Notes on Tlingit event structure

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Abstract

A summary and explanation of eventuality classes in Tlingit. The basic Vendlerian properties of event structure like stativity, durativity, and telicity are first illustrated with English and then the same phenomena are outlined in Tlingit. The traditional lexical categories in Tlingit (active, stative, eventive, motion 'theme categories') are compared with the crosslinguistic semantics of eventuality classification, and a Tlingit-specific classification of eventuality is laid out in extensive detail. Although no formal compositional semantics is given, many potential avenues for empirical testing are sketched that will lead to formalization of Tlingit's rich system of temporal expression.

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1. Introduction

Tlingit is known for its rich system of aspect, but less attention has been paid to the lexical and metaphysical phenomena that interact with aspect. Traditional descriptions of event structure in Tlingit, particularly those of lexical aspect (aktionsart, situation aspect), are confusing from the perspective of crosslinguistic research. In this paper I lay out the basic distinctions to clarify how Tlingit fits into a more general understanding of event structure and aspect in human language. I depart quite far from the traditional description of Tlingit by Leer (1991) in favour of an approach based in crosslinguistic understanding of the semantics of event structure and aspect. I intend to offer a firm foundation for further empirical and metaphysical research on Tlingit's expression of temporal concepts, as well as a path toward a fully compositional morphosyntax and morphosemantics of the Tlingit verb and its clausal matrix.

First in section 2 I outline the basic eventuality classes in crosslinguistic semantic research and propose a similar classification for Tlingit. Then in section 3 I explain stativity and illustrate how Tlingit explicitly indicates stativity with the I-component of the classifier, particularly showing that lexical stativity emerges in the basic imperfective. In section 4 I explain how events differ from states and how they are subclassified into activities, achievements, and accomplishments following Vendler (1957) with English data and diagnostics. In section 5 I begin to explore the same subclassifications of events in Tlingit, showing how activities and achivements are distinguished by the presence or absence of basic imperfectives. I then explore Tlingit's rich expression of iterativity in section 6, looking at regular inflectional formation of repetitive imperfective pluractionals (§6.1), derivation of pluristates (§6.2), lexically specified repetitive imperfectives (§6.3), and the few instances of multiple repetitive suffixes (§6.4). In section 7 I tackle the distinct category of motion verbs, discussing their basic formation and the derivation of various kinds of states from motion. Finally in section 8 I discuss terminology issues in the crosslinguistic literature and in the Tlingit and Na-Dene specialist literature.

I have silently converted all cited data into the modern orthography except for data from Swanton (1909, 1911) which requires extensive interpretation. Uncited data is from my own work. All translations of Tlingit sentences and forms in this document are mine except where explicitly indicated. Translations from Tlingit into English often obscure or even obliterate subtle aspectual distinctions. Many conventions are deeply misleading, such as the use of present tense for perfective aspect of an involuntary achievement like 'I know it' for *x̲wasikóo* 'I have come to know it' (cf. sec. 5). But sometimes other translations include contextual information that is not explicit in the Tlingit data, so I occasionally include original translations for clarity.

2. Eventuality classes

The semantics of human language is essentially a system for describing and expressing relationships between entities and eventualities. An ENTITY[1] is the typical kind of thing that a noun denotes, something with an independent existence as an individual in the world like a person, a cloud, or a star. Prototypical entities are concrete things in human experience, but abstract entities like existence, love, and lack are also important (cf. Rosen 2014).

An EVENTUALITY is a representation of the way things are at some point in time, a "thing that happens" (Casati & Varzi 2014) or a 'way that is'. Verbs denote eventualities, like breathing, falling, or raining. Some languages have a special syntactic category of adjectives which denote stative eventualities like being red, being tall, and being hungry, but many languages like Tlingit also use verbs for these kinds of eventualities. Eventualities are sometimes known as 'situations' (e.g. Binnick 1991; Smith 1997);[2] a related concept of a 'state of affairs' includes eventualities along with entities and times (Binnick 1991; Textor 2014; Kratzer 2014). Binnick (1991: 179) suggests that eventualities must be taken as undefined primitives and very few researchers disagree.

Entities can represent things that cannot exist like an invisible pink unicorn or the king of the United States. Eventualities can likewise refer to phenomena that do not exist such as the sun rising every Tuesday in the west, me swimming on the moon last year, or how fat the king of the United States is. Entities can be separated into abstract versus concrete; eventualities can also be abstract like 'categorizing' and 'being important' or concrete like 'falling' and 'being tall'.

Both entities and eventualities seem to be manipulated with the same kind of mental logic. Much metaphysical and linguistic work has gone into exploring the relationships between them (e.g. Cresswell 1985; Bach 1986; Zacks & Tversky 2001; Lambalgen & Hamm 2005; Steedman 2005; Rothstein 2008). I have little to say about entities in this paper, but I explore Tlingit's eventualities in great detail.

