in (80a) – will not receive ‘Ongoing State’ readings. Furthermore, we also correctly predict that such sentences will strike speakers as anomalous when the stative predicate bearing habitual morphology is an I-level predicate, as it is in (80a).

(80) **Habitual Mode Cannot Receive ‘Ongoing State’ Interpretation**

- a. # Ax éesh ax tláa asixán nooch  
1sgPOSS father 1sgPOSS mother 3O.**IMPRV.3S.love HAB**  
*My father often/always/regularly loves my mother.* (C)  
Speaker Comment: “[80a] means my dad loves my mom occasionally or intermittently.” (JM)
- b. Basic Syntax: [TP **ADV**<sub>j</sub> [TP T<sub>j</sub> [AspP IMPRV [ ax éesh ax tláa s-xan ] ] ] ]  
*my father my mother love*

As indicated by the speaker comment in (80a) above, when stative predicates in Tlingit appear in a habitual-mode, speakers infer that the state in question holds only ‘intermittently’ or ‘occasionally’, and so is not a stable or lasting property of the subject. Consequently, in sentences where the stative predicate is I-level, and so is generally a stable, lasting property, the use of habitual morphology strikes speakers as anomalous. This effect is further illustrated in (81) below.

(81) **Additional Examples of ‘Discontinuity’ Inference with Habitual Statives**

- a. # Ax éesh káax **nasteech.**  
1sgPOSS father man.at **HAB.PRV.3S.be**  
*My father is (usually, sometimes, often) a man.* (C)  
Speaker Comment: <Laughter> “He’s a man once in a while!” (MD)
- b. # Góon **diyéshk** **nooch.**  
gold **IMPRV.3S.rare HAB**  
*Gold is (usually, sometimes, often) rare.* (C)  
Speaker Comment: “No; it’s rare all the time” (SE)

- c. (#) Has **shayadihéin**      **nooch** wé      táax'aa  
 PL.IMPRV.3S.be.many **HAB** DEM mosquito  
*Mosquitos are (usually, sometimes, often) numerous.* (C)  
Speaker Comments: “It’s okay if you restrict it.” <Offers (81d) instead> (SE)
- d. Kutaanx’      **has shayadihéin**      **nooch** wé      táax'aa  
 summer.in      PL.IMPRV.3S.be.many      **HAB** DEM mosquito  
*Mosquitos are numerous in the summer.* (SE)

In each of (81a)-(81c), speakers object to the use of habitual-mode on the stative predicate, and do so explicitly on the grounds that the state in question is generally a permanent property of the subject. Moreover, in (81c)-(81d), we find that habitual marking is acceptable on a stative, just as long as it’s understood that the state *does* hold only intermittently (*i.e.*, during the summers).

This effect of habitual-mode morphology on stative predicates follows directly from our proposals in (70)-(72). Recall from Section 4.2.1 that when quantificational adverbs scope over stative predicates, the state in question is understood to hold only intermittently, at the times quantified over by the adverbial (66). Thus, such adverbs will generally feel anomalous with I-level statives. Under our proposals in (70)-(72), use of a habitual-mode in Tlingit requires the presence of a (possibly covert) quantificational adverb binding the T-head. Consequently, if an I-level stative ever appears in a habitual mode, it will be interpreted within the scope of a quantificational adverb, and so the observed, anomalous ‘intermittency’ inference will occur.

Finally, and most importantly, let us turn now to the inability for verbs in the habitual perfective-mode to describe ‘non-actualized’ habitualities (25)-(27). We’ve already seen in Section 4.1 that our semantics for [IMPRV<sub>HAB</sub>] correctly predicts that such non-actualized habitualities can be described by verbs bearing imperfective-mode. To recall, a sentence like (82a) below can receive the syntax in (82b), and thus the truth-conditions in (82c). Those truth-conditions only require the coffee-maker to make ‘sweet coffee’ in the worlds  $w'$  where the ‘habitualities’ in the actual world  $w$  are realized. Since  $w$  need not itself be one of these worlds, there is no entailment from (82c) that the coffee maker has ever been used in the actual world.

(82) **Felicity of Tlingit Imperfective-Mode with ‘Non-Actualized Habitualities’**

- a. Imperfective-Mode Sentence, Under ‘Habitual’ Construal:  
 Yá yées aa washéen kúnáx linúktsi coffee áwé  
 DEM new PART machine very IMPRV.3S.sweet.REL coffee FOC  
 al.úkx  
 3O.IMPRV.3S.boil.REP  
*This new machine boils great coffee.* (SE)
- b. Syntax of Sentence (82a): [ T<sub>j</sub> [ IMPRV<sub>HAB</sub> [ yá yées ... l-uk ] ] ]  
*this new ... boil*
- c. Predicted Truth-Conditions for (82a):  
 $\forall w' \in \text{HABIT}(w, g(j)) . \exists e. g(j) \subseteq T(e) . *boil(e, w') \&$   
 $*Ag(e, w') = \text{this.machine} \& \exists y . \text{good.coffee}(y, w') \& \text{Thm}(e, w') = y$

By contrast, the habitual perfective-mode sentence in (83a) below will, according to our analysis, receive the syntax in (83b). Importantly, in this syntactic structure, the AspP is headed by [PRV], *whose meaning does not introduce modal quantification over alternate worlds* (37). Thus, whatever quantificational adverbial is ‘accommodated’ (‘filled in’) for (83b), the truth-conditions will have the general form in (83c).

(83) **Tlingit Habitual Perfective-Mode Entails ‘Actualized’ Habitualities**

- a. Habitual Perfective-Mode Sentence:  
 Yá yées aa washéen kúnáx linúktsi coffee áwé  
 DEM new PART machine very IMPRV.3S.sweet.REL coffee FOC  
 ool.úkch  
 3O.HAB.PRV.3S.boil  
*This new machine boils great coffee.* (C)
- b. Syntax of Sentence (83a): [ ADV<sub>j</sub> [ T<sub>j</sub> [ PRV<sub>1</sub> [ yá yées ... l-uk ] ] ] ]  
*this new ... boil*
- c. Predicted Truth-Conditions for (83b):  
 $\forall/\exists t' . \varphi(t') : \exists e. T(e) \subseteq t' \ \& \ \text{boil}(e, w) \ \& \ \text{Ag}(e, w) = \text{this.machine} \ \& \ \exists y . \text{good.coffee}(y, w) \ \& \ \text{Thm}(e, w) = y$

As we see above, whatever the nature of the temporal quantification introduced by ‘ADV<sub>j</sub>’, the predicted truth-conditions for (83b) will entail that there is indeed an event in the actual world *w* of the coffee machine boiling ‘sweet coffee’. Again, this is due precisely to the fact that – unlike [IMPRV<sub>HAB</sub>] – the [PRV]-head is not semantically a modal quantifier, and so does not introduce quantification over alternate worlds.

Lastly, our account can also explain why habitual *imperfective*-mode should appear to pattern with plain imperfective-mode – and against habitual perfective-mode – with respect to non-actualized habitualities. Under the proposals in (70)-(72), the habitual imperfective-mode sentence in (84a) can receive the syntactic parse in (84b). Crucially, in structure (84b), the AspP is headed by [IMPRV<sub>HAB</sub>], a modal quantifier.

(84) **Felicity of Tlingit Habitual Imperfective-Mode with ‘Non-Actualized Habitualities’**

- a. Habitual Imperfective-Mode Sentence:  
 Wé kóox a káx’ dus.ée nuch.  
 DEM rice 3O.inside 3O.IMPRV.IndefS.cook HAB  
*People cook rice in it.* (C)
- b. Syntax of (84a): [ ADV<sub>j</sub> [ T<sub>j</sub> [ IMPRV<sub>HAB</sub> [ wé kóox ... s-i ] ] ] ]  
*the rice. cook*
- c. Predicted Truth-Conditions for (84b):  
 $\forall/\exists t' . \varphi(t') : \forall w' \in \text{HABIT}(w, t') . \exists e. t' \subseteq T(e) . * \text{cook}(e, w') \ \& \ \exists x . \text{Agent}(e, w') = x \ \& \ \exists y . \text{rice}(y, w') \ \& \ \text{Thm}(e, w') = y \ \& \ \text{Loc}(e, w') = \text{the.machine}$

Consequently, as shown in (84c), thanks to the appearance of this modal quantifier [IMPRV<sub>HAB</sub>], (84a) can receive a reading that entails only that there are events of the machine cooking rice in the worlds  $w'$  where the habitualities of our world  $w$  are actualized. Again, since  $w$  need not itself be such a world, this reading of (84a) is consistent with the rice cooker never having been used.

