Semantics & Pragmatics Volume 15, Article 11, 2022
https://doi.org/10.3765/sp.15.11

Two paths to habituality: The semantics of habitual mode in Tlingit*

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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, realizing imperfective 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 constructions, certain semantic contrasts do exist. Most notably, the special habitual marking 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 observed for habitual morphology 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

* Deepest thanks and gratitude are owed first and foremost to Tlingit elders Lillian Austin (Yax̲dulák̲t), Irene Cadiente (Jigeit Tláa), George Davis (Kaxwaan Éesh), Margaret Dutson (Shak'sháani), Selena Everson (Kaséix̲), William Fawcett (Kóoshdaak'w Éesh), Carolyn Martin (K̲'altseen), and 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.

Special thanks are also owed to Lance Twitchell (X̲'unei), James Crippen (Dzéiwsh), and Keri Eggleston (X̲'aagi Sháawu) for their crucial logistical support of this study. For their helpful comments upon earlier versions of this work, I thank Scott AnderBois, Ana Arregui, Anne Bertrand, Rajesh Bhatt, Henry Davis, Amy Rose Deal, Rose-Marie Déchaine (Kinch'éiyi), Vincent Homer, Larry Hyman, Marianne Huijsmans, Polly Jacobson, Peter Jenks, Sophia Malamud, Lisa Matthewson, Marcin Morzycki, Barbara Partee, Hotze Rullmann, Anne-Michelle Tessier, Neda Todorovic, Judith Tonhauser, Rose Underhill (Shakeex̲'aan), Katia Vostrikova, Ronnie Wilbur, as well as three anonymous reviewers for *Semantics and Pragmatics* and audiences at the University of British Columbia, the University of California at Berkeley, and SALT 31 at Brown University.

This material is based on work supported by the National Science Foundation (award No. BCS-1322770).

possess a modal semantics, quantifying over alternative worlds/situations (Arregui *et al.* 2014, Ferreira 2016). 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. Most notably, we find that (i) "habituality" so-called is potentially a heterogeneous phenomenon, and resists unified definition or semantic analysis, and (ii) therefore is a *sui generis* category of phenomena, which cannot be reduced as an instance of aspect or modality (Filip & Carlson 1997, Filip 2018).

Keywords: habituals, genericity, imperfective, aspect, tense, quantificational adverbs, Tlingit

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 2012).

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.[1]

1 I employ the following glossing abbreviations, based on those originally developed by Crippen (2013): 1, 'first person'; 2, 'second person'; 3, 'third person'; COP, 'copula'; DEM, 'demonstrative'; ERG, 'ergative'; FOC, 'focus'; HAB, 'habitual'; IMPRV, 'imperfective'; Indef, 'indefinite'; INST, 'instrumental'; O, 'object'; PART, 'partitive'; pl (PL) 'plural'; POSS, 'possessive'; PRV, 'perfective'; PST, 'past'; PTCPL, 'participle'; RECIP, 'reciprocal'; REL, 'relative clause'; REP, 'repetitive'; S, 'subject'; sg, 'singular'; SUB, 'subordinate clause'.

(2) a. Tlingit Verb in Imperfective Mode
Ax̲ éeshch t'á **ax̲á**.
1sgPOSS father.ERG king.salmon 3O.**IMPRV**.3S.eat
'My father eats king salmon.' (MD)[2]

b. Tlingit Verb in Habitual Mode
Ax̲ éesh x̲áat **ux̲áaych**.
1sgPOSS father.ERG 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 at least two key questions. First, we should ask what the morphosyntactic and semantic difference is — if any — between the two Tlingit verb forms in (2). Secondly, having developed some answer to this first question, we should seek to determine how either of those verb forms in (2) compare syntactically and/or semantically to the simple English verb form in (1).

This paper will be largely focused upon the former of these two questions, that is, the formal analysis of the Tlingit verb forms in (2).[3] Furthermore, the answers I propose will also themselves touch upon some broader, overarching questions in the semantic study of habituals 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).

(3) **Multiple Expressions of Habituality in Natural Languages**

a. African American English (Green 2000):

i. Bruce **sing**.
'Bruce sings.'

ii. Bruce **be singing**.
'Bruce sings.'

2 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.

3 In the larger research project, of which this present work forms a part, I also engage with the second of these questions (Cable 2020). Space precludes me presenting that material here, however.

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 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 (4), 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 (4a), but not a habitual-mode verb (4b).

(4) *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." (SE)

Importantly, judgments parallel to these have been reported for a diversity of languages, include those listed in (3) (Carlson 2005, 2012).

In order to capture these and a number of other contrasts, Tlingit imperfective-mode sentences ((2a), (4a)) will be argued to have the structure in (5a) 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).

(5) a. General Structure Proposed for Tlingit Imperfective-Mode Habituals:
$[_{TP}$ T $[_{AspP}$ **IMPRV**$_{HAB}$ $[_{VP}$ my father eat salmon $] \ldots]$
b. General Structure Proposed for Tlingit Habitual-Mode Habituals:
$[_{TP}$ **TempQuant**$_j$ $[_{TP}$ **T**$_j$ $[_{AspP}$ ASP $[_{VP}$ my father eat salmon $] \ldots]$

Habitual-mode sentences ((2b),(4b)) however, will be argued to have the structure in (5b). In brief, the special habitual morphology seen in these sentences is the realization of a T(ense)-head, specially triggered when that head is bound by a temporal quantifier (*i.e.*, quantificational adverb). In this sense, Tlingit habitual morphology is a kind of quantificationally dependent tense. Furthermore, as we will see, the rather distinct structure and interpretation of the habitual sentences in (5a) and (5b) has some important consequences for current debates concerning the nature of habituality in natural language. Most notably, "habituality" so-called is *per force* a heterogeneous phenomenon, resisting unified definition or semantic analysis, and therefore constitutes a *sui generis* category of phenomena, one that stands apart from aspect or modality alone (Filip & Carlson 1997, Filip 2018).

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 basic overview of the form and meaning 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, tense, and temporal adverbs, including the proposed semantics for Tlingit imperfective-mode and perfective-mode. We then in Section 5 turn our attention to the habitual morphology of Tlingit. After noting the important relationship between these verbal forms and quantificational adverbs, I develop and defend the analysis of

Tlingit habitual-mode outlined in (5b) above. Following this, I discuss in Section 6 some key theoretical consequences of the proposed account, explain its differences from prior analyses of similar habitual constructions in other languages, and sketch the ways in which it could be extended to those other constructions.

2 Linguistic and methodological background

The Tlingit language (Lingít; /ɬɪn.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, 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 (Dzéiwsh), Lance Twitchell (X̲'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 (Yax̲dulák̲t), Irene Cadiente (Jigeit Tláa), George Davis (Kaxwaan Éesh), Margaret Dutson (Shak'sháani), Selena Everson (Kaséix̲), William Fawcett (Kóosh-daak'w Éesh), Carolyn Martin (K̲'altseen), and 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) imperfective-mode, (ii) perfective-mode, (iii) habitual-mode, (iv) future-mode, and (v) potential-mode. Only the first three of these — the imperfective, perfective, and habitual — will be of key interest to our discussion.[4] 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 may be individually meaningless, and whose order is rigidly specified by a language-particular template of affixal positions (Leer 1991).

Given that the details of these verbs' complex morphophonology is not of direct interest to our discussion here, they will largely be suppressed in the glossing of Tlingit data below. For example, as shown in (6), particular verbs will be glossed simply as "PRV" (perfective) or "IMPRV" (imperfective), even though their surface morphophonological form does not map in an easy one-to-one fashion to those more abstract morphosyntactic categories. Nevertheless, I will note certain phonological hallmarks of these inflectional categories, when relevant. For instance, the category of perfective mode in Tlingit typically triggers the appearance of an underlying prefix *wu-*, the surface effects of which are bold-faced in the sentence below.

(6) A<u>x</u> tláach wé sakwnéin aa**w**a<u>x</u>áa.
1sgPOSS mother-ERG DEM bread 3O.**PRV**.3S.eat
'My mother ate the bread' (MD)

Again, though, it bears mentioning that the gloss for the verb *aawa<u>x</u>áa* in (6) suppresses a great deal of (presently irrelevant) morphosyntactic content.

4 For more information on the future-mode and potential-mode, their form and semantics, see Cable (2017a).

As detailed 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.[5] 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, like perfective aspect across languages, perfective-mode in Tlingit generally plays the role of advancing the narrative (Leer 1991). In summary, then, the meaning of a perfective-mode sentence like (6) can be visually modeled as follows.[6]

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

a. Time of Eating in (6) Lies Within Some Topical Time or State:

← - - - - - [$_{TopicTime}$ - - [eating] - -] - - - SpeechTime - - - - - →

b. Time of Eating in (6) Lies Just After Preceding Event in Narrative:

← - - - - - [$_{TopicEvent}$] - [eating] - - - - - - SpeechTime - - - - - →

In contrast to the perfective-mode, the morphophonological realization of imperfective-mode is generally quite simple. There is no dedicated aspectual prefix associated with it; indeed, it is generally the absence of those prefixes (plus a particular stem form) that signals the appearance of imperfective-mode (8a). For stative predicates, however, imperfective-mode does also require the appearance of a particular "stative" prefix, the surface effects of which are boldfaced in (8b).[7]

(8) a. Eventive/Dynamic Verb in Imperfective-Mode

Ax éesh káaxwee adaná.
1sgPOSS father coffee 3O.**IMPRV**.3S.drink
'My father drinks coffee. / My father is drinking coffee.' (MD)

5 The temporal effects of perfective-mode in subordinate clauses are a more complicated matter, just as they are for perfective aspect in most languages (Leer 1991).