Figure 1 illustrates a typical organization of eventuality classes following Vendler (1957), Bach (1986), and Smith (1997). Eventualities are divided first into static states and dynamic events. Events are further divided into atelic activities and telic culminations.[3] Accomplishments are durative – taking up some time – whereas achievements are instantaneous, though both are telic culminations.

1. Philosophers often use the term 'object' for what linguists call an entity (e.g. Rosen 2014), but this conflicts with the syntactic term for the complement of a verb.
2. The theory of Situation Semantics uses the term 'situation' differently (Kratzer 2014). This specialized usage must be distinguished from the more general 'situation' = 'eventuality'.
3. The label CULMINATION for telic events is my own; there is no widely used term for this subclass.

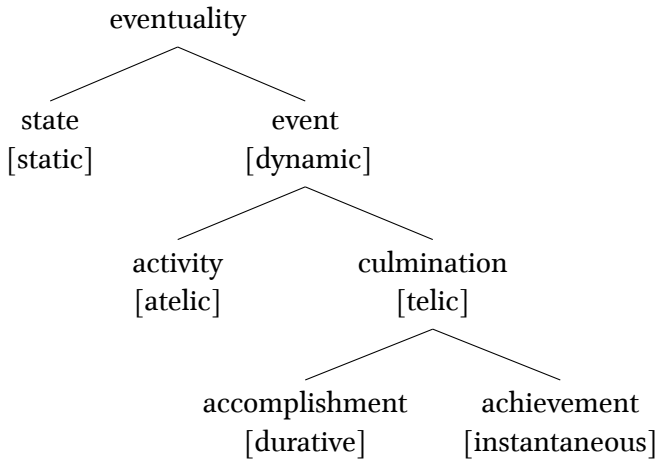

Figure 1: Crosslinguistic classification of eventualities

Concepts like 'instantaneous' as used in metaphysics and semantics are not based in physical reality per se, but rather in our perception and mental comprehension. For example, we routinely perceive a flash of light reflecting on water as taking up no time at all even though its duration can be objectively measured in milliseconds. Human language is founded upon our naive, instinctual concepts of reality that reflect our limited perceptions of it. These can and often do conflict with what we know scientifically about the universe. Our mental systems and languages are not arbitrary, however, and we can investigate them empirically with the right tools.

In figure 2 I give a tentative classification of eventualities in Tlingit that is modelled on the organization of figure 1. Tlingit eventuality classes are realized partly by lexical properties (lexical/situation aspect) and partly by grammatical properties (grammatical/viewpoint aspect). The basic classification of eventualities at the highest levels is lexically encoded, but even these basic distinctions may be overridden by derivational and inflectional operations. Tlingit notably exhibits a rich organization of states beyond the usual crosslinguistic models.

The traditional labels for some of the Tlingit eventuality classes are given along with the crosslinguistic equivalents in figure 2. On the right side, the traditional 'eventive' verbs are telic instantaneous achievements and the 'active' verbs are atelic durative activities; both are subclasses of events. Motion verbs may or may not underlyingly represent telic durative accomplishments, but this is clouded by an obligatory system of derivation which I explore in some depth in section 7. On the left side, Tlingit may distinguish individual-level from stage-level states with the I-component of