In summary, as foreshadowed at the end of Section 3.3, our account in (70)-(72) is able to capture the central facts in (5) and (25)-(32) by essentially deconstructing the habitual-modes of Tlingit into a (higher) ‘habitual’ component and a (lower) aspectual component. Furthermore, the ‘habitual’ component of the habitual-mode is not actually, directly contributed by the morphology itself, but instead by a (possibly covert) quantificational adverb in the sentence. Most importantly, though, this ‘habitual’ component consists purely of a temporal quantifier, one that does not introduce modal quantification over other possible worlds. Consequently, any modality to be found in a habitual sentence of Tlingit must be contributed by some other material in the sentence, such as the lower aspectual heads. Thus, our account predicts that verbs bearing habitual *imperfective*-mode should possess the modal quantification allowing the sentence to describe non-actualized habitualities, while verbs bearing habitual *perfective*-mode will lack this modal quantification, and so will entail that the actual world does contain events of the kind described by the VP.

## 6. Outstanding Issues and Further Directions

Having shown how the proposals in (70)-(72) capture the core properties of the Tlingit habitual-mode(s), I will now discuss a number of further consequences and potential challenges for the analysis. I begin in Section 6.1 by showing how the proposals in (70)-(72) can account for a previously documented interaction between habitual constructions and frame adverbials (Boneh & Doron 2008). Next, in Section 6.2, I introduce one major, outstanding problem for the proposed account: the apparent ability to form generic constructions in Tlingit with habitual perfective-mode. Finally, Section 6.3 discusses how the proposals in (70)-(72) might be applied to other languages where special habitual constructions can only be used to describe ‘actualized’ habitualities (28)-(31).

### 6.1 Interactions Between Habitual Mode and Frame Adverbs

In their study of the ‘periphrastic habitual’ construction in Hebrew (4cii), Boneh & Doron (2008) note a curious interaction between this construction and (non-quantificational) frame adverbials. Interestingly, this same effect can be found with the habitual-mode morphology of Tlingit. In brief, with both the Hebrew ‘periphrastic habitual’ and the Tlingit habitual-modes, a frame adverbial cannot be used to delimit the time when the recurring events take place. For example, if there are multiple, recurring events of John drinking coffee within the span of time covered by *tatgé* ‘yesterday’, this scenario can be described in Tlingit with a sentence like (85a). In this sentence, an imperfective-mode verb *alóok* ‘sip’ appears within the scope of the quantificational adverb (*ch’a*) *tlákw* ‘always’, which is itself further restricted by the frame adverbial *tatgé* ‘yesterday’.

#### (85) Frame Adverbials Cannot ‘Scope Over’ a Habitual-Mode Verb in Tlingit

- |    |  |     |                   |         |                 |       |
|----|--|-----|-------------------|---------|-----------------|-------|
| a. | <u>Tatgé</u>                                       | áwé | <u>ch’a tlákw</u> | káaxwee | alóok           | Jáan. |
|    | yesterday  | FOC | just always       | coffee  | 3O.IMPRV.3S.sip | John  |
|    | <i>Yesterday, John was always drinking coffee.</i> |     |                   |         |                 | (LA)  |

- b. \* Tatgé áwé ch'a tlákw káaxwee alóok **nooch** Jáan.  
 yesterday FOC just always coffee 3O.IMPRV.3S.sip **HAB** John

Importantly, however, this kind of scenario cannot be described with the habitual imperfective-mode verb in (85b). Thus, as originally noted by Boneh & Doron (2008), habitual constructions appear to resist restriction by frame adverbs.

However, as also noted by Boneh & Doron (2008), the contrast between (85a) and (85b) is not due to some general incompatibility between the habitual construction and frame adverbs. In particular, if a frame adverb is understood to delimit – not the span of the habituality – but instead the length of the recurring events themselves, then a habitual-mode is fully compatible with the frame adverb. For example, sentence (86) below is entirely well-formed in Tlingit. There, the frame adverb *nás'k gaaw x'áanáx* ‘for three hours’ measures out the individual events of John working, rather than the entire habituality of him regularly working in his garden.

**(86) Frame Adverbials Can ‘Scope Below’ a Habitual-Mode Verb in Tlingit**

Tlákw nás'k gaaw x'áanáx yéi jinaneich Jáan.  
 always three hour through **HAB.PRV.3S.work** John  
*John always worked for three hours.* (MD)

Again, these contrasts in (85)-(86) can also be observed with the ‘periphrastic habitual’ construction of Hebrew (4cii), and Boneh & Doron (2008) offer their own analysis of them there. However, it should be noted that our account in (70)-(72) might also make sense of these facts in Tlingit. To begin, let us simply note that the observed meaning of (86) would naturally follow from a syntactic structure like (87) below, where the T-head is bound by the adverb *tlákw* ‘always’ and the frame adverb *nás'k gaaw x'áanáx* ‘for three hours’ modifies the AspP. Furthermore, our account in (70)-(72) directly predicts that this syntax will yield the appearance of habitual perfective-mode, exactly as we see it in (86).

**(87) Syntactic Structure of Sentence (86)**

[<sub>TP</sub> [<sub>TP</sub> [<sub>TP</sub> *tlákw* ]]<sub>j</sub> [<sub>TP</sub> T<sub>j</sub> [<sub>AspP</sub> [<sub>AspP</sub> *nás'k gaaw x'áanáx* [<sub>AspP</sub> PRV [<sub>VP</sub> *Jáan yéi ji-ne* ]...]]]  
 always for three hours John work

But what of the sentences in (85)? To begin, let us note that given its observed meaning, it does not seem that the T-node in (85a) is bound by the adverb (*ch'a*) *tlákw* ‘always’. That is, the observed meaning of (85a) appears to be akin to that in (88) below, which invokes a specific topical time g(j) that is restricted to the day prior to the speech-time.

**(88) Apparent Truth-Conditions of (85a)**

$g(j) \subseteq \text{YESTERDAY}(c_t) \ \& \ \forall t' . t' \subseteq g(j) \ \& \ t' \in C_c \ \rightarrow$   
 $\exists e . t' \subseteq T(e) \ \& \ \text{sip}(e,w) \ \& \ \text{Agent}(e,w) = \text{John} \ \& \ \exists y . \text{coffee}(y,w) \ \& \ \text{Thm}(e,w) = y$

More specifically, the truth-conditions in (88) state that the topical time g(j) is located within the day prior to speech-time, and every (conversationally relevant) subinterval t' of g(j) is contained within some event of John drinking coffee. Thus, (88) states that at every (conversationally relevant) time t' yesterday, John was in the middle of drinking coffee, which does seem to capture the observed meaning of (85a).



- b. Kut'seen at anal'óonch dóosh.  
 mouse 3O.HAB.PRV.3S.hunt cat  
*Cats hunt mice.* (LA)
- c. Wé yaaw Áak'w Tí has nadal'úx'ch  
 DEM herring Auke Bay PL.HAB.PRV.3S.spawn  
*Herring spawn in Auke Bay.* (SE)
- d. Kúnáx si.áat'i héen ult'ix'ch  
 very IMPRV.3S.cold.REL water HAB.PRV.3S.freeze  
*Very cold water freezes.* (MD)
- e. Gagaanch ulléich wé t'éex'  
 sun.INST HAB.PRV.3S.melt DEM ice  
*Ice melts in the sun.* (SE)
- f. Taan yaakw át jidagútch.  
 sea.lion boat 3O.HAB.PRV.3S.attack  
*Sea lions attack boats.* (MD)
- g. Has usxánch keitl, wé k'isáani  
 PL.3O.HAB.PRV.3S.love dog DEM boy  
*Boys love dogs.* (SE)<sup>37</sup>

In each of the sentences above, a verb in habitual perfective-mode is understood to describe a characteristic property of the entire *kind* or class associated with the subject. In other words, the subjects of these sentences seem to receive a ‘quasi-universal’ or ‘kind-level’ reading. However, as we noted in Section 4.1, the currently prevailing view regarding these ‘quasi-universal’ readings of generic subjects is that they arise from the subject being unselectively bound by the same modal operator responsible for the ‘Habitual’ reading of an imperfective (Krifka *et al.* 1995, Greenberg 2007). Thus, the appearance of this reading in the sentences under (90) constitutes an acute challenge for our proposed analysis of Tlingit habitual perfective-mode, particularly its core claim that those verb forms lack the modal meaning of [IMPRV<sub>HAB</sub>].

Since it is well beyond the scope of this paper to wade into the dark and difficult waters surrounding the semantics of generics, we must leave the facts in (90) as an outstanding – and quite serious – challenge to our proposed account. Nevertheless, one possible solution may be to try crafting a semantics for the generics in (90) upon the *temporal* quantification postulated for those habitual perfective-verbs. That is, our account in (70)-(72) would predict that the sentences in (90) all contain an implicit temporal quantifier, binding the T-head. If this temporal quantifier had universal force (*i.e.*, *tlákw* ‘always’) and was able to unselectively bind the subject, then the resulting sentence may indeed end up with truth-conditions approximating those of a generic built upon the modal quantification of [IMPRV<sub>HAB</sub>]. Furthermore, it is worth noting in this context the well-known fact that generic statements in English often appear to be based upon temporal quantificational adverbs (Lewis 1975); the sentences below illustrate.