6 As documented by Cable (2017b), the perfective mode of Tlingit also seems to allow an interpretation more akin to a perfect or resultative, which places a topical time/event within the result state of the event described. For purposes of our discussion here, I set aside this secondary interpretation of the perfective mode.

7 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-day speakers of the language.

b. Stative Verb in Imperfective Mode

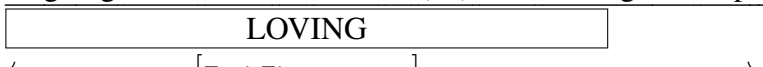
Ax tláach asixán ax éesh.
1sgPOSS mother.ERG 3O.**IMPRV**.3S.love 1sgPOSS father
'My mother loves my father.' (LA)

Regarding the meaning of imperfective-mode, again the label "imperfective" is quite apt. As documented by Leer (1991), imperfective-mode exhibits all the characteristics found for imperfective aspect across languages. Regarding its temporal effects, imperfective-mode can be used to describe events/states holding either in the past or at present.[8] 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* use 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 holds throughout a topical interval of time, a usage sometimes referred to as *Ongoing Event*. Secondly, and most importantly, eventive verbs bearing imperfective-mode can be interpreted to mean that there held throughout a 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* use of imperfective.[9]

We will return later to the question of whether these three usages should be viewed as distinct readings of the imperfective morphology. For the moment, however, we can visually represent these three usages via diagrams like those in (9) below.

(9) **Topographical Picture of the Meaning of Tlingit Imperfective-Mode**

a. Ongoing State: Time of State in (8b) Lies Throughout Topical Time:



b. Ongoing Event: Time of Event in (8a) Lies Throughout Topical Time:

8 To describe a future event/state, either the future-mode or the potential-mode must be used (Cable 2017a, 2019).

9 As seems to be common cross-linguistically, this Habitual construal of imperfective-mode is not possible for Tlingit verbs in perfective-mode. However, as noted by an anonymous reviewer, it is possible for perfective verbs in many West Slavic languages to also receive Habitual construals, a key puzzle for our general theory of habitual semantics.

c. Habitual: Throughout Topical Time There is a Habit of Events in (8a)

HABIT-OF-DRINKING

←- - - - - - - - [*TopicTime* - - - - -] - - - - - - - - - - - - - - - →

3.2 The habitual mode(s) of Tlingit

Although I have until now been employing 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, dubbed (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) 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 put aside future habituals in this paper. 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*.

The habitual perfective-mode of a verb is realized via the combination of certain conjugation-class morphemes with a dedicated habitual suffix *-ch*, boldfaced in (10) below.

(10) Ax̲ tláa x'úx' anahún**ch**
1sgPOSS mother book 3O.**HAB.PRV**.3S.sell
'My mother sells books.' (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*.[10] Compare, for example, the habitual perfective-mode for *hun* 'sell' in (10) with the habitual imperfective mode form in (11) below.

(11) Ax̲ tláa x'úx' ahóon **nooch.**
1sgPOSS mother book 3O.**IMPRV**.3S.sell **HAB**
'My mother sells books.'
(Or, 'My mother is often/always/regularly selling books') (LA)

The existence of these two subtypes of habitual forms 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

10 Etymologically, this habitual particle originates from the verb *nuk* 'do' in the habitual perfective-mode.

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 (9c).[11, 12, 13] Unlike imperfective verbs, however, habitual-marked verbs do not allow for either of the other two usages in (9a,b). That is, habitual-mode verbs cannot be used to describe ongoing events (12), nor can they be used to describe ongoing states (13).[14]

(12) 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)[15]

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)

11 Importantly, I will not attempt to offer here a general definition of what constitutes a "habitual construal" or a "habitual construction" — such as that put forth by Krifka *et al.* (1995) — for reasons that will be detailed in Section 6.1.

12 An anonymous reviewer asks whether verbs bearing habitual-mode morphology are stative. Unfortunately, there are not presently known to be any grammatical tests for diagnosing (derived) stativity in the language. Although the reviewer notes that temporal modifiers denoting precise intervals of time (e.g., *at 4PM*) are generally incompatible with so-called "I-level" statives (e.g. ?? *Dave was tall at 4PM*), the analysis put forth in Section 5 will also predict the incompatibility of habitual-marked Tlingit verbs with such modifiers, without necessarily analyzing those predicates as stative.

13 An anonymous reviewer asks whether verbs bearing habitual-mode morphology can express both exceptionless generalizations like *Water flows downhill* and exception-laden generalizations like *Sharks attack swimmers*. I would submit that the sentences below illustrate that both are indeed possible.

(1) a. Gagaanch ulléich wé t'éex'
sun.INST **HAB.PRV**.3S.melt DEM ice
'Ice melts in the sun' (*i.e.*, 'Ice melts with/from the sun.') (SE)

b. Taan yaakw át jidagútch.
sea.lion boat 3O **HAB.PRV**.3S.attack
'Sea lions attack boats' (MD)

14 Sentences (12b) and (13b) contain verbs in the habitual imperfective-mode; the same judgments hold for sentences in the habitual perfective-mode.

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

(13) a. Ax̲ éesh asix̲án ax̲ tláa.
1sgPOSS father 3O.**IMPRV**.3S.love 1sgPOSS mother
'My father loves my mother.' (SE)

b. (#)Ax̲ éesh ax̲ tláa asix̲án nooch
1sgPOSS father 1sgPOSS mother 3O.**IMPRV**.3S.love **HAB**
'My father often/always/regularly loves my mother.' (C)
Speaker Comment: "[(13b)] means my dad loves my mom occasionally or intermittently." (JM)

It is also important to note here the general infelicity of sentences like (13b), where an (I-level) stative predicate bears habitual-mode morphology, as well as the reported judgment that such sentences imply that the state in question held and then ceased on multiple occasions.

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 (14).

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

Both the sentences in (14) 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 (14a) places the singing-times *at* or *just after* the arrival-times, while (14b) places the singing-times *throughout* or *surrounding* the arrival-times. We can visually represent these contrasting meanings via the diagrams in (15) below.

(15) **Topographical Picture of the Meanings of Sentences (14a,b)**

a. Sentence (14a): The (recurring) singing-times follow the arrival times
← - - - - - - -[arrival] - [SINGING] - - - - - - - - - - - →

b. Sentence (14b): The (recurring) singing-times surround the arrival times
SINGING
← - - - - - - -[arrival] - →

Importantly, this same contrast can be signaled in Tlingit via the subtype of habitual mode (Leer 1991). As shown below, the meaning of sentence (14a) is conveyed in

Tlingit via habitual perfective, while that of (14b) is conveyed via habitual imperfective.[16]

(16) **The Contrast Between Habitual Perfective and Habitual Imperfective**

a. *Scenario:* Whenever we arrive at his house, he then sings for us (15a).
Tlákw du xánt wutu.ádi, yak'éiyi
always 3POSS vicinity.to PRV.1plS.walk.SUB IMPRV.3S.good.REL
shí áwé du x'éidáx daak **us.áxch.**
song FOC 3POSS mouth.from out 3O.**HAB.PRV**.3S.sing
'Whenever we come to him, he sings out a good song.' (JM)

b. *Scenario:* Whenever we see him, he's in the middle of singing (15b).
Wutusateení, ch'a tlákw at **shée** **nooch**.
PRV.1plS.see.SUB just always IndefO **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 (16), 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 construal of the latter, while the latter also possesses the Ongoing-State/Event interpretations.

However, despite the broad overlap in their uses, there is one significant difference in meaning between the Tlingit imperfective-mode and the habitual perfective-mode. 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*.

16 It is indeed this general contrast that motivates Leer (1991) to introduce the labels "*perfective* habitual" and "*imperfective* habitual" for these forms, and our later semantic analysis will also vindicate this choice of terminology.

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 (17a,b) below. Furthermore, as shown under (17), it is possible in English to describe such non-actualized capacities / functions / occupations using simple-present habituals like that in (1).

(17) a. i. 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 the coffee made by this model is great.

ii. *Sentence:* This coffee machine **makes** great coffee.

b. i. 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.**

ii. *Sentence:* My dad **works** for the school now.

Furthermore, as we see in (18) below, such non-actualized habitualities can in Tlingit be described using imperfective-mode.

(18) a. Scenario (17a):
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 (17b):
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 (19), these non-actualized habitualities cannot in Tlingit be described using the habitual perfective-mode.

(19) a. Scenario (17a):
(#)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 (C)
Speaker Comment: "No. That means that you've used it." (SE)

b. Scenario (17b):
(#)Ax̲ 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.

(20) 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
DEM ancient PART just still well sweet.REL
al.úkx̲
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
DEM ancient PART just still well sweet.REL
ool.úkch
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 (so-called) "habitual" constructions (Carlson 2005, 2012). As illustrated below, in these languages, use of the more morphosyntactically complex, specifically habitual construction requires that the habituality have been actualized, while non-actualized habitualities are described with a simpler, unmarked (and imperfective-like) form.

(21) **African-American English: Simple Verbs *vs.* "Habitual *Be*" (Green 2000)**

a. 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.

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

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

a. 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.

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

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

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

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

In addition, it is also worth noting a further parallel between these habitual constructions and the Tlingit habitual-mode(s): like the judgment for (13b), the constructions in (21) and (22) are reported to be infelicitous with (I-level) stative predicates, and/or to imply that the state in question held and ceased on multiple occasions (Green 2000, Boneh & Doron 2000).