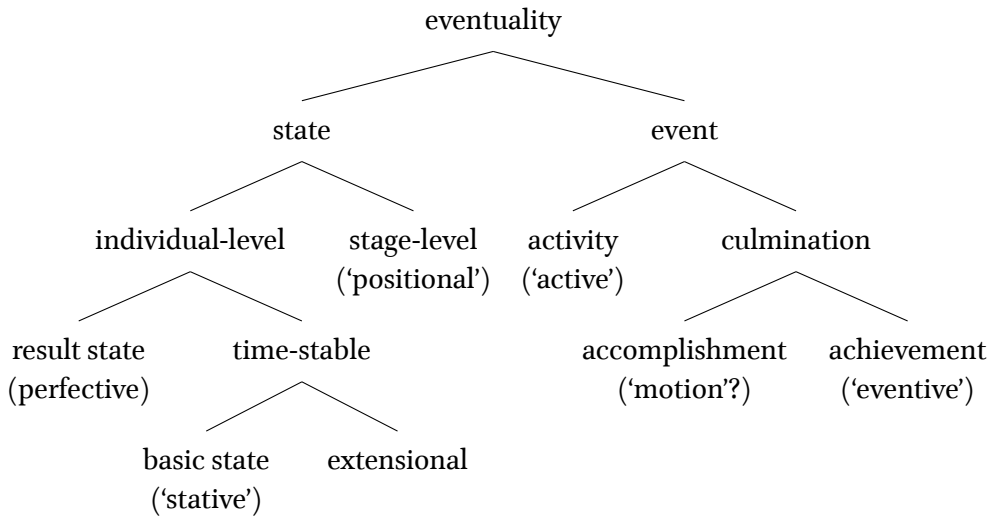

Figure 2: Tlingit eventuality classes, excluding iterativity

the classifier. The stage-level states are the positionals that denote position or configuration at a location. Among the individual-level states there is an inflectional distinction between result states (perfectives) and time-stable states. Perfective result states can be formed from any eventuality, whereas time-stable states are either lexically specified or derived. The lexically specified time-stable states are the traditional 'stative' verbs that I call basic states; these have the [I] value in their imperfective forms. The extensional states denote states extended along a path in space; extensionals are unpredictably derived mostly from motion verbs but also from some basic states.

I have omitted the effect of iterativity which extends the eventuality classification in several ways. Iterativity produces pluractionals and pluristatives. But a pluractional is always durative so that e.g. iterated achievements are actually durative activities. A few achievements produce pluristates rather than pluractionals when they are iterated, this being closely correlated with the conjugation class system that is still not understood. See section 6 for more details on iterativity and repetitives.

3. States

Eventualities are completely divided into states and events. A STATE can be roughly defined as an eventuality that does not change for some period of time. Some examples of states in English are *be tall, be hungry*, and *own*. We generally speak of states

as 'holding' in some context, such as "the state of his being hungry holds until some time after he has begun eating". States are often metaphorically treated like locations, and so a change of state is often described as 'entering into' the state as in "she enters into the state of hunger several hours after her meal".

An EVENT is the opposite of a state: an eventuality of change over time. Some examples of events in English are *eat*, *find*, and *hear*. Events are dynamic, requiring the input of energy[4] for the eventuality to occur (Rothstein 2004: 7). States are static; a state continues to hold forever unless there is some change in the environment and consequently some input of energy (Comrie 1976: 49). We usually speak of events as 'happening' in some context, e.g. "the event of her eating happens over an interval of time until she enters the state of feeling full". Events also 'occur', particularly when they are instantaneous as in "following the event of insufflating pepper, an event of sneezing occurs". There are many linguistic diagnostics that show the differences between states and events in English; I illustrate a few in (1)–(4), all cribbed shamelessly from Dowty (1979: 55).

(1) a. Read!
b. Eat the pasta!
c. Cough!
d.* Know the answer!

(2) a. Alfred is reading
b. Alfred is eating the pasta
c. Alfred is coughing
d.* Alfred is knowing the answer

(3) a. Bea read carefully
b. Bea ate the pasta carefully
c. Bea coughed carefully
d.* Bea knew the answer carefully

(4) a. What Cass did was read
b. What Cass did was eat the pasta
c. What Cass did was cough
d.* What Cass did was know the answer

In (1) we see that states like *know* cannot be imperatives. In (2) states cannot occur in the progressive aspect. In (3) states cannot occur with an event-oriented adverb like *carefully*. In (4) state verbs cannot be used in a pseudocleft construction with *do*. These diagnostics are all specific to English; similar ones should be available in Tlingit but they need to be developed.

Tlingit verbs distinguish states versus events. This distinction is signalled explicitly by the verb form in the imperfective aspect. If the classifier contains the value [I] in the verb's basic imperfective form then the verb denotes a state and not an event. Imperfective aspect with [I] is thus diagnostic for basic states, i.e. those states which are lexically specified. The forms in (5) and (6) illustrate how state verbs based on

4. Compare Aristotle's ἐνέργεια *enérgeia*. The sense of 'energy' in physics does not necessarily apply.

√*tin* ‘see’ and √*x̲án* ‘love’ must have [I] in the imperfective because the alternative unvalued [uI] is ungrammatical.

(5) a. x̲at iyatéen *state*
x̲at= Ø- i- Ø- Ø- i- √tin -Hμ
1SG·O=ZCNJ-2SG·S-[uD]-[uS]-[I]-√see-VAR
me= IMPFV.you·SG.STV.see
‘you can see me’

b. *x̲at itéen *not state*
x̲at= Ø- i- Ø- Ø- Ø- √tin -Hμ
1SG·O=ZCNJ-2SG·S-[uD]-[uS]-[uI]-√see-VAR
me= IMPFV.you·SG.see
intended: ‘you can see me’

(6) a. x̲at isix̲án *state*
x̲at= Ø- i- Ø- s- i- √x̲án
1SG·O=ZCNJ-2SG·S-[uD]-[S]-[I]-√love
me= IMPFV.you·SG.STV.love
‘you love me’

b. *x̲at isax̲án *not state*
x̲at= Ø- i- Ø- s- Ø- √x̲án
1SG·O=ZCNJ-2SG·S-[uD]-[S]-[uI]-√love
me= IMPFV.you·SG.love
intended: ‘you love me’

The forms in (7) and (8) show the converse situation where event verbs based on √*hun* ‘sell’ and √*.i* ‘cook’ must have unvalued [uI] in their imperfectives since the alternative [I] is ungrammatical. The events denoted in (7) and (8) are specifically activites, durative atelic events. I discuss activites further in section 4.