<sup>37</sup> A further puzzle worth noting here is the felicity of (90g), despite the fact that I-level statives like *s-xan* ‘love’ are otherwise anomalous in the habitual-modes (80)-(81).

(91) **Quantificational Adverbs in the Generic Statements of English**

- a. Salmon **always** swim.
- b. Cats **always** hunt mice.
- c. Herring **often** spawn in Auke Bay.
- d. Very cold water **always** freezes.
- e. Sea lions **sometimes** attack boats.
- f. Boys **always** love dogs.

Thus, there does seem to be a deeper connection between genericity and temporal quantification, one that may ultimately reveal how the facts in (90) are consistent with our proposals in (70)-(72).

As one final, even more challenging puzzle in this domain, consider the Tlingit sentence below, as well as its English translation.

- (92) Ldakát k̄aach            aḵ            atgas.éeyi            ch'ás    tleix'dahéen  
all    person.ERG    1sgPOSS            cooking            only    once

has ooḵáaych.

PL.3O.HAB.PRV.3S.eat

*All people eat my cooking only once.*

(MD)

Like the sentences in (90), sentence (92) appears to be a generic statement formed from the habitual-perfective mode. More curiously, however, let us note that the ‘characteristic property’ at play in (92) – and somehow contributed by the habitual verb – involves doing something *just once*. The fact that the eating-events in (92) are explicitly limited to a *single* occurrence per individual raises some non-trivial puzzles regarding the nature of the quantification at work in such generics. A similar puzzle of course also arises for the English translation of (92), *people eat my cooking only once*, a fact originally observed and discussed in the work of Scheiner (2002).

### 6.3 The Possible Cross-Linguistic Generality of the Analysis

As previously noted, a central goal of this paper is to explain the inability of certain habitual constructions in Tlingit to describe ‘non-actualized’ habitualities. Importantly, this general phenomenon is by no means unique to Tlingit; as we observed in Section 3.3, similar effects have been reported for a number of unrelated, typologically distinct languages. To recall, in each of the languages below, the specifically ‘habitual’ construction illustrated here is felt to only be felicitous if the events in question have actually occurred.

(93) **Other Habitual Constructions That Only Describe ‘Actualized’ Habitualities**

- a. African American English (Green 2000):  
This printer **be printing** a hundred pages a minute.
- b. Hebrew (Boneh & Doron 2008):  
Dan **haya melamed**            b-a-'universita.  
Dan **HAB.PST**    taught-PTCPL            in-the-university  
*Dan taught at the university.*

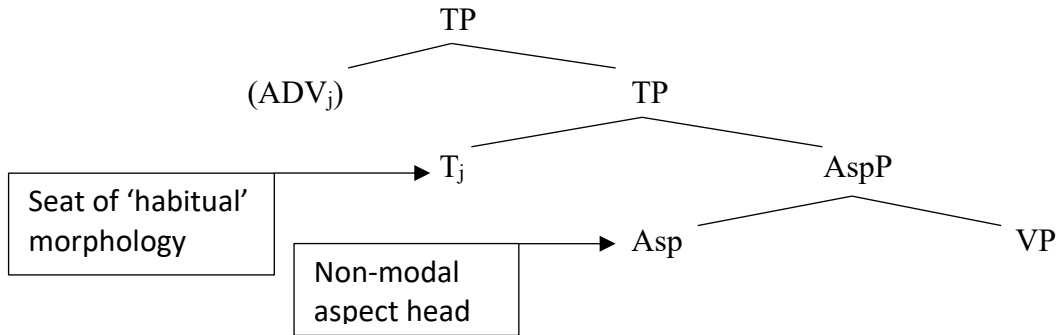


- c. Czech (Filip 2018):  
 Tento stroj                    **drtivá**                    pomeranče  
 this machine                    crush.**HAB**                    oranges  
*This machine crushes oranges.*
- d. Kallalisut (Bittner 2008):  
 Mari      Marsiminngaaniirsunik                    allakkirisarpuq  
 Mary      Mars.ABL.be.COND                    letter-work.**HAB**  
*Mary handles mail if it is from Mars.*

This naturally raises the question of how our proposed account in (70)-(72) might be extended to the habitual constructions of these other languages.

To address this question, let us begin by recalling that under our proposed account, the habitual morphology of Tlingit is the realization of a quantificationally bound T-head, which combines with the lower Asp-heads [(IM)PRV] to yield the overall meaning of the habitual construction. Furthermore, the inability for the habitual perfective-mode construction of Tlingit to describe ‘unactualized’ habitualities is ultimately due to the non-modal semantics of the lower Asp-head in the structure, [PRV]. In summary, then, the underlying morphosyntactic form of the Tlingit habitual perfective-mode could be schematized as follows.

(94) **General Form of a Habitual Construction With ‘Actuality’ Entailment**



Interestingly, this general perspective on the habitual constructions of Tlingit may fit nicely with the surface morphosyntax of some of the other constructions in (93). Of particular interest here are the habitual constructions of African American English (93a) and Hebrew (93b), which consist of a higher ‘habitual’ auxiliary together with a lower verbal participle. It is also worth noting that in (93a), that participle bears a connection with the progressive aspect ([PROG]) in English, which is generally held to have the semantics of the ‘Ongoing Event’ reading of imperfective (See Appendix A1). It may be, then, that the lower participle in (93a) realizes an instance of the [IMPRV<sub>OG</sub>] head, an Asp-head that – like [PRV] – lacks the modal semantics of [IMPRV<sub>HAB</sub>]. In this way, our analysis of the Tlingit habitual-modes may indeed shed some light onto the parallel behavior of ‘habitual *be*’ in African American English.

Of course, it remains to be seen whether this line of approach will be as promising for the habitual auxiliary construction of Hebrew (93b). Here, it would be crucial to independently examine the semantics of the lower participial morphology in (93b), and whether – like the progressive morphology in (93a) – it would fail to introduce the modal quantification needed for

the habituality to be non-actualized. Finally, it is not yet clear precisely how the proposed account might be extended to the habitual morphology of Czech (93c) and Kallalisut (93d). It may nevertheless be worth noting, though, that the Czech habitual morphology is etymologically an instance of imperfective-aspect combining with another, lower imperfective-form of the verb, a kind of ‘doubly aspectualized’ verb (Filip 2018). One might wonder, then, whether that higher ‘imperfective’-morphology might at all synchronically be a realization of a (bound) T-head, while the lower aspectual morphology is a realization of (non-modal) [IMPRV<sub>OG</sub>].

## 6.4 Conclusion

In the preceding sections, I have argued that the habitual morphology of Tlingit is ultimately a realization of the T-head, specially triggered when [T] is bound by a quantificational adverb. Furthermore, I’ve argued that it’s this (potentially implicit) quantificational adverb that is truly responsible for the understood ‘habituality’ of sentences containing this morphology. We’ve also seen how this general approach might be applicable to the habitual constructions of other languages, particularly those where habitual marking exhibits a similar bi-partite morphosyntactic structure. Finally, a central result of this approach is that these kinds of habitual constructions should both (i) be infelicitous when combining with I-level stative predicates, and (ii) when combining with a non-modal Asp-head (e.g. [PRV], [IMPRV<sub>OG</sub>]), entail that events of the kind described by the VP actually have occurred.

In summary, then, we find that there may be two ‘paths to habituality’ both within and across languages. That is, so-called ‘habitual’ sentences may underlyingly have two quite different syntactic structures. Under one structure, schematized below in (95a), the habitual semantics is directly contributed by imperfective aspect, which can have the meaning of a modal operator (Arregui *et al.* 2014, *et multa alia*). However, under the second structure (95b), the understood multiplicity of events is ultimately the consequence of a (potentially implicit) quantificational adverb.

- (95) a. General Structure Proposed for Tlingit Imperfective-Mode Habituals:  
 [TP T [AspP **IMPRV**<sub>HAB</sub> [VP my father eat salmon ] ... ]
- b. General Structure Proposed for Tlingit Habitual-Mode Habituals:  
 [TP **TempQuant** [TP T [AspP ASP [VP my father eat salmon ] ... ]

We have also seen that in some languages – notably Tlingit – these two structures may be overtly, morphophonologically distinguished, by means of special marking triggered by the quantificational binding of the T-head. This of course raises the possibility that in other languages, particularly those that don’t specially mark such ‘quantificationally dependent’ tenses, habitual sentences might be systematically ambiguous between the two structures in (95). Indeed, in an appendix to this paper, I present evidence that exactly this syntactic ambiguity can be detected in the ‘simple present’ sentences of English (e.g. ‘my father eats salmon’).