Given the existence of this pattern across a diversity of unrelated languages, we should obviously seek a principled explanation for the contrasts in (18)-(20), one that could potentially be extended to the parallel facts in (21)-(23). 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 (19)-(20) are in the habitual perfective-mode. Curiously, habitual imperfective-mode does not seem to exhibit this same effect. That is, 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.[17]

(24) 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 (24), then, it appears that the contrast in (18)-(19) between Tlingit imperfective and habitual perfective is not due to the habitual morphology per

17 As noted above, however, habitual imperfective-mode is still reported to be anomalous with I-level statives, and to imply that the state holds and ceases over multiple occasions (13b).

se, but rather the interaction between that morphology and the aspectual character of those habitual forms. That is, we should 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 actuality entailment in exactly the habitual perfective forms. Finally, we should also seek to understand how those proposals could be applied to capture the parallel facts from other languages (21)-(23) — even though those languages (unlike Tlingit) are not reported to exhibit aspectual sub-types of their habitual forms — as well as how these facts connect with the reported interactions with (I-level) stative predicates.

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 semantic 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.[18]

(25) $[\![\text{XP}]\!]^{w,t,g,c} =_{def}$
Denotation of XP at world w, time t, variable assignment g, context c

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 ε), which is a separate class of objects comprising both events and states.

18 The contextual parameter c will often be omitted when it is not relevant to the denotation.

To present the major ideas regarding aspect and tense, I will walk the reader through the interpretation of three illustrative sentences of Tlingit. Sentences (26a,b) will illustrate the interpretation of eventive predicates with perfective and imperfective aspect, while sentence (26c) will illustrate the interpretation of a stative predicate with imperfective aspect.

(26) a. Ax̲ tláach sakwnéin aawax̲áa tatgé.
1sgPOSS mother-ERG bread 3O.**PRV**.3S.eat yesterday
'My mother ate bread yesterday.' (C)

b. Ax̲ tláach sakwnéin ax̲á.
1sgPOSS mother-ERG bread 3O.**IMPRV**.3S.eat
'My mother is eating bread.' / 'My mother eats bread.' (C)

c. Ax̲ tláach ax̲ éesh asix̲án
1sgPOSS mother-ERG 1sgPOSS father 3O.**IMPRV**.3S.love
'My mother loves my father.' (C)

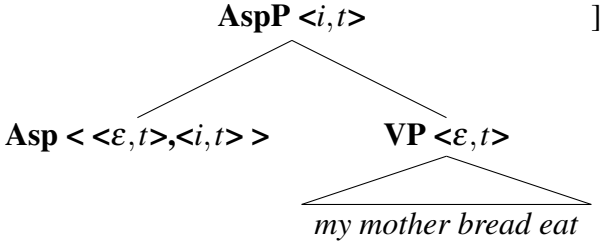
I assume that Tlingit sentences like these possess a syntactic structure whereby the verb and its direct arguments form a constituent together (VP), to the exclusion of any aspectual morphosyntax. These VPs are assumed to denote predicates of eventualities. Thus, the sentences in (26a,b) contain the VP in (27a) below, while sentence (26c) contains the VP in (27b).

(27) a. Interpretation of VP in Sentences (26a,b):
$[\![[_{VP}$ ax̲ tláa $[_{VP}$ sakwnéin $[_{V}$ x̲a]]] $]\!]^{w,t,g}$ =
$[\![[_{VP}$ my mother $[_{VP}$ bread $[_{V}$ eat]]] $]\!]^{w,t,g}$ =
$[\lambda e$: eat(e,w) & Agent(e,w) = my mother & $\exists y$. bread(y,w) & Theme$(e,w) = y$]

b. Interpretation of VP in Sentences (26c):
$[\![[_{VP}$ ax̲ tláa $[_{VP}$ ax̲ éesh $[_{V}$ s-x̲an]]] $]\!]^{w,t,g}$ =
$[\![[_{VP}$ my mother $[_{VP}$ my father $[_{V}$ love]]] $]\!]^{w,t,g}$ =
$[\lambda e$: love(e,w) & Exp(e,w) = my mother & Theme(e,w) = my father]

Next, as illustrated in (28), the aspectual morphosyntax associated with the pronounced verb form combines with this VP constituent, forming an *Aspectual Phrase* (AspP).

(28)



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.[19] To capture the first sort of usage, I assume that PRV can receive the denotation in (29a) below.

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

a. PRV Places Eventuality-Time Within Topical Time Interval:
$[\![\text{PRV}_1]\!]^{w,t,g} = [\ \lambda P_{<\varepsilon,t>} :\ [\ \lambda t' :\ \exists e\ .\ P(e)\ \&\ T(e) \subset t'\ ]\ ]$

b. PRV Places Eventuality-Time Just After Topical Time Interval:
$[\![\text{PRV}_2]\!]^{w,t,g} = [\ \lambda P_{<\varepsilon,t>} :\ [\ \lambda t' :\ \exists e\ .\ P(e)\ \&\ t' \bowtie T(e)\ ]\ ]$

Under the semantics in (29a), [PRV] denotes a function mapping a predicate of eventualities P 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 (29b). According to that entry, [PRV] denotes a function that maps a predicate of eventualities P to a predicate that holds of times that are immediately followed ("$\bowtie$") by the time of a P-eventuality.

Of course, this analysis in (29) suffers from a glaring weakness: the [PRV]-head is treated here as lexically ambiguous. Ideally, though, we should instead seek to derive both the observed usages of [PRV] from a single, unified meaning. 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 (29), and put aside the difficult question of what controls the exact reading that [PRV] receives.

Putting these ingredients together, we assume that sentence (26a) contains the AspP in (30a) below, which can be interpreted as denoting the predicate of times in (30b). That predicate of times holds of a temporal interval *iff* it contains the time of an event of the speaker's mother eating bread.

(30) a. $[_{AspP}$ **PRV**$_1$ $[_{VP}$ a<u>x</u> tláa $[_{VP}$ sakwnéin $[_{V}$ <u>x</u>a]]]]

19 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].

b. $[\![$ (30a) $]\!]^{w,t,g}$ =
$[\ \lambda t' :\ \exists e\ .\ T(e) \subset t'$ & eat(e,w) & Agent(e,w) = my mother & $\exists y$. bread(y,w) & 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 (31), where they are predicates of times falling within the day prior to the time of speech.

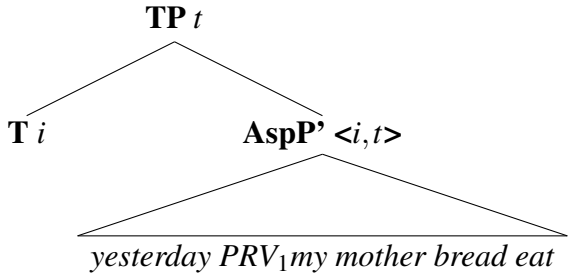
(31) $[\![$ *yesterday / tatgé* $]\!]^{w,t,g,c} = [\ \lambda t' :\ t' \subseteq \text{YESTERDAY}(c_t)\ ]$

We thus assume that sentences like (26a) contain the modified AspP in (32a) below, which will end up denoting the predicate of times in (32b).

(32) a. $[_{AspP'}$ **tatgé** $[_{AspP}$ PRV$_1$ $[_{VP}$ a<u>x</u> tláa $[_{VP}$ sakwnéin $[_{V}$ <u>x</u>a $]\ ]\ ]\ ]\ ]$
b. $[\![$ (32a) $]\!]^{w,t,g}$ =
$[\ \lambda t' :\ t' \subseteq$ **YESTERDAY**(c_t) & $\exists e\ .\ T(e) \subset t'$ & eat(e,w) & Agent(e,w) = my mother & $\exists y$. bread(y,w) & 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* (TP). Thus, the following syntactic tree represents the (more-or-less) complete structure of the Tlingit sentence in (26a).

(33)



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

(34) **Pronominal Semantics for T(ense)-Heads:** $[\![\ \text{T}_j\ ]\!]^{w,t,g} = g(j)$

With all these ingredients in place, sentence (26a) is predicted to receive the truth-conditions in (35) below. Thus, (26a) will be true *iff* the topical time interval $g(j)$ is contained with the day preceding the day of speech, and itself contains an event of the speaker's mother eating bread.

(35) $[\![[_{TP}\ \mathrm{T}_j\ [_{AspP'}$ tatgé $[_{AspP}\ \mathrm{PRV}_1\ [_{VP}$ a<u>x</u> tláa sakwnéin <u>x</u>a $]\ \ldots]\ ]\!]^{w,t,g} = \mathrm{T}$ *iff*

$g(j) \subseteq \mathrm{YESTERDAY}(c_t)$ & $\exists e\ .\ T(e) \subset g(j)$ &
$\mathrm{eat}(e,w)$ & $\mathrm{Agent}(e,w) =$ my mother & $\exists y\ .\ \mathrm{bread}(y,w)$ & $\mathrm{Theme}(e,w) = y$

As the structure above indicates, despite the label "Tense", the T-head need not bear traditional tense features, such as *past* or *present*. Indeed, like in many languages, tense-marking is not obligatory in Tlingit; when such marking does not appear, I assume that the T-head simply lacks any tense features (cf. Matthewson 2006).[20] However, in cases where tense marking does appear, 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 (36) 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].