(7) a. x̲at ihóon *activity*
x̲at= Ø- i- Ø- Ø- Ø- √hun-Hμ
1SG·O=ZCNJ-2SG·S-[uD]-[uS]-[uI]-√sell -VAR
me= IMPFV.you·SG.sell
‘you are selling me’

b. *x̲at iyahóon *not activity*
x̲at= Ø- i- Ø- Ø- i- √hun-Hμ
1SG·O=ZCNJ-2SG·S-[uD]-[uS]-[I]-√sell -VAR
me= IMPFV.you·SG.STV.sell
intended: ‘you are selling me’

(8) a. x̲at is.ée *activity*
x̲at= ∅- i- ∅- s- ∅- √.i -Hμ
1SG·O=ZCNJ-2SG·S-[uD]-[S]-[uI]-√cook-VAR
me= IMPFV.you·SG.CSV.cook
'you are cooking me' (lit. 'you are causing me to cook')

b. *x̲at isi.ée *not activity*
x̲at= ∅- i- ∅- s- i- √.i -Hμ
1SG·O=ZCNJ-2SG·S-[uD]-[S]-[I]-√cook-VAR
me= IMPFV.you·SG.CSV.STV.cook
intended: 'you are cooking me'

There are a fairly large number of states in Tlingit. The list in table 1 (p. 10) illustrates an arbitrary selection of imperfective states in alphabetic order by their roots. The 'Cnj.' column gives the conjugation class; most states are *g*-conjugation and there are very few *∅*- or *g*-conjugation states. The 'Var.' column gives the lexically specified stem variation in the imperfective aspect. Unlike other eventuality classes, many states are invariable and so do not undergo stem variation; this is represented by 'inv.' in the 'Var.' column. The 'Gloss' column is the gloss of the root. Some states have corresponding events built from the same or from similar roots, a fact which cannot be shown in table 1 due to space constraints, but which I discuss later in sections 5.1 and 6 among others.

3.1. Argument structure and eventuality

Whether a verb will have [I] or [uI] is essentially unpredictable based on only syntactic information. It is the root which lexically specifies whether the predicate is a state or an event by default, not any syntactic derivation. But syntax can still provide useful heuristics for distinguishing states and events because verbs of each class often have different argument structure.

Tlingit has split intransitivity, with some intransitives marked for a subject (unergative) and other intransitives marked for an object (unaccusative). Among intransitives there is a fairly strong correlation of state → unaccusative. There are many unaccusative events but there are very few unergative states; the latter arise mostly by derivational blocking of object marking. The examples in (9) contrast a typical unergative event verb in (9a) with an unaccusative state verb in (9b).

Example	*Translation*	*Lexical Entry*	*Cnj.*	*Var.*	*Gloss*
si.áat'	it's cold	O-s-√.at'	g	-Hμ	'cold'
lichán	it stinks	O-l-√chán	g	inv.	'stink'
lichéesh	it's easy to get	O-l-√chish	g	-Hμ	'gettable'
yadál	it's heavy	O-Ø-√dal	g	-H	'heavy'
akalidéix'	he embarrasses her	O-ka-S-l-√dex'	g	-Hμ	'shame'
g̲aadlaan	it's deep	O-Ø-√dlan	g	-μ	'deep'
di.ék	he's frail	O-d-Ø-√.ék	g	inv.	'frail'
li.éil'	it's salty	O-l-√.el'	g	-Hμ	'salt'
ya.éin	he's starving	O-Ø-√.éin	g	inv.	'starving'
yagéi	it's big	O-Ø-√geʰ	g	-Hμ	'big'
sigóo	it's fun, joyful	O-s-√gu	g	-Hμ	'joy'
shayadihéin	they are many	O-sha-ya-d-Ø-√haʰ	n	-He+n	'many'
ayahéin	he claims it	O-S-Ø-√hen	n	-Hμ	'claim'
li.eesháan	he's pitiful, poor	O-l-√.eesháan	g	inv.	'poor'
kadli.íť'ch	it's sparkling	O-ka-d-l-√.íť'ch	g	inv.	'glass'
yéi oowajée	he thinks so of it	O-u-S-Ø-√jiʰ	n	-Hμ	'think'
kulijée	it's awful	O-ka-w-l-√jée	g	inv.	'terrible'
oodzikaa	he is lazy	a-u-S-d-s-√kaʰ	g	-μ	'lazy'
ashik'áan	he hates it	O-S-sh-√k'an	g	-Hμ	'hate'
yak'éi	it's good	O-Ø-√k'éi	g	inv.	'good'
naaléi	it's far	O-Ø-√le	n	-Hμ	'far'
yanéekw	he's sick	O-Ø-√néekw	g	inv.	'sick'
aya.óo	he owns it	O-S-Ø-√.u	n	-Hμ	'own'
li.oos	he's playful	O-l-√.oos	g	inv.	'playful'
lishís'k̲	it's raw	O-l-√shís'k̲	g	inv.	'raw'
akwliseek	he's bashful to her	O-ka-w-S-l-√seek	g	inv.	'bashful'
yéi yatee	it is so	O-Ø-√tiʰ	n	-μ	'be'
ayatéen	he can see it	O-S-Ø-√tin	g	-Hμ	'see'
yat'aa	it's hot	O-Ø-√t'aʰ	Ø	-μ	'hot'
lits'áa	it smells good	O-l-√ts'áȧ	g	inv.	'aroma'
yawúx̲'	it's wide	O-Ø-√wux̲'	g	-H	'wide'
asix̲án	he loves her	O-S-s-√x̲án	g	inv.	'love'
six̲'éi	it has a mouth	O-s-√x̲'éi	g	inv.	'mouth'
oowayáa	he resembles her	O-u-S-Ø-√ÿa	n	-Hμ	'resemble'