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## Appendices

In the appendices below, I explore some further consequences of the analysis developed in Section 5 for the Tlingit habitual-modes. In the first appendix, I present some important consequences for our analysis of 'simple present' habituals in English. In the second appendix, I discuss a number of interrelated puzzles in Tlingit surrounding the morphophonology and interpretation of other aspectual forms, particularly in combination with quantificational adverbs.

### A1. The Morpho-Syntax and Semantics of 'Simple Present' in English

This paper begins with the sentence in (1), repeated below, a 'simple present' habitual in English.

(96) **English Habitual Sentence:**            My father **eats** salmon.

Despite their morphophonological simplicity, many aspects of the morphosyntax and semantics of such English ‘simple’ verbs remain controversial. Nevertheless, it is fair to say that a common view is that sentences have a structure like that in (97a) below. Under this view, the understood habituality of these sentences is directly contributed by an instance of imperfective aspect, receiving its ‘Habitual’ construal (Deo 2009, 2015).

(97) **Possible Syntactic Structures for English ‘Simple Present’ Habituals**

- a. [TP [ T<sub>j</sub> PRS ] [AspP **IMPRV<sub>HAB</sub>** [VP my father eat salmon ] ... ]
- b. [TP TP **TempQuant** [TP T<sub>j</sub> [AspP **PRV** [VP my father eat salmon ] ... ]

I will argue, however, that alongside the structure in (97a), sentences like (96) can also receive the structure in (97b). In this structure, which is parallel to the form of Tlingit habitual perfective-mode, the understood habituality is contributed by a (potentially implicit) quantificational adverb. Most notably, the AspP in (97b) is headed by [PRV]-aspect, while the bound T-head *lacks any (semantically interpreted) tense features*.

To begin, let us recall from Section 4.2 that simple past-tense verbs in English can be interpreted as bearing perfective aspect (53). This, of course, is not the only aspectual interpretation such verbs can receive. As illustrated below, ‘simple past’ verbs in English can also appear to receive the ‘Habitual’ and ‘Ongoing State’ readings of imperfective aspect [IMPRV].

(98) **The Aspectual Construals of Simple Past in English**

- a. *Past Perfective:* Yesterday, at three o’clock, my father **ate** salmon.
- b. *Past Habitual:* During his time in college, my father **smoked** cigars.
- c. *Past Ongoing State:* When my parents first met, my father **owned** a Buick.

Notably, however, simple past verbs in English cannot receive the ‘Ongoing Event’ reading of [IMPRV]. In English, this meaning can only be expressed through a past progressive.

(99) **Past ‘Ongoing Events’ Described with English Past Progressive**

- Past Ongoing Event:* When I arrived home, my father **was cooking** / **#cooked**.

This array of facts suggests the following picture regarding the aspectual character of English simple verbs (Deo 2015). First, both the [PRV] and [IMPV] Asp-heads are phonologically empty in English; neither head triggers any special aspectual morphology on an English verb. Thus, a ‘simple past’ sentence in English can have either of the structures in (100) below.

(100) **The Form of English Simple Past Sentences (Deo 2015)**

- a. Past Perfective: [TP [T T<sub>j</sub> PST ] [AspP **PRV<sub>1/2</sub>** VP ] ]
- b. Past Imperfective:
  - (i) *Habitual:* [TP [T T<sub>j</sub> PST ] [AspP **IMPRV<sub>HAB</sub>** VP ] ]
  - (ii) *Ongoing:* [TP [T T<sub>j</sub> PST ] [AspP **IMPRV<sub>OG</sub>** VP ] ]

But, if English simple past sentences can contain an instance of [MPRV<sub>OG</sub>], what prevents such sentences from describing ongoing events (99)? Following Deo (2015), we might suppose that

such ‘Ongoing Event’ uses of simple past are ‘blocked’ in English, due to the presence of an additional Asp-head, the progressive [PROG]. As shown below, [PROG] is essentially a version of [IMPRV<sub>OG</sub>] that is specially restricted to *eventive/dynamic* predicates.

$$(101) \quad [[ \text{PROG} ]]^{\text{w,t,g}} = [ \lambda P_{\langle \varepsilon, t \rangle} . \mathbf{P \text{ is eventive}} : [ \lambda t' : \exists e . P(e) \ \& \ t' \subseteq T(e) ] ]$$

Under the denotation in (101), [PROG] triggers a presupposition that the VP it combines with is eventive. Consequently, since it otherwise has the same denotation as [IMPRV<sub>OG</sub>], the principle of Maximize Presupposition (Heim 1991) will entail that an AspP cannot be headed by [IMPRV<sub>OG</sub>] if the VP is eventive.<sup>38</sup> Thus, ongoing (past) events can only be described via the [PROG] head in (101), and not through a simple past verb (99).

Importantly, the picture in (100)-(101) appears to account quite nicely for the observed interpretations of simple present verbs in English. As we see in (102), simple present verbs in English generally exhibit either the ‘Habitual’ or ‘Ongoing State’ interpretations of [IMPRV].

(102) **The Aspectual Construals of Simple Present in English**

- a. *Present Habitual:* My father **smokes** cigars.
- b. *Present Ongoing State:* My father **owns** a Buick.

As with simple pasts, simple presents cannot in English describe ongoing events; instead, a present progressive must be used.

(103) **Present ‘Ongoing Events’ Described with English Past Progressive**

- Present Ongoing Event:* My father **is cooking** / **#cooks**.

It seems, then, that simple presents in English can have either of the structures in (104) below. However, due to the existence of [PROG], structure (104b) is ruled out when the VP is eventive.

(104) **The Form of English Simple Present Sentences (Deo 2015)**

- a. *Habitual:* [TP [T T<sub>j</sub> PRS ] [AspP IMPRV<sub>HAB</sub> VP ] ]
- b. *Ongoing:* [TP [T T<sub>j</sub> PRS ] [AspP IMPRV<sub>OG</sub> VP ] ]

Notably, in both (104a) and (104b), the AspP is headed by an instance of [IMPRV]. As discussed in Section 4.1, there exists across languages a general, pragmatic incompatibility between present-tense and perfective-aspect (Bennett & Partee 1978, De Wit 2016). Thus, in most contexts, a ‘present perfective’ structure like (105a) below will not be felicitous. However, it may be that certain uses of simple present in English do reflect such structures and meanings, especially ‘play-by-play’ or ‘Sportscaster’ reports like those in (105b) (Section 4.1).

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<sup>38</sup> Very roughly speaking, the principle of Maximize Presupposition can be stated (for our purposes) as the following:

- (i) If two expressions  $\alpha$  and  $\beta$  have the same denotations, but  $\alpha$  introduces presupposition  $\varphi$  that  $\beta$  does not, and  $\varphi$  is satisfied in context  $c$ , then  $\alpha$  (not  $\beta$ ) must be used in context  $c$

Note that if an AspP  $\alpha$  contains an eventive VP and is headed by [PROG], it will have the same denotation as an AspP  $\beta$  containing that VP and headed by [IMPRV<sub>OG</sub>], but  $\alpha$  will also introduce the presupposition that the VP is eventive. Since, by assumption, that presupposition is satisfied, the principle as stated above will require that  $\alpha$  be used to express that ‘Ongoing Event’ denotation, rather than  $\beta$ .



- (105) a. Generally Infelicitous Structure: [TP [T T<sub>j</sub> PRS ] [AspP **PRV** VP ] ]  
 b. Possible (Marginal) Use of Present Perfective in English:  
 (i) *Sportscaster / Play-by-Play:* He **shoots!** He **scores!**  
 (ii) *Stage Directions:* And then, Hamlet **walks** offstage.

Despite its elegance, however, the picture of English simple present verbs in (104)-(105) runs into some difficulties with our semantics for quantificational adverbs. Consider, for example, sentences like (106) below.

(106) Every Tuesday, my mother **eats** bread.

Given our analysis of its past-tense variant (57), our account would view the quantificational adverb *every Tuesday* as binding the T-head of (106). Furthermore, since the VP in (106) is eventive/dynamic, the AspP could not be headed by [IMPRV<sub>OG</sub>] (103), nor could it be headed by [PRV], since the T-head (apparently) bears [PRS]-tense (105a). Consequently, we are led to conclude that (106) must have the structure in (107a) below.