(36) **Presuppositional Semantics for Past Tense Feature**
$[\![[_T\ \mathrm{T}_j\ \mathrm{PST}\ ]\ ]\!]^{w,t,g} =$ $\quad g(j)$, but only if $g(j) < t$ $\quad$ (undefined otherwise)

Thus, a past-tense and perfective-aspect sentence, such as the Russian one in (37a), is assumed to have the syntactic structure in (37b), and therefore will receive the interpretation in (37c).

(37) a. Anja **ubrala** kvartiru včera.
Anna **clean.PRV.PST** apartment yesterday
'Anna cleaned up the apartment yesterday.' (Altshuler 2014)

b. <u>Assumed Syntax:</u>
$[_{TP}\ [_T\ \mathrm{T}_j\ \mathrm{PST}\ ]\ [_{AspP}\ \mathrm{PRV}_1\ [_{VP}$ *Anna clean apartment* $]\ ]\ ]$

c. <u>Predicted Truth-Conditions:</u>
$[\![$ (37b) $]\!]^{w,t,g}$ is defined only if $g(j) < t$; when defined, is T *iff*
$\exists e.\ T(e) \subset g(j)$ & $\mathrm{clean}(e,w)$ & $\mathrm{Ag}(e,w) =$ Anna & $\mathrm{Thm}(e,w) =$ the.apartment

20 I therefore depart here from the analysis put forth by Cable (2017b), which holds that such sentences contain a T-head bearing a *Non-Future* tense-feature. Following Bochnak (2016), I assume that the facts which allegedly motivate the presence of this Non-Future tense-feature in Tlingit receive a pragmatic (rather than semantic) account.

Turning now to imperfective aspect, we observed in Section 3.1 that there are three principle usages this aspect receives, 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 semantics for [IMPRV] (Deo 2009, Arregui *et al.* 2014, Ferreira 2016). 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 such unification, I will in this paper adopt the simplifying assumption that, as with [PRV] (29), there are two formal semantic entries for [IMPRV]. In essence, then, there are two distinct "flavors" of [IMPRV]. The first we might label [IMPRV$_{OG}$], for "Ongoing". As defined in (38) below, this meaning would cover both the Ongoing State and Ongoing Event construal of imperfective.

(38) **The "Ongoing" Imperfective Head [IMPRV$_{OG}$]**
$[\![\text{IMPRV}_{OG}]\!]^{w,t,g} = \quad [\, \lambda P_{<\varepsilon,t>} :\ [\, \lambda t' :\ \exists e.\, P(e)\ \&\ t' \subseteq T(e)\,]\,]$

Under (38), the denotation of [IMPRV$_{OG}$] maps a predicate of eventualities (events or states) P to a predicate that holds of a time *iff* that time is contained within the time of a P-eventuality.[21]

With (38) in hand, we can analyze the sentences in (26b,c) as potentially containing the AspPs in (39a,b) below, both of which are headed by [IMPRV$_{OG}$].

(39) a. AspP of Sentence (26b):
$[\![\, [_{AspP}\ \textbf{IMPRV}_{OG}\ [_{VP}\ \text{my mother bread eat}\ ]\ ]\,]\!]^{w,t,g} =$
$[\, \lambda t' :\ \exists e.\, t' \subseteq T(e)\ \&\ \text{eat}(e,w)\ \&$
$\text{Agent}(e,w) = \text{my mother}\ \&\ \exists y\ .\ \text{bread}(y,w)\ \&\ \text{Theme}(e,w) = y\,]$

b. AspP of Sentence (26c):
$[\![\, [_{AspP}\ \textbf{IMPRV}_{OG}\ [_{VP}\ \text{my mother my father love}\ ]\ ]\,]\!]^{w,t,g} =$
$[\, \lambda t' :\ \exists e.\, t' \subseteq T(e)\ \&\ \text{love}(e,w)\ \&$
$\text{Exp}(e,w) = \text{my mother}\ \&\ \text{Theme}(e,w) = \text{my father}\,]$

Both these AspPs denote predicates that hold of a temporal interval *iff* that interval is contained within the time of some eventuality; in (39a), that eventuality is an event of my mother eating bread, while in (39b), it is 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.

21 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, Ferreira 2016). Again, for purposes of simplicity, I will abstract away from that additional complexity.

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 2012, Arregui *et al.* 2014, Ferreira 2016). 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 (Boneh & Doron 2008, 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 from these informal metaphysical notions towards a formal semantics, let us introduce the modal relation *HABIT* in (40) below.

(40) $\text{HABIT}(w,t) =_{def} \quad \{\ w' :$ the habitualities in w at t 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. Next, let us suppose that alongside $[\text{IMPRV}_{OG}]$, there exists a second flavor of imperfective, $[\text{IMPRV}_{HAB}]$, whose denotation below incorporates the HABIT relation in (40).

(41) **The "Habitual" Imperfective Head** $[\textbf{IMPRV}_{HAB}]$
$[\![\ \text{IMPRV}_{HAB}\ ]\!]^{w,t,g} =$
$[\ \lambda P_{<s,<\varepsilon,t>>} :\ [\ \lambda t' :\ \forall w' \in \text{HABIT}(w,t')\ .\ \exists e\ .\ P^*(w')(e)\ \&\ t' \subseteq T(e)\ ]\ ]$

According to (41), the denotation of $[\text{IMPRV}_{HAB}]$ maps a property of eventualities P to a predicate of times, one that holds of t' if every world w' in $\text{HABIT}(w,t')$ is one where t' is contained within a *plurality* of P-eventualities.[22,23] Recalling the

22 As noted by an anonymous reviewer, it remains highly controversial whether the modal quantification at play in the Habitual construal of an imperfective is *universal* or *existential* in force. Here, I follow Greenberg (2007) in the view that the modal force is universal, and that the well-known puzzles involving "tolerance to counterexamples" result from a vague contextual restrictor.

23 As noted by an anonymous reviewer, the notion that the Habitual construal of imperfective involves quantification over *pluralities* of events receives extensive defense and development in the work of Ferreira (2016). My own implementation here of this key idea is relatively crude, however, and does

definition in (40), this means that [IMPRV$_{HAB}$] requires the topical time t' to be contained within a plurality of *P*-eventualities, in every possible world where the habitualities of w (at t') are actualized.

To further illustrate this, let us consider sentence (26b) under its Habitual interpretation (i.e., "my mother eats bread"). According to the present proposals, to receive this reading, sentence (26b) would have the structure in (42a), and therefore the truth-conditions in (42b).[24]

(42) a. $[_{TP}\ \text{T}_j\ [_{AspP}\ \text{IMPRV}_{HAB}\ [_{VP}\ \text{my mother bread eat}\ ]\ ]\ ]$

b. $[\![(42a)]\!]^{w,t,g} = \text{T}$ *iff*
$\forall w' \in \text{HABIT}(w, g(j))\ .\ \exists e\ .\ g(j) \subseteq T(e)\ \&\ {}^{*}\text{eat}(e, w')\ \&$
${}^{*}\text{Agent}(e, w') = \text{my mother}\ \&\ \exists y.\ \text{bread}(y, w')\ \&\ {}^{*}\text{Theme}(e, w') = y$

According to (42b), structure (42a) 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 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 *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 2012, Arregui *et al.* 2014, Ferreira 2016), and so it will suffice for our general purposes in this paper. 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 (18), that habitualities described via imperfective-mode in Tlingit need not be actualized in the real world. Note that the truth-conditions in (42b) only require that there be events of my mother eating bread in those worlds w' where the habitualities in w are actualized. But, the real world w need not itself be such a world. Thus, our analysis correctly predicts that (42a) 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 (18a,b) in their associated contexts. Of course, our semantics also predicts that [IMPRV$_{HAB}$] should be perfectly possible when w is in fact a member of HABIT$(w, g(j))$, and so we also correctly predict the felicity of sentences like (20a) in their associated contexts.

not achieve the full results of Ferreira's, such as the "same-participant-effect" discussed in Footnote 30.

24 The observant reader may observe that to semantically combine [IMPRV$_{HAB}$] (type $<<s,<\varepsilon,t>>,<i,t>>$) with the VP (type $<\varepsilon,t>$), we would need to employ a rule like von Fintel & Heim's (2021) "Intensional Function Application".

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 ((4), (19)). The remainder of this paper will be devoted to that question, and the semantics of Tlingit habitual morphology more generally.

4.2 The syntax and semantics of quantificational adverbs

As previewed in Section 1, I will ultimately 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 regarding the semantics of these expressions.

To begin, since I will be illustrating these notions using English, it is important to introduce here an important 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 (43a) can receive the morphosyntactic parse in (43b), and thus the interpretation in (43c) below.

(43) a. Sentence: My mother ate bread yesterday.

b. Structure:
$[_{TP}\ [_{T}\ \mathrm{T}_j\ \mathrm{PST}\ ]\ [\ \textit{yesterday}\ [_{AspP}\ \mathrm{PRV}_1\ [_{VP}\ \textit{my mother eat bread}\ ]\ \ldots]$

c. Truth-Conditions: $[\![\ (43b)\ ]\!]^{w,t,g}$ is only defined if $g(j) < t$
When defined, $[\![\ (43b)\ ]\!]^{w,t,g}$ = T *iff*
$g(j) \subseteq \mathrm{YESTERDAY}(c_t)$ & $\exists e\ .\ T(e) \subset g(j)$ & $\mathrm{eat}(e,w)$ &
$\mathrm{Agent}(e,w)$ = my mother & $\exists y\ .\ \mathrm{bread}(y,w)$ & $\mathrm{Theme}(e,w) = y$

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 (44a) below, where the sentence contains a (temporal) quantificational adverb (*every Tuesday*)?