Table 1: Assorted states and their basic imperfective forms

(9) a. xatá *unergative event*
Ø- x- Ø- Ø- Ø- √ta -H
ZCNJ-1SG·S-[uD]-[uS]-[uI]-√sleep-VAR
IMPFV.I.sleep
'I'm sleeping'

b. xat yanéekw *unaccusative state*
xat= Ø- Ø- Ø- i- √néekw
1SG·O=ZCNJ-[uD]-[uS]-[I]-√sick
me= IMPFV.STV.sick
'I'm sick'

All basic unergative verbs denote events as far as I am aware. Antipassivization (deletion of the object) can produce unergative states, but these are always derived from an underlying transitive verb. Unergative states can also be constructed from motion verbs (see e.g. sec. 7.6) and from iterated events treated as properties (see e.g. 6.2), but again these are derived from other verbs and so are not basic lexical entries. Most unergatives are motion verbs; excluding motion verbs, the class of unergatives is much smaller than that of unaccusatives.

Most underived unaccusative verbs denote states like in (9b), but there are many exceptions such as 'vomit' in (11) and 'die' in (10). The unaccusativity of such exceptional verbs is generally because they denote patient-oriented events where the sole participant has little or no control over the event. These intransitive INVOLUNTARY EVENTS[5] are the most common (the only?) non-states among the unaccusatives.

(10) a. xat woonaa *unaccusative*
xat= wu- Ø- Ø- i- √na^{w}-μ
1SG·O=PFV-[uD]-[uS]-[I]-√die -VAR
me= PFV.STV.die
'I died'

b. *xwaanaa **unergative*
wu- x- Ø- Ø- i- √na^{w}-μ
PFV-1SG·S-[uD]-[uS]-[I]-√die -VAR
PFV.I.STV.die
intended: 'I died'

5. Leer uses the term 'involuntary eventive' to describe an achievement that is "semantically a resultative" (Leer 1991: 235) in the perfective aspect. But actually all perfective aspect forms denote result states. My involuntary events are based on thematic roles, with patient arguments for intransitives or with experiencer subjects for transitives. I exclude grammatical aspect from the definition, though there are probably aspectual implications to be explored. I believe this captures the same set of verbs that Leer (1991: 74) intended to classify.

(11) a. x̲at uwahás' *unaccusative*
x̲at= u- Ø- Ø- i- √ha' -H
1SG·O=PFV-[uD]-[uS]-[I]-√vomit-VAR
me= PFV.STV.vomit
'I vomited'

b. *x̲waahás' **unergative*
wu- x̲- Ø- Ø- i- √ha' -H
PFV-1SG·S-[uD]-[uS]-[I]-√vomit-VAR
PFV.I.STV.vomit
intended: 'I vomited'

Transitive verbs almost all denote events, but there are a small number of exceptional transitive states. The verb 'can see' in (5) and 'love' in (6) above are transitive states, and the examples below in (12) and (13) illustrate a few more. Transitive states are generally exceptional in any language that has a clear event/state contrast, so Tlingit's small inventory of transitive states is not particularly remarkable.