- (107) a. Inaccurate, but Predicted Structure for (106):  
 [TP [ every Tuesday ]<sub>j</sub> [ [T T<sub>j</sub> PRS ] [AspP **IMPRV**<sub>HAB</sub> [VP *my mother eat bread* ]... ] ]  
 b. Predicted Truth-Conditions (Via Local Accommodation (56)):  
 $\forall t' . \text{Tuesday}(t') \ \& \ t' \in C_c \ \& \ t' = t \rightarrow$   
 $\forall w' \in \text{HABIT}(w, t') . \exists e . t' \subseteq T(e) . *eat(e, w') \ \&$   
 $*Agent(e, w') = \text{my mother} \ \& \ \exists y . \text{bread}(y, w') \ \& \ *Theme(e, w') = y$

Unfortunately, however, due to the semantics of [PRS] tense (44b), structure (107a) will receive the truth-conditions in (107b). These truth-conditions appear to be inaccurate in two respects. First, due to local accommodation of the presupposition introduced by [PRS], the quantification over ‘Tuesdays’ in (107b) is restricted to those that *equal* the time of speech *t*. Thus, (107a) will be vacuously true if uttered on a non-Tuesday, and if uttered on a Tuesday will be equivalent to ‘*my mother eats bread*’. Furthermore, even if this aspect of the truth-conditions in (107b) is corrected, the presence of [IMPRV<sub>HAB</sub>] raises a second problem. Due to the modal semantics of this Asp-head, the truth-conditions of (107b) do not entail that my mother *actually* eats bread on Tuesdays, only that there is a ‘habituality’ of her doing so. However, under its most natural reading, sentence (106) does seem to entail actual bread-eating events by my mother on Tuesdays, and not simply the ‘disposition’ for her to do so.

With these observations in mind, the following truth-conditions seem to more accurately reflect the understood meaning of sentence (106).

- (108) **More Accurate Truth-Conditions for Sentence (106)**  
 $\forall t' . \text{Tuesday}(t') \ \& \ t' \in C_c \rightarrow \exists e . T(e) \subseteq t' \ \& \ eat(e, w) \ \&$   
 $Agent(e, w) = \text{my mother} \ \& \ \exists y . \text{bread}(y, w) \ \& \ Theme(e, w) = y$

These truth-conditions state simply that every (contextually relevant) Tuesday contains an event of my mother eating bread. Importantly, the quantification over Tuesdays is not restricted to those

in the past or present, and there is no modal operator scoping above the quantification over eating-events.

As it stands, however, our system for English tense and aspect in (100)-(105) will not be able to associate sentence (106) with the truth-conditions in (108). Notice, though, that those truth-conditions would be derived for a syntactic structure like that in (109) below.

(109) **Syntactic Structure Yielding Truth-Conditions in (108)**

[<sub>TP</sub> [ every Tuesday ]<sub>j</sub> [ [<sub>T</sub> T<sub>j</sub> ] [<sub>AspP</sub> PRV<sub>1</sub> [<sub>VP</sub> my mother eat bread ]...]

Crucially, in this structure, the T-head bears no tense features, and so local accommodation will not introduce an additional restriction to the quantification over ‘Tuesdays’. Furthermore, the AspP is headed by [PRV<sub>1</sub>], which will both (i) fail to introduce the problematic modal quantification in (107b) and (ii) correctly locate the (complete) eating-events by my mother within the times introduced by ‘*every Tuesday*’. Finally, it is worth noting that since there is no instance of [PRS]-tense in (109), this structure does not run afoul of the pragmatic principles that generally militate against its co-occurrence with [PRV]-aspect.

Clearly, then, we should seek to understand how sentence (106) could receive a morphosyntactic structure like that in (109). The key issue here is, of course, the absence of any tense-features on the T-head. Interestingly, however, there is much precedent for allowing the T-head in English to underlyingly have no tense features, particularly in *subordinate* clauses.

As is well-known, tensed subordinate clauses in English can allow for so-called ‘simultaneous’ readings. Under these readings, illustrated in (110) below, the surface tense of the subordinate clause seems not to be semantically interpreted (Abusch 1997).

(110) **Simultaneous Readings of Subordinate Tensed Clauses in English**

- a. Embedded Past Tense:  
 Dave said my mother **was** eating bread.  
 (Felicitous Scenario: Dave said ‘Your mother *is* eating bread’)
  
- b. Embedded Present Tense:  
 Dave is going to say my mother **is** eating bread.  
 (Felicitous Scenario: Dave will say ‘Your mother *is* eating bread’)

That is, under their simultaneous readings, sentences (110a,b) describe scenarios where the reported time of my mother’s eating bread is (more-or-less) identical to the time of the reported speech act (*i.e.*, the time of Dave’s speaking). Crucially, these simultaneous readings arise exactly when the tense-morphology of the subordinate clause matches that of the main clause. Thus, when the main clause is past-tense, a subordinate past-tense clause allows for a simultaneous reading (110a), and when the main clause is present-tense, a subordinate present-tense allows for a simultaneous reading (110b). However, as shown below, when the tenses of the main and subordinate clauses do not match, a simultaneous reading for the subordinate clause is not possible.

(111) **Simultaneous Readings Require Matching Matrix and Subordinate Tense**

Dave thinks my mother **was** eating bread.

(Felicitous Scenario: Dave thinks ‘Your mother *was* eating bread’)

(Infelicitous Scenario: Dave thinks ‘Your mother *is* eating bread’)

These general facts have been studied extensively in the semantic literature on tense, and a broad variety of analyses have been proposed (Ogihara & Sharvit 2012, von Stechow 2009, Altshuler & Schwarzschild 2012). One prominent line of approach, however, posits that simultaneous readings are the result of a special variety of T-head, sometimes dubbed ‘the null tense’ (Kratzer 1998, 2009). As illustrated below, this T-head bears no presuppositional tense features and thus is simply a pure instance of [T], as in the ‘tenseless’ sentences of Tlingit (42).

(112) **The ‘Null Tense’ of English (Kratzer 1998, 2009):**  $[[ [T \emptyset_j ] ] ]^{w,t,g} = g(j)$

Unlike the bare T-head of Tlingit, however, this ‘null tense’ of English must always be bound, and so can never be purely referential (Kratzer 1998, 2009).

Under this approach, the simultaneous readings of (110a,b) can be derived from syntactic structures like those in (113) below, where the embedded TP is headed by the ‘null tense’ above, which is bound by intensional/modal operators in the left-periphery of the CP.

(113) **Simultaneous Readings via ‘Null Tense’ in Subordinate TP (Kratzer 1998, 2009)**

a. Structure of (110a):

$[_{TP} [ T_j \text{ PST } ] ]_{[AspP \text{ PRV } ]} [_{VP} \text{ Dave say } [_{TP} [ OP_j [ T \emptyset_j ] ]_{[AspP \text{ IMPRV } ]} [_{VP} \text{ my mother ... } ] \dots ]$

b. Structure of (110b):

$[_{TP} [ T_j \text{ PRS } ] ]_{[AspP \text{ going } ]} [_{VP} \text{ Dave say } [_{TP} [ OP_j [ [ T \emptyset_j ] ]_{[AspP \text{ IMPRV } ]} [_{VP} \text{ my mother ... } ] \dots ]$

Importantly, it is the lack of any presuppositional tense-features on ‘[T  $\emptyset_j$  ]’ that allows the structures in (113a,b) to yield the observed simultaneous readings in (110). But, what of the fact that the embedded clauses in (110) do surface with tense morphology? Here, it is assumed that there exist purely morphophonological ‘feature-passing’ mechanisms whereby the null tense ends up being pronounced as a copy of the matrix tense (Kratzer 1998, 2009). Thus, the system predicts that simultaneous readings of embedded TPs will only arise when the matrix and embedded tenses match in form (111).

Curiously, however, Kusliy (2018, 2020) observes that simultaneous readings are sometimes possible for instances of present tense embedded underneath *past*-tense verbs. In particular, if the matrix VP in (110a) undergoes VP-fronting, then a (pure) simultaneous reading is possible, even when the embedded clause contains present tense (114a).

(114) **Exceptional Simultaneous ‘Present-Under-Past’ with VP-Fronting (Kusliy 2018)**

a. Sentence:

Say that my mother **is** eating bread, Dave **did**.

(Felicitous Scenario: Dave said ‘Your mother *is* eating bread’)

- b. Proposed Structure (Kusliy 2018, 2020)  
 [VP say [TP [ OP<sub>j</sub> [T ∅<sub>j</sub> ]][AspP IMPRV [VP *my mother eat bread* ]...]<sub>k</sub>  
 [TP [ T<sub>j</sub> PST ]][AspP PRV [VP *Dave t<sub>k</sub>* ] ... ]

Kusliy (2018, 2020) argues that the surprising facts in (114a) can nevertheless be accounted for within the general ‘null tense’ approach in (112)-(113). That is, we might assume that (114a) has essentially the same structure as (113a), except that the subordinate null tense surfaces in a position where it is not c-commanded by any other T-head in the structure (114b). In such a position, the morphophonological featuring-passing mechanisms proposed by Kratzer (1998, 2009) would be unable to ‘pass’ the tense-features of the matrix T-head to the embedded null tense ‘[T ∅<sub>j</sub> ]’. Kusliy (2018, 2020) then proposes that in such cases, the null tense ‘[T ∅<sub>j</sub> ]’ surfaces with a default pronunciation, as present tense morphology. Consequently, the structure in (114b) – which will receive the same simultaneous reading as that in (113a) – will end up pronounced as in (114a), with an embedded instance of present tense morphology.