(44) a. Sentence: My mother ate bread **every Tuesday**.

b. Desired Truth-Conditions:
$\forall t'.\ \mathrm{Tuesday}(t')\ \&\ t' < t\ \&\ t' \in C_c \rightarrow \exists e\ .\ T(e) \subset t'\ \&\ \mathrm{eat}(e,w)\ \&$
$\mathrm{Agent}(e,w)$ = my mother & $\exists y\ .\ \mathrm{bread}(y,w)$ & $\mathrm{Theme}(e,w) = y$

Let us note that sentence (44a) seems to have the truth-conditions in (44b), which state that for every time interval t', if t' constitutes a Tuesday and precedes the

speech time t (and is a member of the contextually-determined restriction C_c), then t' contains an event of my mother eating bread.[25] In other words, (44a) is true *iff* every (contextually relevant) Tuesday in the past contains an event of my mother eating bread.

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

(45) $[\![\textit{every Tuesday}]\!] = [\ \lambda P_{<i,t>}:\ \forall t'.\ \text{Tuesday}(t')\ \&\ t' \in C_c \rightarrow P(t')\ ]$

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 (44a) is understood as 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. To illustrate, the possessive DP in (46a) triggers the presupposition that the referent of the pronoun has a sister. However, as shown in (46b), 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 (46bi) as quantifying only over those individuals that have sisters. This phenomenon is generally viewed as falling within the broader category of local presupposition accommodation (Sudo 2012).

(46) a. Presuppositions of Possessive DPs in English:
$[\![\textit{their}_i\ \textit{sister}]\!]^{w,t,g}$ is only defined if $g(j)$ **has a sister**
When defined, $[\![\textit{their}_i\ \textit{sister}]\!]^{w,t,g}$ = the unique y s.t. y is sister to $g(j)$

b. Local Accommodation to Restrictor of Quantifier:

i. *Sentence:* Everyone$_i$ loves their$_i$ sister

ii. *Truth-Conditions:*
$\forall x$. x is a person & **x has a sister** $\rightarrow$ x loves x's sister

Given our pronominal semantics for T-heads (34) and our presuppositional semantics for tense-features (36), we can capture the additional past-restriction in

25 The requirement that t' be a member of C_c, a contextually-determined class of times, is needed to prevent sentence (44a) 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.*

(44a,b) as a similar instance of local accommodation. Following Heim (1994), we assume that temporal quantificational adverbs bind the T-head. Thus, sentence (44a) has the structure in (47a) below.[26]

(47) a. Structure (44a):
$[_{TP}$ [*every Tuesday*]$_j$ [$[_T$ T$_j$ **PST**] [PRV$_1$ $[_{VP}$ *my mom eat bread*]$\dots$]

b. Predicted Truth-Conditions (Via Local Accommodation (46)):
$\forall t'$. Tuesday(t') & $t' \in C_c$ & $\mathbf{t' < t} \rightarrow \exists e$. $T(e) \subset t'$ & eat(e, w) & Agent(e, w) = my mother & $\exists y$. bread(y, w) & Theme(e, w) = y

Under our semantics for [PST] in (36a), the T-head in (47a) triggers the presupposition that its denotation precedes the speech time t. Thus, by the process outlined in (46), 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 (47b).

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

(48) a. $[\![always]\!]^{w,t,g,c} = [\ \lambda P_{<i,t>} :\ \ \forall t'.\ t' \in C_c \rightarrow P(t')\ ]$

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

According to (48a), 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 (48b) 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'. The reader is invited to confirm that, when combined with the structural assumptions in (47), the lexical entries in (48) predict accurate truth-conditions for English sentences like '*My mother always / sometimes ate bread*.'

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

(49) 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.

26 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.

(50) $[\![$*always when my father made dinner*$]\!]^{w,t,g,c}$ =
$[\![$*whenever my father made dinner*$]\!]^{w,t,g,c}$ =
$[\ \lambda P_{<i,t>}\colon\ \forall t'.\ t' \in C_c\ \&\ \exists e.\ T(e) = t'\ \&$ make.dinner$(e,w)\ \&$
Agent(e,w) = my father $\rightarrow P(t')\ ]$

As shown above, the complex adverbials *always when my father made dinner* and *whenever my father made dinner* are assumed to be semantically equivalent. Both denote a type-$< it,t >$ function that takes as argument a predicate of times P, and yields 'true' *iff* P holds of every time t' (in C_c) that is the time of an event of my father making dinner. Thus, under this approach, sentences (49a,b) receive the syntactic analysis in (51a) and the truth-conditions in (51b).

(51) a. Structure of Sentences (49a,b):
$[_{TP}\ [$ *always / whenever my father made dinner* $]_j$
$[_{TP}\ [_T\ \mathrm{T}_j\ \mathrm{PST}\ ]\ [_{AspP}\ \mathbf{PRV}_2\ [_{VP}$ *my mother eat bread* $]\ldots]$

b. Predicted Truth-Conditions of (49a,b):
$\forall t'.\ t' \in C_c\ \&\ t' < t\ \&\ \exists e.\ T(e) = t'\ \&$ make.dinner$(e)\ \&$
Ag(e) = my father $\rightarrow \exists e'.\ t' \bowtie T(e')\ \&$ eat$(e',w)\ \&$
Ag(e',w) = my mother $\&\ \exists y$. bread$(y,w)\ \&$ Theme$(e',w) = y$

According to the semantics in (51b), sentences (49a,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 ($\bowtie$) by the time of an event of my mother eating bread. The reader will note that to obtain such truth-conditions for (49a,b), we must assume that the perfective aspect within the main clause is an instance of $[\mathrm{PRV}_2]$ (29b). 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_1 or PRV_2).

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 (52a,b) below.

(52) 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 (52a,b), Person 2 is understood as stating that Dave baked a pie *every Tuesday*.

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 (53a) below. Note that even though no adverb overtly appears, Person 2's response in (53aii) is naturally construed as being restricted to "this Tuesday".

(53) 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**]$_i$ walked in from the right hand of the stage.
ii. **He**$_i$ took **his**$_i$ diploma from the Dean and returned to **his**$_i$ seat.

However, a more promising line of analysis may instead be to view discourses like those in (52) as involving so-called "telescoping" phenomena, of the kind illustrated in (53b). That is, one may wish to say that in (52), the T-head of sentences (52aii)-(52bii) is somehow bound by a quantificational expression in the preceding sentences (52ai)-(52bi). Importantly, exactly such configurations can seem to occur with nominal quantification in discourses like (53b), a phenomenon commonly referred to as "telescoping".

Rather than develop either of these lines of approach, however, I will instead assume as a stop-gap that sentences like (52aii) can contain an unspoken (or elided) quantificational adverb. That is, I will provisionally assume that the syntax of (52aii) is akin to (54) below.

(54) $[_{TP}$ ~~[*every Tuesday*]$_j$~~ [[T$_j$ PST] $[_{AspP}$ PRV$_1$ $[_{VP}$ *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 to mention here 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 are often rather anomalous with I-level stative predicates (de Swart 1993, Fernald 2000). 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.

(55) 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 (52), it will be beyond the scope of this paper to settle upon a particular account of this effect. However, it is worth noting briefly that both de Swart (1993) and Fernald (2000) attribute these facts to a special *Plurality Condition* governing temporal quantificational adverbs. In brief, this condition states that such adverbs presuppose that both their scope and their restriction are satisfied by multiple (maximal) eventualities. As a result, a sentence like (55a) would presuppose the existence of multiple, non-overlapping states of my father loving my mother. Again, I leave aside here whether this Plurality Condition is truly accurate or sufficient to capture the phenomenon in (55). All that's crucial for our subsequent discussion is simply that the modification of stative predicates by quantificational adverbs implies that the state in question holds intermittently, and thus is generally anomalous when the stative in question is I-level.[27]

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 modes. 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.

27 One reviewer does not find the sentences in (55a,b,c) to be very anomalous, because they are comfortable imagining scenarios where love can hold intermittently between individuals. Consequently, they object to my statement here that I-level statives are "generally anomalous" with temporal quantificational adverbs. Be this as it may, the larger point still stands that the Plurality Condition requires such intermittency to hold, and so I-level statives will be perceived by speakers as anomalous when they find it hard to accommodate the intermittency inference.Whether or not it is accurate to say that this intermittency inference leads to anomaly in the general case with I-level statives is beside the point.

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:

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

b. *Tlákw* woosh eetéex̲ **yaa gasx̲itch** áx'
always RECIP after **HAB.PRV**.breed there
'They (always) multiply one generation after another over there.'
(Dauenhauer & Dauenhauer 1987: 262, line 38)

c. *Tlákw* **aku.éikw** **nooch** du yéi jinéiyi yéi
always **IMPRV**.3S.whistle **HAB** 3POSS work thus
adaaneiyí
3O.IMPRV.3S.do.SUB
'He always whistles while he's doing his work.' (JM)[28]

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 be detected in the translations speakers sometimes 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.[29]

(57) a. Yá áx̲ éesh hás **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)

28 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.

29 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.

b. Áwé tle **yéi xwajée** **nuch** wé taan áwé aax
FOC then 3O.**IMPRV**.1sgS.think **HAB** DEM sea.lion FOC 3O.for
has jiwtnúk wé atxá sákw.
PL.PRV.3S.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.

(58) **Tlingit Habitual-Mode and Quantificational Binding of Tense**[30]
Habitual-mode morphology in Tlingit is licensed *iff* the T-head of a sentence is quantificationally bound.