(12) a. x̲at iya.óo *transitive state verbs with [uS]*
x̲at= Ø- i- Ø- Ø- i- √.u -Hμ
1SG·O=ZCNJ-2SG·S-[uD]-[uS]-[I]-√own-VAR
me= IMPFV.you·SG.STV.own
'you own me'

b. x̲at iyahéin
x̲at= Ø- i- Ø- Ø- i- √hen -Hμ
1SG·O=ZCNJ-2SG·S-[uD]-[uS]-[I]-√claim-VAR
me= IMPFV.you·SG.STV.claim
'you claim me'

c. x̲at eeyayáa
x̲at= u- Ø- i- Ø- Ø- i- √ÿa -Hμ
1SG·O=IRR-ZCNJ-2SG·S-[uD]-[uS]-[I]-√resemble-VAR
me= IRR.IMPFV.you·SG.STV.resemble
'you resemble me'

(13) a. x̲at ishik'áan *transitive state verbs with [Sh], [L]*
x̲at= Ø- i- Ø- sh- i- √k'an -Hμ
1SG·O=ZCNJ-2SG·S-[uD]-[Sh]-[I]-√hate-VAR
me= IMPFV.you·SG.STV.hate
'you hate me'

b. x̲at keelidéix'
x̲at= ka- Ø- i- Ø- l- i- √dex' -Hμ
1SG·O=QUAL-ZCNJ-2SG·S-[uD]-[L]-[I]-√shame-VAR
me= IMPFV.you·SG.CSV.STV.shame
'you embarrass me'

A complete list of transitive states in Tlingit has not been compiled, but there seem to be only a few verb roots that support transitive state constructions. As such, if a verb can be transitive this is a good heuristic for denoting an event and not a state although it is not reliably diagnostic. See section 5.1 for further discussion of transitivity and event structure.

4. Events

Vendler (1957) defines a four-way division of eventualities based on their cooccurrence restrictions with adverbs, tenses, and logical entailments in English (cf. Dowty 1979: 54). The four classes of eventualities for Vendler are states, activities, accomplishments, and achievements. I have already discussed states above; the other three are now understood to be subclasses of events as in figure 1. Tlingit is sensitive to at least some if not all of these different event subclasses; I illustrate them in later subsections after introducing the event subclasses themselves with English.

An ACTIVITY is an event that extends over a period of time and does not have an intrinsic, necessary end point. Examples of activities in English include *read*, *speak*, and *push*. As with states, there are various linguistic diagnostics that indicate an eventuality is an activity, some of which are shown in (14) and (15).

(14) a.* Dinah read in an hour
b. Dinah ate the pasta in an hour

(15) a.* Ella almost read
b. Ella almost ate the pasta

There is a distinct difference in (14) and (15) depending on whether the verb takes an object or not. The verb *read* becomes acceptable in the sentences above if it has an object like *a book* added to it. Indeed, if the object *the pasta* is removed from *eat* then we have the opposite grammaticality shown in (16) and (17). English event structure and transitivity are closely linked; Tlingit needs exploration in this area.

(16) a. Fritz read the book in an hour
b.* Fritz ate in an hour

(17) a. Gina almost read the book
b.* Gina almost ate

The grammaticality difference between the sentences in (14)–(17) is the difference between activities and accomplishments. An ACCOMPLISHMENT is an event that extends over a period of time and has an intrinsic, necessary endpoint. Accomplishments include events like *bake a cake*, *give a speech*, and *walk home*. An endpoint is

also known as a *telos* (/ˈtiˌlous/, pl. *teloi*) from Greek τέλος *télos* 'purpose, goal, end'; the adjective is TELIC (< Gr. τελικός *telikós* 'final') and the abstract property is TELICITY.[6] Pianesi & Varzi (2000) describe a telos as "privileged" for particular kinds of events, giving the following explanation of what they mean by "privilege". This essentially captures what I have called "necessary and intrinsic" for a telic event.

> If we are told [*John ran home*], we know not only that the event of running performed by John and directed towards his own place got to an end but also that that event could not have possibly continued any further. On the other hand, there are infinitely many ways in which an event of a similar kind could have finished: John might have stopped running halfway home, almost close to home, far away from home, and so on. In each case a continuation (until the telos *John is at home* is reached) seems to be possible. Atelic sentences, by contrast, do not involve such a notion of a privileged end point.
>
> (Pianesi & Varzi 2000: 28)

⟦FIXME: Discussion of mereology and telicity for non-path events.⟧

The phenomenon of telicity is of considerable interest in both metaphysics and semantics, and there is a voluminous literature on the topic dating at least from Aristotle onwards. I leave the exploration of telicity to other researchers, simply illustrating it in English and then attempting later to identify telicity in Tlingit.

The difference between the English atelic temporal PP *for an hour* and the telic *in an hour* is traditionally used to illustrate telicity like in (18) and (21). These two PPs are used so often for this purpose that they have become clichés.