In summary, then, the overall distribution of simultaneous readings of embedded tense in English (110)-(114) suggests that the TPs of English need not contain any tense-features, just so long as those T-heads are bound (Kratzer 1998, 2009). Furthermore, when these bound, featureless T-heads are c-commanded by other T-heads in the sentence, morphophonological processes lead them to be pronounced as copies of those higher T-heads, but when no such c-commanding T-heads exist, these featureless instances of [T] receive a ‘default’ pronunciation as present tense (Kusliy 2018, 2020).

With all this in mind, then, we can finally understand how the sentence in (106), repeated below, might underlyingly have the syntax in (109)/(115b).

#### (115) **Simple Present in English as Quantificationally Bound Tense with [PRV]**

- a. Sentence: Every Tuesday, my mother **eats** bread.  
 b. Structure:  
 [TP [ every Tuesday ]<sub>j</sub> [TP [T ∅<sub>j</sub> ]][AspP **PRV**<sub>1</sub> [VP *my mother eat bread* ]...]

Under the analysis in (115b), the T-head in (115a) does not contain an instance of the [PRS] feature. Instead, it is an instance of the null tense ‘[T ∅<sub>j</sub> ]’. However, since the null tense in (115b) is not c-commanded by any other T-head in the sentence, it will surface with its default pronunciation as present-tense morphology (Kusliy 2018, 2020). Thus, the structure in (115b) will be pronounced as in (115a); most importantly, however, this structure will yield the truth-conditions in (108), which we have seen to more accurately reflect the understood meaning of (115a) than those in (107b).

Returning now to the sentence in (1)/(96), our overall theory of English tense and aspect predicts that this sentence can receive either of the structures in (116a) below.

#### (116) **The Analysis of English ‘Simple Present’ Habituals**

- a. Allowable Structures:  
 (i) [TP [ T<sub>j</sub> PRS ]][AspP **IMPRV**<sub>HAB</sub> [VP *my father eat salmon* ] ... ]  
 (ii) [TP **TempQuant** [TP [T ∅<sub>j</sub> ]][AspP **PRV** [VP *my father eat salmon* ] ... ]

b. Ill-Formed Structures:

- (i) [TP [T  $\emptyset_j$ ] [AspP **IMPRV** / **PRV** [VP my father eat salmon ] ... ]  
(ii) [TP [ T<sub>j</sub> PRS ] [AspP **PRV** [VP my father eat salmon ] ... ]

Under the structure in (116ai), the sentence ‘*my father eats salmon*’ contains a semantically interpreted instance of the [PRS] tense-feature and the AspP is headed by the ‘Habitual’ version of imperfective [IMPRV<sub>HAB</sub>]. However, under the structure in (116aii), the AspP is headed by the non-modal [PRV]-head, and the TP is headed by the null tense ‘[T  $\emptyset_j$ ]’. Though the sentence does not contain an instance of [PRS], the verb surfaces with default present-tense morphology, due to the fact that ‘[T  $\emptyset_j$ ]’ is not c-commanded by any other T-head. Finally, the null tense in (116aii) is bound by a temporal quantifier, which can in some contexts be implicit (or elided). Thus, structure (116aii) is likely the parse of ‘*my father eats salmon*’ in discourses like (117) below.

- (117) a. Person 1: What does your father do every Sunday?  
b. Person 2: My father **eats** salmon.

Finally, it should be observed that our theory predicts that the structures in (116b) will not be possible parses for sentence (1)/(96). In structure (116bi), the null tense head is unbound and referential, violating a key syntactic condition on its distribution (Kratzer 1998, 2009). In structure (116bii), [PRV]-aspect coincides with [PRS]-tense, which will generally produce a pragmatically anomalous structure.<sup>39</sup>

We therefore find that, as hinted in Section 6.4 of this paper, simple present habituals in English are systematically syntactically ambiguous. In particular, these sentences can have the structure of either imperfective-mode habitual sentences in Tlingit (116ai) or habitual perfective-mode sentences (116aii). Thus, although the ‘two paths to habituality’ in (95) are morphologically distinguished in some languages (e.g., Tlingit), they may not be in others (e.g. English).

Finally, I will close this appendix by demonstrating that some further, independent evidence supporting the view in (116) can be found in two phenomena: (i) the interpretation of English simple present verbs with complex quantificational adverbs, and (ii) the interpretation of English bare plurals with simple present verbs.

To begin with the complex quantificational adverbs, let us note again the contrast observed earlier in (16), repeated below, for English present-tense verbs in the scope of such adverbials.

- (118) a. Whenever we arrive at his house, Dave **sings**.  
b. Whenever we arrive at his house, Dave **is singing**.

As observed in Section 3.2, sentence (118a) is most naturally understood to locate the recurrent events of Dave singing *just after* the events of our arriving at his house, while (118b) locates the

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<sup>39</sup> It is interesting to note that our theory thereby resolves a debate between Sauerland (2002) and Thomas (2015) over whether present tense in English is ‘semantically vacuous’. On the basis of examples like (106), Sauerland (2002) argues that present tense morphology in English is vacuous, and does not introduce a presupposition that the T-node denotes the speech-time. In response, however, Thomas (2015) argues convincingly that present tense sentences *lacking* any quantificational adverbs do have semantically interpreted [PRS]-features. Importantly, the overall theory presented here accounts for both of these observations. In sentences containing quantificational adverbs, the T-head is bound, and so can be an instance of the featureless ‘null tense’. However, in sentences lacking quantificational adverbs, the null tense would not be licensed, and so present tense morphology must reflect underlying [PRS]-features.

singing-events *throughout* our arrival. As the reader is invited to confirm, this contrast will follow if (118a) receives the structure in (119a) below, while (118b) receives the structure in (119b).

(119) **Syntactic Structures Yielding Observed Interpretations of (118a,b)**

- a. Structure for (118a):  
[<sub>TP</sub> [<sub>AdvP</sub> Whenever we arrive at his house ]<sub>j</sub> [<sub>TP</sub> [<sub>T</sub> ∅<sub>j</sub> ] [ **PRV**<sub>2</sub> [<sub>VP</sub> Dave sing ] ...]
- b. Structure for (118b):  
[<sub>TP</sub> [<sub>AdvP</sub> Whenever we arrive at his house ]<sub>j</sub> [<sub>TP</sub> [<sub>T</sub> ∅<sub>j</sub> ] [ **PROG** [<sub>VP</sub> Dave sing ] ...]

Crucially, in (119a), the AspP is headed by [PRV<sub>2</sub>], which will result in the events of singing occurring just after the times when we arrive at Dave’s house (75). In (119b), however, the AspP is headed by [PROG], which will result in the singing-events surrounding the times of our arrival (101). Thus, to capture the observed interpretation of the simple present in (118a) – as well as its contrast with present progressive in (118b) – it is crucial to allow the former to have the structure of a Tlingit habitual perfective-mode verb, and thus to realize an instance of [PRV]-aspect.

Finally, let us consider the interpretation of bare plural subjects with simple present verbs in English. To begin, we should note that although the Asp-heads in (115) and (119a) are [PRV], our theory does allow for quantificational adverbs to co-occur with an AspP headed by [IMPRV<sub>HAB</sub>]. That is, the syntactic structure in (120b) is entirely well-formed, and will receive the truth-conditions in (120c). Thus, (120c) is predicted to be a reading of (120a), which does seem to be correct, particularly in contexts like (120d).

(120) **Quantificational Adverbs Scoping Over [IMPRV<sub>HAB</sub>]**

- a. Sentence: Every winter, Dave **drives** his jeep.
- b. Possible Structure for (120a):  
[<sub>TP</sub> [<sub>AdvP</sub> Every winter ]<sub>j</sub> [<sub>TP</sub> [<sub>T</sub> ∅<sub>j</sub> ] [ **IMPRV**<sub>HAB</sub> [<sub>VP</sub> Dave drive his jeep ] ...]
- c. Predicted Truth-Conditions in (120b):  
 $\forall t' . \text{Winter}(t') \ \& \ t' \in C_c \rightarrow$   
 $\forall w' \in \text{HABIT}(w, t') . \exists e. t' \subseteq T(e) . *drive(e, w') \ \&$   
 $*Agent(e, w') = \text{Dave} \ \& \ *Theme(e, w') = \text{Dave's jeep}$

- d. Scenario Requiring Reading (120c):  
Dave owns a Honda Civic and a jeep. He also lives in the Berkshires, where the winters can be tough. Consequently, during the winter, Dave always chooses to drive his jeep, if he ever has to go out driving (though some winters he can avoid driving entirely).