Furthermore, I will make this general proposal slightly more concrete by adopting the following formal implementation. As outlined in (59) 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. This could be encoded via the

30 An anonymous reviewer points out the similarity between this proposal and Chierchia's (1995) analysis of imperfective morphology. Chierchia proposes that the imperfective morphology that appears on both (I-level) statives and habituals in languages like English is licensed by a c-commanding 'GEN'-operator, with a (tripartite) modal semantics akin to our IMPRV$_{HAB}$ head in (41). One major difference, then, between the present account and Chierchia's is that the latter is an analysis of the modal, Habitual construal of imperfective morphology, which we have seen is distinct from the special, specifically habitual constructions in Section 3.3.

Furthermore, as this reviewer also points out, a major problem for Chierchia's (1995) analysis is that it fails to predict the so-called "same-participant-effect" for imperfective habituals containing singular NPs (Kratzer 2007, Del Prete 2012, Ferreira 2016). Observe that sentence (1) below is rather anomalous, in that it implies that John smokes the exact same cigarette repeatedly. Furthermore, observe that this anomalous inference disappears in (2), where an overt quantificational adverb is present.

(1) (#)John smokes a cigarette.

(2) John always smokes a cigarette.

Because Chierchia's (1995) analysis provides (1) the same general LF as (2), it fails to account for this contrast.

Consequently, as noted by the reviewer, my proposal in (58)-(60) would predict that Tlingit habitual-mode and Tlingit imperfective-mode should differ with respect to this same-participant-effect. That is, while we should find the same-participant-effect in simple, imperfective habituals (akin to (1)), this effect should be absent from verbs bearing habitual-mode morphology, as they are claimed to be akin to (2).

Unfortunately, due to independent morphosyntactic properties of Tlingit, testing this prediction will be difficult, and must be left to future research.

morpho-phonological "Vocabulary Items" in (59a,b), within a framework like that of Distributed Morphology (Halle & Marantz 1993).

(59) a. Vocabulary Item for Habitual Perfective-Mode:
$T_j \leftrightarrow$ / *-ch* / / ___ [PRV] and T_j is bound by a quantifier.

b. Vocabulary Item for Habitual Imperfective Mode:
$T_j \leftrightarrow$ / *nooch* / / ___ [IMPRV] and T_j is bound by a quantifier.

Read informally, the Vocabulary Item in (59a) 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, (59b) 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 significant issues for the rules formulated in (59), the key proposal they aim to capture is that Tlingit sentences bearing habitual (im)perfective-mode have the general syntactic shape below.

(60) a. Structure of a Sentence Headed by Verb in Habitual Perfective-Mode
$[_{TP}$ **TempQuant**$_j$ $[_{TP}$ T_j $[_{AspP}$ PRV $[_{VP} \ldots]]]]$

b. Structure of a Sentence Headed by Verb in Habitual Imperfective-Mode
$[_{TP}$ **TempQuant**$_j$ $[_{TP}$ T_j $[_{AspP}$ IMPRV $[_{VP} \ldots]]]]$

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 exhibiting 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 analyses in (60) that are of ultimate importance for the proposed account, rather than the particular morphophonological implementation in (59).[31]

However one opts to implement it, the general perspective in (58) and (60) captures a number of facts regarding the Tlingit habitual-modes. To begin, the hypothesized structures in (60) straightforwardly account for the basic semantic contrast between habitual perfective and habitual imperfective (Section 3.2). To recall, as repeated below, habitual perfective indicates that the recurring events

31 However, one nice feature of the implementation in (59) is that it might account for why the habitual markers of Tlingit are *post-verbal* (*-ch, nooch*). According to the rules in (59), the habitual markers of Tlingit are realizations of the T-head. Importantly, the only other proposed realization of [T] in Tlingit is the so-called "decessive mode" (Cable 2017b), which is also principally realized as either a suffix or a post-verbal particle. More generally, Crippen (2019) proposes that any functional projections higher than AspP in Tlingit are realized as post-verbal morphemes.

described by the verb happen *just after* some other recurring event-type (61a), while habitual imperfective indicates that the recurring events occur *throughout* that other recurring event-type (61b).

(61) a. *Scenario:* Whenever we arrive at his house, he then sings for us (15a).
Tlákw du xánt wutu.ádi, yak'éiyi
always 3POSS vicinity.to PRV.1plS.walk.SUB IMPRV.3S.good.REL
shí áwé du x'éidáx daak **us.áxch.**
song FOC 3POSS mouth.from out 3O.**HAB.PRV**.3S.sing
'Whenever we come to him, he sings out a good song.' (JM)

b. *Scenario:* Whenever we see him, he's in the middle of singing (15b).
Wutusateení, ch'a tlákw at **shée** **nooch**.
PRV.1plS.see.SUB just always IndefO **IMPRV**.3S.sing **HAB**
'Whenever we see him, he's always singing.' (SE)

This contrast follows directly from the structures in (60), given our semantics for [PRV] and [IMPRV] aspect. Note that the habitual perfective sentence in (61a) would receive the syntax in (62a), and thus the truth-conditions in (62b).

(62) a. Syntactic Structure of (61a):
$[\ [_{AdvP}$ Tlákw du xánt wutu.ádi $]_j\ [\ \mathrm{T}_j\ [\ \mathbf{PRV}_2\ [$ yak'éiyi … s-ax $]\ \ldots]$

b. Predicted Truth-Conditions of (62a):
$\forall t'.\ t' \in C_c$ & $\exists e.\ T(e) = t'$ & go.to.his.house(e,w) & Ag(e,w) = us $\rightarrow$
$\exists e'.\ t' \bowtie T(e')$ & sing(e',w) & Ag(e',w) = him & $\exists y$. good.song(y,w)
& Theme$(e',w) = y$

According to (62b), sentence (61a) will be true iff every time t' (in the contextual restriction Cc) 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. On the other hand, the habitual imperfective sentence in (61b) will be assigned the structure in (63a), and thus the truth-conditions in (63b).

(63) a. Syntactic Structure of (61b):
$[\ [_{AdvP}$ Tlákw wutusateení $]_j\ [\ \mathrm{T}_j\ [\ \mathbf{IMPRV}_{OG}\ [$ at shi $]\ \ldots]$

b. Predicted Truth-Conditions of (63a):
$\forall t'.\ t' \in C_c$ & $\exists e.\ T(e) = t'$ & see(e,w) & Agent(e,w) = us &
Theme(e,w) = him $\rightarrow \exists e'.\ t' \subseteq T(e')$ & sing(e',w) & Ag(e',w) = him

The truth-conditions in (63b) 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 (58)-(60) derive the differing contributions of habitual-perfective and habitual-imperfective from the independent semantic contrasts between [PRV] and [IMPRV].[32] Under our account, this is ultimately because the habitual morphology itself is semantically vacuous. Our analysis assigns no interpretation to the HAB-markers, whose presence is simply triggered/licensed by the existence of a higher, quantificational adverb. Moreover, 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 above that contain a habitual-mode verb, but don't seem to contain any quantificational adverb? Here, it is well to remember that even in English, a verb can be interpreted as lying within the scope of a quantificational adverb, even though no such adverb appears overtly in the sentence (52). This same phenomenon indeed seems to be at play in many naturally occurring, textual examples of Tlingit sentences with habitual-mode but no overt adverb (Leer 1991: 401-403). In these cases, although a quantificational adverb may be absent 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.

Nevertheless, such implicit anaphora to preceding adverbs might not account for all adverb-less instances of habitual-mode in Tlingit. Speakers do rather easily accept and produce sentences like (2b) 'out of the blue', and such adverb-less habituals can be found in texts *initiating* a sequence of other habitual sentences (Leer 1991: 394-396). Here, we must assume that speakers of Tlingit are simply able to more freely accommodate (or fill in) an implicit, unspoken temporal quantifier, such as *tlákw* 'always' or *wáa nganein sáwé* 'sometimes'.[33] Furthermore, such accommodation might be possible in Tlingit precisely because of its habitual morphology, which can overtly signal the presence of some unspoken (but intended) quantifier.

32 An anonymous reviewer asks whether this analysis also predicts an additional difference between habitual perfective and habitual imperfective. In many languages, telic accomplishment predicates exhibit a "culmination entailment" when bearing perfective aspect, but not when bearing imperfective. One might wonder, then, whether telic predicates in Tlingit exhibit this culmination entailment in the habitual perfective-mode, but not the habitual imperfective-mode. Unfortunately, however, as in many other languages of the Pacific Northwest, accomplishment predicates in Tlingit do not ever exhibit a culmination entailment, even in the perfective (Cable 2017b).

33 As noted by an anonymous reviewer, Thomas (2014) similarly assumes that speakers of Mbyá are likewise able to accommodate implicit, unspoken temporal adverbs, even in out of the blue, discourse-initial contexts.

With all this in mind, we could assume that sentences like (2b) in Tlingit underlyingly have the structure in (64b). Thus, even in sentences where habitual morphology seems to appear on its own, there underlyingly exists a quantificational expression binding the T-head.