(18) a. Hank read for an hour
b.* Hank read in an hour

(19) a. Iris read the book for an hour
b. Iris read the book in an hour

In (18a) Hank can read for an hour and then stop without necessarily finishing whatever he has been reading. But in (18b) Hank must complete whatever he is reading for the telic *in an hour* to be acceptable. This fails because *read* without an object is an atelic activity but temporal *in an hour* requires an endpoint. In (19a) Iris may have read her book without finishing it, whereas in (19b) Iris has to have finished her book. Since Iris has something specific to read in (19b) she can finish it, satisfying the telicity required by the temporal *in an hour*. These examples show that activities – which are atelic – are incompatible with the telic temporal adjunct PP *in an hour*, but they are compatible with the atelic *for an hour*. Accomplishments – which are telic – are compatible with both the telic and atelic PPs.

6. The related term 'teleological' refers specifically to a purpose, not merely an endpoint. The verb 'culminate' (from Latin *culmen* < *columen* 'top, summit, roof-ridge') is often used because there is no 'telos' verb; researchers thus also use derivations like 'culmination' and 'culminativity'.

Although the presence of an object like *the book* in (19) can determine whether an event is telic or not in English, this is not always true. Objects are heuristic but not diagnostic for telicity in English. Dowty (1979: 58) gives the examples of *push a cart* and *drive the car* which denote atelic activities but nonetheless have objects.

(20) a. Jake pushed a cart for an hour
b.* Jake pushed a cart in an hour

(21) a. Kay drove the car for an hour
b.* Kay drove the car in an hour

Telicity is not the presence of an object, it is the presence of a necessary endpoint for an event. Endpoints can be entailed by objects, since for example *eat an apple* has a natural endpoint when the apple is completely consumed. But endpoints are not necessarily entailed by objects; *drive the car* in (21) does not have a defined endpoint because Kay can drive the car around town with no particular goal.

Vendler (1957) defines a third subclass of events that are distinct from both activities and accomplishments. An ACHIEVEMENT is an event that happens instantaneously and so has a necessary endpoint but does take time to reach the endpoint. Accomplishments are durative because they have a required duration, a length of time necessary for the event to culminate, i.e. to reach its endpoint. In contrast, achievements are nondurative because they culminate instantaneously, occuring at a point in time rather than over a length of time. Examples of achievements in English include *notice*, *catch sight of*, *find*, and *reach the summit*. Accomplishments allow adverbs like *carefully* whereas achievements do not, as shown in (22).

(22) a. Leah carefully read the book
b.* Leah carefully found the mistake

Another distinction between accomplishments and achievements is that the verb *almost* is ambiguous for accomplishments but not for achievements. This is shown by the examples in (23).

(23) a. Maia almost read the book
b. Maia almost found the mistake

In (23a) below the accomplishment *read the book* can be interpreted two different ways. One possible meaning of (23a) is that Maia picked up the book but never started reading it. Another possibility is that Maia read most of the book but never finished through to the end of it. In contrast the achivement *found the mistake* in (23b) only permits one interpretation, namely that Maia did not find the mistake. Maia cannot be halfway done with finding the mistake because there is no halfway possible in a finding achievement: the instantaneous culmination is all or nothing. Although subtle, the presence of multiple interpretations can be diagnostic for eventuality classes.

There are other event subclasses proposed by various researchers, such as Smith's (1997) SEMELFACTIVE[7] for atelic nondurative events that happen once and instantaneously like a single cough, one knock on a door, or a balloon popping. Binnick (1991: 179–183) reviews a variety of eventuality ontologies from various researchers who offer other extensions to the traditional classes. Researchers have also distinguished different flavours of events based on properties apart from pure event structure, such as ACTIONS which involve animate entities as agents, and MENTAL EVENTS which are limited to the human mind with no direct impact on the external world (Casati & Varzi 2014: 12–14). Some of these systematic extensions may be useful in future work on Tlingit, but I set them aside for now.

5. Activities and achievements in Tlingit

Tlingit reliably distinguishes durativity in its verbs. The presence or absence of a basic (lexically specified) imperfective form is one particularly important indicator of durativity. A BASIC IMPERFECTIVE[8] form is constructed from the *Ø*-conjugation prefix that marks imperfective aspect and one of the three suprasegmental stem shapes of *-H* (high tone short vowel), *-Hμ* (high tone long vowel), or *-μ* (low tone long vowel). The stem shape of a basic imperfective is unpredictable and so must be lexically specified.[9] The basic imperfective of an event verb denotes a durative activity; verbs that denote instantaneous events do not admit a basic imperfective. The verbs in (24) illustrate a few basic imperfectives that denote activities.