Thus, an English simple present verb in the scope of a quantificational adverb can in principle involve a realization of either [PRV] or [IMPRV].

Given the facts in (120), it should be possible for a generic sentence in English to lie within the scope of a quantificational adverb. That is, recalling the analysis of generic sentences in (52)

from Section 4.1, a sentence like (121a) below could receive the syntax in (121b) and so the interpretation in (121c).

(121) **Quantificational Adverbs Scoping Over Generic Sentence in English**

- a. Sentence: Every fall, geese migrate south.
- b. Possible Structure for (121a):  
[TP [AdvP Every fall ]<sub>j</sub> [TP [T ∅]<sub>j</sub> ] [ IMPRV<sub>HAB, k</sub> [VP [ geese<sub>k</sub> migrate south ] ...]
- c. Predicted Truth-Conditions in (120b):  
 $\forall t' . \text{Fall}(t') \ \& \ t' \in C_c \rightarrow$   
 $\forall \langle w', x \rangle . w' \in \text{HABIT}(w, t') \ \& \ \text{goose}(x, w', t') .$   
 $\exists e . t' \subseteq T(e) . *migrate(e, w') \ \& \ *Agent(e, w') = x$

Although there remain issues for this assumed treatment of generics (Section 4.1), the truth-conditions in (121c) essentially state that for every time-span  $t'$  lying within a (contextually relevant) fall, in all the worlds  $w'$  where the habitualities in  $w$  at  $t'$  are actualized, every goose in  $w'$  at  $t'$  is the agent of some plurality of migrations. Thus, in every fall, it is generally true of geese that they migrate, which is a fair approximation of the intuitive meaning of (121a).

However, as we've just seen in (115)-(119), simple present verbs in English can also be construed as containing an instance of [PRV] aspect. Importantly, when [PRV] aspect co-occurs with a bare plural subject in English, that subject does not receive a 'quasi-universal' or 'kind-level' interpretation, but rather an existential one. That is, in a sentence like (122a) below, the AspP is most naturally understood as headed by [PRV]. Consequently, for reasons we shall set aside here, the Asp-head cannot 'unselectively bind' the bare plural subject. Instead a process of 'existential closure' kicks in, yielding the structure in (122b), which will receive the truth-conditions in (122c).

(122) **[PRV] Aspect Yields Existential Reading of Bare Plurals in English**

- a. Sentence: Yesterday, dogs barked.
- b. Structure: [TP [T T<sub>j</sub> PST ] [ *yesterday* [AspP **PRV**<sub>1</sub> [VP ∃<sub>k</sub> dogs<sub>k</sub> bark ] ...]
- c. Truth-Conditions: [[ (122b) ]]<sup>w, t, g</sup> is only defined if  $g(j) < t$   
When defined, is [[ (122b) ]]<sup>w, t, g</sup> = T *iff*  
 $g(j) \subseteq \text{YESTERDAY}(c_t) \ \& \ \exists e . T(e) \subseteq g(j) \ \&$   
 $\text{bark}(e, w) \ \& \ \exists y . \text{dog}^*(y) \ \& \ \text{Agent}(e, w) = y$

Thus, (122c) is correctly predicted to be true *iff* there is some (particular) plurality of dogs  $y$  such that there was an event of  $y$  barking yesterday.

Finally, given our analysis of simple present sentences like (106), it follows that sentences like (123a) below – where a simple present verb with a bare plural subject scopes below a quantificational adverb – can have the syntax in (123b). Importantly, in this structure the AspP is headed by [PRV]-aspect. Consequently, we correctly predict that in such sentences, the bare plural subject can receive an existential interpretation (123c).

(123) **Existential Reading of Bare Plural with Simple Present and Quantificational Adverb**

- a. Sentence: Every night, dogs bark.  
 b. Structure: [TP [AdvP Every night]<sub>j</sub>] [TP [T  $\emptyset$ ]<sub>j</sub>] [ **PRV**<sub>1</sub> [VP  $\exists$ <sub>k</sub> dogs<sub>k</sub> bark ]...]  
 c. Truth-Conditions:  
 $\forall t'. \text{night}(t') \ \& \ t' \in C_c \rightarrow$   
 $\exists e . T(e) \subseteq t' \ \& \ \text{bark}(e,w) \ \& \ \exists y . \text{dog}^*(y,w) \ \& \ \text{Agent}(e,w) = y$

Thus, we correctly predict that sentence (123a) should receive a reading whereby it states that every night  $t'$  contains an event of some group of dogs barking. More generally, we correctly predict that simple present sentences with bare plural subjects *need not* receive generic interpretations in English, when they lie within the scope of a quantificational adverb. In such structures, the bound T-head may underlyingly not have the [PRS]-tense features, and so the AspP may be headed by [PRV], allowing for a purely existential interpretation of the bare plural subject.

The facts in (123) stand in stark contrast to similar sentences lacking a quantificational adverb. That is, if the quantificational adverb *every night* is removed from (123a), then only the generic interpretation of the resulting sentence is possible (124a).

(124) **Generic Reading (Only) of Bare Plural with Simple Present Alone**

- a. Sentence: Dogs bark.  
 b. Structure: [TP [T<sub>j</sub> PRS ] [ **IMPRV**<sub>HAB, k</sub> [VP [ dogs<sub>k</sub> bark ] ...]  
 c. Truth-Conditions: [[ (124a) ]]<sup>w,t,g</sup> is only defined if  $g(j) = t$   
 When defined, is [[ (124a) ]]<sup>w,t,g</sup> = T *iff*  
 $\forall \langle w', x \rangle . w' \in \text{HABIT}(w, g(j)) \ \& \ \text{dog}^*(x, w', t') .$   
 $\exists e . t' \subseteq T(e) . * \text{bark}(e,w') \ \& \ * \text{Agent}(e,w) = x$

Happily, our general theory of English tense and aspect straightforwardly predicts this contrast. Note that since there is no quantificational adverb binding the T-head in (124a), the present-tense morphology on the main verb entails that the T-head bears the [PRS]-feature. Consequently, the AspP must be headed by [IMPRV], and since the VP is eventive, this must be an instance of [IMPRV<sub>HAB</sub>]. Thus, the bare plural subject *dogs* in (124a) will be ‘unselectively bound’ by [IMPRV<sub>HAB</sub>], and so a present-tense generic interpretation will result.

In summary, our proposals regarding English tense and aspect in (100)-(116) correctly predict that in simple present sentences of English, bare plural subjects should be able to receive existential readings if a quantificational adverb is present (123), but will only receive ‘quasi-universal’ readings if no such adverb is present (124). To my knowledge, this effect has never before been observed or analyzed in prior semantic discussions of English tense, aspect, or bare plurals. Finally, this general prediction crucially relies upon the central claim in (116), that English simple present habituais are syntactically ambiguous, and may underlyingly involve a realization of perfective-aspect [PRV], just like Tlingit habitual perfective-mode sentences.





possible for a verb bearing (plain) imperfective-mode or perfective-mode to lie in the scope of a quantificational adverb, without the habitual-mode morphology also surfacing.

(128) **Quantificational Adverbs Seem to Not Always Trigger Habitual-Mode**

- a. Quantificational Adverb with (Plain) Imperfective Mode:  
 Haa            keidlí **tlákw**            **asháa.**  
 1plPOSS      dog    **always**            **IMPRV.3S.bark**  
*Our dog always barks.* (LA)

- b. Quantificational Adverb with (Plain) Perfective Mode:  
 Shoowaxéexi      taakw,      **ldakát yagiyee**      aḡ      éesh  
 PRV.3S.past.REL year      **every day**            1sgPOSS father  
  
 t'á                      **aawashaat.**  
 king.salmon      3O.PRV.3S.catch  
*The past year, my father caught a king salmon every day.* (IC)

Given the possibility of sentences like (128a,b), one might wonder if the ‘Vocabulary Items’ in (125) should somehow be made optional, so that [T] need not always be ‘Spelled Out’ as habitual morphology when it is quantificationally bound. This move, however, would face problems of its own. Most importantly, it would predict that the sentences in (128a,b) have the same underlying syntax – and thus the same meaning – as corresponding habitual-imperfective and habitual-perfective sentences. Interestingly, this is not the case; sentence (128a) does not have precisely the same meaning as a sentence with habitual imperfective-mode, nor does (128b) have precisely the same meaning as one with habitual perfective-mode.