(64) a. Sentence:
Ax éesh xáat **uxáaych**.
1sgPOSS father.ERG salmon 3O.**HAB.PRV**.3S.eat
'My father eats salmon.' (SE)

b. Basic Syntax: $[_{TP}\ \textbf{ADV}_j\ [_{TP}\ \text{T}_j\ [_{AspP}\ \text{PRV}\ [\ \text{ax éesh xáat xa}\ ]\ ]\ ]\ ]$

In addition to capturing the contrasts between the habitual modes, the proposals in (58)-(60) can also make sense of the observed differences between those modes and (plain) imperfective-mode. First, it follows rather directly that sentences containing a habitual-mode cannot describe (single) ongoing events or states (12)-(13). For example, sentence (12b) — repeated below in (65a) — will receive the syntax in (65b). Given the quantificational adverb in (65b), sentence (65a) will necessarily entail the existence of multiple barking events distributed across a set of times, just as the speaker's comment in (65a) suggests.[34]

(65) 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:
$[_{TP}\ \textbf{ADV}_j\ [_{TP}\ \text{T}_j\ [_{AspP}\ \text{IMPRV}\ [\ \text{wé keitl gáanx' a-sha}\ ]\ \ldots]$

For exactly this same reason, we predict that sentences like (13b) — repeated below in (66a) — will not receive Ongoing State readings. Furthermore, we also correctly predict that such sentences will be anomalous when the stative predicate is an I-level predicate, as it is in (66a).

34 In an editorial comment, Judith Tonhauser notes that this prediction only holds if we assume there are additional constraints on which adverbs can license Tlingit habitual morphology; in particular, we must assume that habitual-mode cannot be licensed by adverbs meaning 'once' or 'never'. In as much as the Tlingit adverb *tléx'dahéen* 'once' is incompatible with habitual mode, this does seem to be accurate. It is worth noting in this context that Filip (2018) explicitly proposes that there are special constraints governing which adverbs can co-occur with the Czech habitual inflection; such constraints may also be at play with Tlingit habitual-mode morphology. Furthermore, it may also be that an adverb like 'once' / *tléx'dahéen* is not truly a (T-binding) temporal quantificational adverb akin to 'always' and 'sometimes'. Notice, for example, that 'once' would necessarily lack the Plurality Condition discussed in Section 4.2.1, and claimed by de Swart (1993) and Fernald (2000) to govern temporal quantificational adverbs.

(66) a. (#)Ax̲ éesh a<u>x̲</u> tláa **asix̲án** **nooch**.
1sgPOSS father 1sgPOSS mother 3O.**IMPRV**.3S.love **HAB**
'My father often/always/regularly loves my mother.' (C)
Speaker Comment: "[(66a)] means my dad loves my mom occasionally or intermittently." (JM)

b. Basic Syntax:
$[_{TP}$ **ADV**$_j$ $[_{TP}$ T$_j$ $[_{AspP}$ IMPRV [a<u>x̲</u> éesh a<u>x̲</u> tláa s-<u>x̲</u>an] . . .]

As indicated by the comment in (66a), when stative predicates in Tlingit appear in a habitual-mode, speakers infer that the state holds only intermittently or occasionally, and so is not a stable or lasting property of the subject. Consequently, such structures are felt to be anomalous when the stative predicate is I-level, and thus denotes a stable and lasting property. This effect is further illustrated below.

(67) a. (#)Ax̲ éesh k̲áax̲ **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 **diyéshk̲** **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
"Mosquitoes are (usually, sometimes, often) numerous."
Speaker Comment: "It's okay if you restrict it." <Offers (67d)> (SE)

d. K̲utaanx' **has shayadihéin** **nooch** wé táax'aa
summer.in PL.**IMPRV**.3S.be.many **HAB** DEM mosquito
'Mosquitoes are numerous <u>in the summer</u>.'

In each of (67a)-(67c), speakers object to the use of habitual-mode on the stative predicate, and do so explicitly on the grounds that the state is generally a permanent property of the subject. Moreover, in (67c)-(67d), we find that habitual marking is acceptable on a stative, just as long as it's plausible that the state *does* hold only intermittently (*i.e.*, during the summers).

These judgments of course follow directly from our proposals in (58)-(60). Under those proposals, each of the sentences in (66)-(67) contain an implicit quantificational adverb, scoping over the stative predicate. Recall though from Section 4.2.1 that when quantificational adverbs scope over stative predicates, the state is understood to hold only intermittently, at the times quantified over by the adverbial (55). Thus,

such adverbs will generally feel anomalous with I-level statives, exactly as we see in (66)-(67) above.

Finally, and most importantly, let us turn now to the inability for verbs in the habitual perfective-mode to describe non-actualized habitualities (18)-(20). We've already seen in Section 4.1 that our semantics for $[\text{IMPRV}_{HAB}]$ correctly predicts that such non-actualized habitualities can be described by verbs bearing imperfective-mode. To recall, a sentence like (68a) receives the syntax in (68b), and thus the truth-conditions in (68c). 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 (68c) that the coffee maker has ever been used in the actual world.

(68) 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 very sweet coffee.' (SE)

b. Syntax of (68a): $[_{TP}\ \text{T}_j\ [_{AspP}\ \textbf{IMPRV}_{HAB}\ [_{VP}$ yá yées aa . . . l-uk]]]

c. Predicted Truth-Conditions for (68b):[35]
$\forall w' \in \text{HABIT}(w, g(j))\ .\ \exists e\ .\ g(j) \subseteq T(e)\ \&\ {}^{*}\text{boil}(e, w')\ \&$
${}^{*}\text{Agent}(e, w') = \text{machine}\ \&\ \exists y.\ \text{good.coffee}(y, w')\ \&\ {}^{*}\text{Theme}(e, w') = y$

By contrast, the habitual perfective-mode sentence in (69a) below will, according to our analysis, receive the syntax in (69b). Importantly, in this structure, the AspP is headed by [PRV], *whose meaning does not introduce modal quantification over alternate worlds* (29). Thus, whatever quantificational adverbial is accommodated (or filled in) for (69b), the truth-conditions will have the general form in (69c).

(69) a. Haibtual 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 very sweet coffee.' (C)

b. Syntax of (69a): $[\ \text{ADV}_j\ [_{TP}\ \text{T}_j\ [_{AspP}\ \textbf{PRV}\ [_{VP}$ yá yées aa . . . l-uk]]]]

35 As noted by an anonymous reviewer, the Agent theta role invoked in (68c) and (69c) may not be appropriate for these sentences. I leave aside here the difficult matter of exactly what thematic role is played by the subjects of these sentences.

c. Predicted Truth-Conditions for (69b):
$\forall$ / $\exists t'.\phi(t')$: $\exists e$. $T(e) \subset t'$ & boil(e, w) &
Agent(e, w) = machine & $\exists y$. good.coffee(y, w) & Theme$(e, w) = y$

As we see above, whatever the nature of the temporal quantification introduced by 'ADV$_j$', the predicted truth-conditions for (69b) will entail that there is indeed an event in the actual world w of the coffee machine boiling good coffee. Again, this is due precisely to the fact that — unlike [IMPRV$_{HAB}$] – the [PRV]-head is not semantically a modal quantifier, and so does not introduce quantification over alternate worlds.

For exactly this same reason, our account also explains 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 (58)-(60), the habitual imperfective-mode sentence in (70a) can receive the syntactic parse in (70b). Crucially, in structure (70b), the AspP is headed by [IMPRV$_{HAB}$], a modal quantifier.

(70) a. Haibtual 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 (70a): [ADV$_j$ [$_{TP}$ T$_j$ [$_{AspP}$ **IMPRV**$_{HAB}$ [$_{VP}$ wé kóox s-.i]]]]

c. Predicted Truth-Conditions for (70b):
$\forall$ / $\exists t'.\phi(t')$: $\forall w' \in$ **HABIT**(w, t') .
$\exists e$. $t' \subseteq T(e)$ & *cook(e, w') & $\exists x.{}^*$Agent(e, w') = x & $\exists y$. rice(y, w') &
*Theme$(e, w') = y$ & Loc(e, w') = the.machine

Consequently, as shown in (70c), thanks to the appearance of this modal quantifier [IMPRV$_{HAB}$], (70a) 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 (70a) is consistent with the rice cooker never having been used.[36]

In summary, as foreshadowed at the end of Section 3.3, our account in (58)-(60) is able to capture the central facts in (4) and (18)-(23) 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

36 An anonymous reviewer notes that, if the IMPRV$_{HAB}$ head creates an I-level stative, then we might predict that the LF in (70b) should trigger the same anomalous intermittency effect witnessed in (67). However, as stated in Footnote 12, it is unclear whether the IMPRV$_{HAB}$ head creates a (derived) stative predicate (in Tlingit), let alone an I-level one.

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 that allows 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.[37]

6 Broader issues and further directions

6.1 Theoretical consequences and comparison to prior approaches

Throughout this paper, I have used the term "habitual", but I have not anywhere attempted to define exactly what constitutes a habitual construction or a habitual construal.[38] As I will explain in this section, I believe this is for good reason, as attempts to precisely circumscribe what is a "habitual" run the risk of either prejudging the semantic analysis of the phenomena in question — and thereby excluding phenomena that have a tradition of bearing that label — or being so broad as to include phenomena that linguists often take pains to distinguish from habituals.

Let me begin here by noting that a definition for "habitual sentences" is indeed put forth by Krifka *et al.* (1995: 17), who write that "habitual sentences intuitively generalize over patterns of events as a component of their meaning." One issue with this definition, however, is the relative vagueness of the locution "generalize over patterns of events". If we take this to mean (more precisely) "quantify over events", then this prejudges the semantic analysis, and could exclude many constructions that linguists have traditionally referred to as "habituals", such as the Tlingit habitual-modes. It could also end up including constructions that linguists have traditionally distinguished from habituals, such as pluractionals or frequency adverbs like *twice* (Carlson 2012). On the other hand, if we construe this locution

37 An anonymous reviewer points out, however, that our account also allows a sentence bearing habitual imperfective-mode to contain the non-modal IMPRV_{OG} head, and so such sentences should allow a second reading that does possess the actuality entailment of a habitual perfective sentence. This point is well-taken and the prediction deserves some careful empirical scrutiny. One factor that complicates the testing of this prediction is that the putative second reading (with the actuality entailment) would be a stronger reading than the observed one, which lacks the actuality entailment.