To see this, let us begin with the imperfective-mode sentence in (128a), and let us recall from (18) in Section 3.2 the core semantic contrast between habitual imperfective-mode and habitual perfective-mode. That is, habitual imperfective-mode places the times of the events described by the VP *throughout* the times quantified by the adverbial, while habitual perfective-mode places the times of those events *just after* the times introduced by the adverbial. With this in mind, let us observe in (129) below that sentences like (128a) exhibit the aspectual character of habitual *perfective-mode* sentences.

(129) **Imperfective-Mode with Quantificational Adverb Behaves Like Habitual Perfective**

- a. *Scenario:* Whenever we visit him, he (then) cooks rice for us (*cf.* (17a), (18a))
- Du      xánt                      wutu.aadí,                      tlákw      áwé      kóox  
 3POSS vicinity.to      PRV.1plS.walk.SUB, always FOC      rice  
  
 haa      x'éis                      **as.ée.**  
 1plPOSS mouth.for      3O.IMPRV.3S.cook.  
*Whenever we go to him, he always cooks rice for us* (IC)

- b. *Scenario:*  
Whenever we visit him, he is always in the middle of cooking rice (*cf.* (17b), (18b))

Du      xánt                  wutu.aadí,                  tlákw áwé      kóox  
3POSS vicinity.to      PRV.1plS.walk.SUB, always FOC      rice

haa      x'éís                  as.ée                  \*(nuch)  
1plPOSS mouth.for      3O.IMPRV.3S.cook.      HAB  
*Whenever we go to him, he is always cooking rice for us.*                  (IC)

As we see above, when a quantificational adverb co-occurs with a verb in the (plain) imperfective-mode, the events described by the VP must occur *just after* the times introduced by the adverb (129a). If those events occur throughout the times introduced by the adverb, then habitual imperfective-mode must instead be used (129b).

The facts in (129) thus suggest that sentences like (128a) may underlyingly have the syntax and semantics of habitual *perfective*-mode sentence, despite the surface appearance of imperfective-mode. Consequently, rather than make the rules in (125) purely optional, it would be more accurate to suppose that rule (125a) is in free-variation with the alternate Vocabulary Item in (130) below, which yields an alternate underlying source for imperfective-mode morphology.

(130) **Vocabulary Item Realizing Imperfective-Mode Morphology in Tlingit** <sup>41</sup>

[ T<sub>j</sub> ] [ PRV ] ⇔ IMPRV<sub>SUF</sub> / T<sub>j</sub> is bound by a quantifier

According to (130), the combination of [T] with [PRV]-mode can together be realized by the imperfective-mode morphology (*i.e.*, the ‘imperfective suffix’), precisely when the T-head is bound by a quantifier. If this rule were allowed to exist in free-variation with (125a), then we would correctly predict both the possibility of sentences like (128a)-(129a), as well as the fact that such sentences appear to have the semantics of habitual perfective-mode sentences.

Next, let us consider sentences like (128b), where a perfective-mode verb lies within the scope of a quantificational adverb. Again, these sentences do not have exactly the same meaning as corresponding sentences with habitual perfective-mode. Most notably, sentences like (128b) can only describe *past* habitualities. As we see in (131a) below – and as our semantics in Section 4 predicts – a habitual perfective-mode sentence can be understood to quantify over times in the past, present, and future. However, as indicated in (128b) and (131b) below, sentences containing quantificational adverbs with perfective-mode can only be understood to quantify over past times.

(131) **Habitual Perfective-Mode vs. Plain Perfective-Mode**

- a. Wé      washéen      koox      oos.eeych.  
DEM machine      rice      3O.HAB.PRV.3S.cook.  
*That machine cooks rice.*                  (C)  
Speaker Comment: “It cooks it all the time” (IC)

<sup>41</sup> We could also imagine that alongside the rule in (130), there exists the rule in (i) below, which yields the more typical ‘imperfective’ semantics for imperfective-mode:

(i) [IMPRV] ⇔ IMPRV<sub>SUF</sub>

- b. Wé washéen koox awsi.ee.  
 DEM machine rice 3O.PRV.3S.cook.  
*That machine cooked rice.* (C)  
Speaker Comment: “It’s done (cooking)” (IC)

Although this is far from ideal, we might capture these facts by again positing an underlying ambiguity in the aspectual inflections of Tlingit. That is, we might suppose that (surface) perfective-mode in Tlingit can result from the Vocabulary Item in (132). This rule will ‘Spell Out’ the combination of [T], [PST], and [PRV] together as ‘perfective-mode’ when the T-head is bound.

(132) **Vocabulary Item Realizing Perfective-Mode Morphology in Tlingit** <sup>42</sup>

[ T<sub>j</sub> PST ][ PRV ] ⇔ / wu- /     /     T<sub>j</sub> is bound by a quantifier

Finally, if we suppose that this rule exists in free-variation with the rules in (125a) and (127), then we predict both the possibility of sentences like (128b), as well as the fact that they appear to have the meaning of *past-tense habitual perfective-mode* sentences.

In summary, the possibility of sentences like those in (128) – where plain imperfective-mode and perfective-mode verbs lie in the scope of a quantificational adverb – raises a challenge for our view in (70)-(72) that habitual-mode morphology is a realization of the T-node, triggered by the presence of a quantificational adverb. Importantly, however, these sentences also raise challenges for our proposed semantics for (im)perfective aspect and quantificational adverbs in Section 4. That is, neither of the sentences in (128) have exactly the meaning that our semantics would predict for sentences where [(IM)PRV] aspect lies within the scope of a quantificational adverb. Consequently, we must suppose that the surface aspectual morphology in (128a,b) has a different underlying morphosyntactic structure than the simple [(IM)PRV]-heads postulated in Section 4. The overall facts can be captured by positing the additional Vocabulary Items in (130) and (132), which are assumed to exist in free-variation with the more basic Vocabulary Items in (125) and (127). Nevertheless, the resulting system is far from elegant, and so the facts in (128)-(131) remain an outstanding challenge for the system developed here.

Finally, it is worth noting in passing that the new Vocabulary Item rule in (130) predicts that – like the habitual perfective-mode – (plain) imperfective-mode can in Tlingit be underlyingly a realization of [PRV] (perfective) aspect. This might actually account for one notable difference between imperfective-mode in Tlingit and imperfective morphology in other languages. Within the Romance languages, it has been widely reported that imperfective aspect cannot be used if the habituality in question is merely ‘accidental’ (Lenci & Bertinetto 2000, Menendez-Benito 2002). Instead, for such ‘merely accidental’ recurrent events, Romance languages require perfective verb forms. Curiously, however, in Tlingit it seems that such purely accidental recurring events *can* be described with imperfective-mode, as long as a quantificational adverb is present (133a). Of course, habitual perfective-mode can also be used for these accidental regularities (133bii), and (plain) perfective-mode can be too (133bi), as long as the regularity occurred strictly in the past.

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<sup>42</sup> Again, we could also imagine that alongside the rule in (132), there exists the rule in (i) below, which yields the more typical ‘perfective’ semantics for perfective-mode:

(i) [PRV] ⇔ / wu- /

Furthermore, this rule above would presumably be (somehow) superceded by rule (125a) in cases where the T-head is quantificationally bound.

(133) **The Description of Purely ‘Accidental’ Regularities in Tlingit**

- a. *Scenario:* Last year, it just so happened to be cold every Sunday.

Tlákw áwé daxadooshu yakyee kúnáx áwé **kusi.áat’in.**  
always FOC seven day very FOC IMPRV.3S.weather.cold.PST  
*It was always cold on Sunday.* (IC)

- b. *Scenario:* Last year, my father was lucky enough to catch a king salmon every day.

(i) Shoowaxéexi taakw, ldakát yagiyee ax éesh  
PRV.3S.past.REL year every day 1sgPOSS father

t’á **aawashaat.**  
king.salmon 3O.PRV.3S.catch  
*The past year, my father caught a king salmon every day.* (IC)

(ii) Shoowaxéexi taakw, ldakát yagiyee ax éesh  
PRV.3S.past.REL year every day 1sgPOSS father

t’á **ooshaatch.**  
king.salmon 3O.HAB.PRV.3S.catch  
*The past year, my father caught a king salmon every day.* (C)

This ability in (133a) for imperfective-mode in Tlingit to describe ‘purely accidental’ regularities is rather unexpected if this morphology is always a realization of the [IMPRV] Aspect, since any ‘habitual’ use of that morphology would involve the modal semantics of [IMPRV<sub>HAB</sub>] (49). However, if imperfective-mode can in some sentences be a realization of [PRV]-aspect, then we expect that it should show some overlap in use with perfective-mode in Tlingit and perfective aspectual forms in other languages. The rule in (130) accomplishes just this, and also correctly limits such semantic overlap to just those sentences where the T-head is quantificationally bound.