38 I thank an anonymous reviewer for bringing this issue to my attention, as well as the proposal of Krifka et al. (1995).

more informally, as something like "directly or indirectly invokes a recurring event type", this would almost certainly be too broad. Finally, if we (as one anonymous reviewer suggests) take as definitional that habitual sentences contain the tripartite GEN-operator proposed by Krifka *et al.* (1995), then we again prejudge the semantic analysis of these structures, and could even end up excluding imperfective-marked habituals as true habitual sentences (as discussed in Footnote 30).

Another property that is often claimed to be an essential feature of habitual constructions or construals is the existence of some kind of "nomic, law-like" modality undergirding the repetition of events (Lenci & Bertinetto 2000, Ferreira 2016). Moreover, this modality allegedly validates the inference from a habitual statement to a counterfactual. Thus, under a true habitual construal, a sentence such as (71) is held to support an inference to sentence (72).

(71) My father always **smoked** when he visited my grandparents.

(72) If my father had visited my grandparents in 2007, he **would have smoked** (then).

However, one might again worry whether this claim — taken as a definitional property of "habituality" — could end up being too strong or too weak. Much rests on how, precisely, we understand the nature of the inference from the putative habitual to the counterfactual. If all we require is that the putative habitual imply or implicate the counterfactual, then this could be too weak a definition. For example, a present perfect sentence like (73) below is commonly held to lack the (true) habitual construal of (71). Nevertheless, (71) could be certainly be seen to support an inference to (72), as it could provide justification for asserting the counterfactual.

(73) My father **has** always **smoked** when he visited my grandparents.

On the other hand, if we require that a putative habitual *entails* the counterfactual, this presents other complications. First, it becomes difficult (to impossible) to establish through judgment and elicitation tasks whether a given construction is truly habitual. As explained in detail by Matthewson (2004), it is not practically possible to obtain direct judgments of entailment from speakers. Now, one can elicit a more indirect judgment of whether a sentence S1 entails a sentence S2, by asking speakers whether S1 can be true in a scenario where S2 is false (Judith Tonhauser, p.c.). In the present case, however, this would require spelling out a scenario where a counterfactual conditional is false (72), and the precise truth-conditions of counterfactual conditionals are themselves quite elusive and controversial. Secondly — and perhaps more importantly — we again run the risk of prejudging the semantic analysis and excluding constructions that linguists have typically referred to as "habituals". For

example, if the analysis proposed in Section 5 is correct, then the habitual perfective-mode of Tlingit would not truly qualify as a habitual under this definition, while the habitual imperfective-mode would.[39]

Given all this, I feel it is not productive to attempt a general, precise definition of habituality. Instead, we should accept that usage of the term "habitual" is governed loosely by ostension, tradition, and superficial similarity to prior instances of the term. Consequently, the phenomena we commonly dub "habitual" constructions (or interpretations) may — as argued here — end up having strikingly different semantic and syntactic natures. If so, this would of course imply that there is no possibility of providing a general, unified semantic analysis of (so-called) "habitual constructions" across languages, or even within a single language. Moreover, given its ultimate heterogeneity, the phenomenon of habituality could not be viewed as an instance of any one broader category, such as aspect or modality. That is, habituality would *per force* be a *sui generis* phenomenon, cross-cutting these other semantic dimensions (Filip & Carlson 1997, Filip 2018).

These general conclusions are of course shared with prior work on the specially marked habitual constructions in (21)-(23). Green (2000), Boneh & Doron (2008), and Filip (2018) all take the view that these constructions — though properly labeled "habituals" — have a quite different semantic and syntactic nature from habituals expressed via unmarked, imperfective-like forms. These prior works, however, differ from the account offered here, in that they stipulate the central properties of these constructions. For instance, Green (2000) posits that the "habitual *be*" of AAE in (21) realizes an abstract operator HAB_e that is separately stipulated to apply only to S-level predicates and to require that the habituality in question be actualized. Similarly, Boneh & Doron (2008) propose that the "periphrastic habitual" construction of Modern Hebrew (22) realizes a special operator ϕ_{HAB}, which lacks the modal semantics of the HAB-operator associated with simple, unmarked habituals. While this captures the actuality entailment of the construction, it does not clearly account for its incompatibility with I-level statives. Finally, although Filip (2018) does not develop a formal semantic analysis of the Czech habitual inflection (23), she does propose that it realizes an operator (or class of operators) distinct from that associated with the simple, unmarked habituals. In lieu of a formal analysis, Filip provisionally lists the properties that this operator (or operators) must exhibit, most notably the observed actuality entailment.

39 Indeed, an anonymous reviewer asks whether this may be a weakness of my proposed analysis. They also ask whether verbs in the habitual perfective-mode support inferences like that from (71) to (72). Again, however, although habitual perfective-mode is indeed used in contexts that seem to support such inferences (see Footnote 13), it is quite difficult to show whether such inferences are entailments, or simply defeasible implications (based upon real-world knowledge and expectations).

In summary then, I concur with prior authors that the special properties of the marked, specifically habitual constructions in (21)-(23) — as well as the habitual-modes of Tlingit — preclude the possibility of a single, unified definition or formal semantic analysis of "habituality". Furthermore, this fact in turn entails that habituality is a purely *sui generis* phenomenon, and cannot be reduced to a subcategory of aspect or modality (Filip & Carlson 1997). In addition, the analysis put forth in Section 5 uniquely derives the key, distinguishing properties found for these constructions and ties them to parallel facts found with temporal quantificational adverbs.

6.2 The cross-linguistic generality of the analysis

As just noted, a central goal of this paper is to explain the inability of certain habitual constructions in Tlingit to describe non-actualized habitualities, a feature that can also be observed for habitual constructions in a variety of other, genealogically and typologically distinct languages. To recall, each of the habitual constructions illustrated below is felt to only be felicitous if the events in question have actually occurred.

(74) **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.'

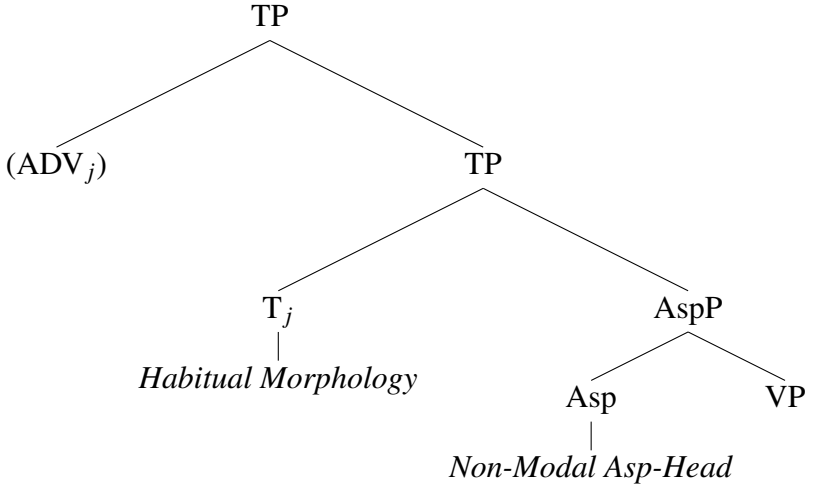
c. Czech (Filip 2018):
Tento stroj **drtívá** pomeranče.
this machine crush.**HAB** oranges
'This machine crushes oranges.'

This naturally raises the question of how our proposed account in (58)-(60) 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 non-actualized 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.

(75) **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 (74). Of particular interest here are the habitual constructions of African American English (74a) and Hebrew (74b), which consist of a higher habitual auxiliary together with a lower verbal participle. It is also worth noting that in (74a), that participle bears a connection with the progressive aspect in English, which is generally held to have the semantics of the Ongoing Event reading of imperfective (Deo 2015). It may be, then, that the lower participle in (74a) realizes an instance of the [IMPRV$_{OG}$] head, an Asp-head that — like [PRV] — lacks the modal semantics of [IMPRV$_{HAB}$]. 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 (74b). Here, it would be crucial to independently examine the semantics of the lower participial morphology in (74b), and whether — like the progressive morphology in (74a) — 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 (74c). 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$_{OG}$].

7 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 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$_{OG}$]), 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 in (76a), the habitual semantics is directly contributed by imperfective aspect, which has the meaning of a modal operator (Arregui *et al.* 2014, *et multa ali*a). However, under the second structure (76b), the understood multiplicity of events is ultimately the consequence of a (potentially implicit) quantificational adverb.

(76) a. General Structure Proposed for Tlingit Imperfective-Mode Habituals:
$[_{TP}$ T $[_{AspP}$ **IMPRV**$_{HAB}$ $[_{VP}$ my father eat salmon $]$ $\ldots]$

b. General Structure Proposed for Tlingit Habitual-Mode Habituals:
$[_{TP}$ **TempQuant**$_j$ $[_{TP}$ T$_j$ $[_{AspP}$ Asp $[_{VP}$ my father eat salmon $]$ $\ldots]$

We've also seen that in some languages, these two structures may be overtly, morphologically distinguished. This of course raises the possibility that in other languages, particularly those that don't specially mark quantificationally bound tenses, habitual sentences might be systematically ambiguous between the two structures in (76). Indeed, it may well be that the simple-present habitual sentences of English (e.g. '*my father eats salmon*') are structurally ambiguous in this way, though exploration of this possibility must be left to future research.

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