(24) a. xaxá *imperfective activities*
Ø- Ø- x- Ø- Ø- Ø- √xa -H
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√eat-VAR
it.IMPFV.I.eat
'I'm eating it', 'I eat it'

7. From Latin *semel* 'once' + *factivus* 'productive' < *facere* 'do', originally developed for Slavic aspect.
8. Basic imperfectives are a subset of Leer's 'primary imperfectives' (Leer 1991: 238). He calls all lexically specified imperfectives 'primary' and all predictable imperfectives 'secondary'. But Leer's 'primary imperfective' category conflates imperfectives with and without repetitive suffixes. A repetitive suffix is an eventuality quantifier that scopes over the root, object, and event argument and that forms pluractionals and pluristates. A verb may lack a basic imperfective because it does not denote a durative activity, but it can still have one of Leer's 'primary imperfectives' with a repetitive suffix denoting durative repetition of instantaneous events. I consider these constructions with repetitive suffixes to be derived. See section 6 for more on iterativity.
9. Roots with final ejectives *√CVC'* and roots with a former glottalized vowel *√CV'C* never have *-μ*.

b. x̲ahóon
Ø- Ø- x̲- Ø- Ø- Ø- √hun-Hμ
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√sell -VAR
it.IMPFV.I.sell
'I'm selling it', 'I sell it'

c. x̲a.aax̲w
Ø- Ø- x̲- Ø- Ø- Ø- √.ax̲w-μ
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√tie -VAR
it.IMPFV.I.tie
'I'm tying it', 'I tie it'

Tlingit has a large inventory of durative activity verbs. The list in table 2 (p. 18) presents a somewhat random sampling of imperfective activities, ordered alphabetically by root. The 'Cnj.' column is the verb's conjugation class; the vast majority of imperfective activities are either *Ø-* or *n*-conjugation class members. The 'Var.' column gives the lexically specified stem variation of the verb in the imperfective, with 'inv.' indicating a stem that is inflectionally invariable. The final 'Gloss' column gives a gloss for the root.

Contrast the durative events in (24) above with some examples of instantaneous events in (25) and (26). These instantaneous events do not have a basic imperfective form because they cannot extend over a period of time, but they do admit perfective aspect because the state resulting from the event holds over some temporal extent.

(25) a. *x̲al'éex' *imperfective*
Ø- Ø- x̲- Ø- Ø- Ø- √l'ix' -Hμ
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√break-VAR
it.IMPFV.I.break
'I'm breaking it', 'I break it'

b. x̲waal'éex' *perfective*
Ø- wu- x̲- Ø- Ø- i- √l'ix' -Hμ
3·O-PFV-1SG·S-[uD]-[uS]-[I]-√break-VAR
it.PFV.I.STV.break
'I broke it'

(26) a. *x̲ajáak̲ *imperfective*
Ø- Ø- x̲- Ø- Ø- Ø- √jak̲-Hμ
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√kill-VAR
it.IMPFV.I.kill
'I'm killing it', 'I kill it'

Example	*Translation*	*Lexical Entry*	*Cnj.*	*Var.*	*Gloss*
a.áak	he's weaving it	O-S-Ø-√.ak	Ø	-Hμ	'weave'
a.aax̲w	he's tying it	O-S-Ø-√.ax̲w	Ø	-μ	'tie, bind'
akachoox	he's kneading it	O-ka-S-Ø-√chux	Ø	-μ	'knead'
asdáak	he's steaming it	O-S-s-√dak	Ø	-Hμ	'steam (food)'
akadlaakw	he's scratching it	O-ka-S-Ø-√dlakw	Ø	-μ	'scratch'
al.éil'	he's salting it	O-S-l-√.el'	n	-Hμ	'salt'
agóox'	he's dipping it out	O-S-Ø-√gux'	Ø	-Hμ	'dip'
ayag̲éel'	he's sharpening it	O-ya-S-Ø-√g̲il'	Ø	-Hμ	'sharpen'
ag̲wáal'	he's farting	a-S-Ø-√g̲wal'	n	-Hμ	'fart'
ahóon	he's selling it	O-S-Ø-√hun	n	-Hμ	'sell'
as.ée	he's cooking it	O-S-s-√.i	Ø	-Hμ	'cook'
a.een	he's killing them	O-S-Ø-√.in	n	-μ	'kill pl.'
ajóon	he's dreaming of it	O-S-Ø-√jun	n	-Hμ	'dream'
alóok	he's sipping it	O-S-Ø-√luk	Ø	-Hμ	'sip'
al'eix̲	he's dancing	a-S-Ø-√l'ex̲	n	-μ	'dance'
al'óon	he's hunting it	O-S-Ø-√l'u'n	Ø	-Hμ	'hunt'
anáakw	he's medicating her	O-S-Ø-√náakw	n	inv.	'drug'
as'óow	he's chopping it	O-S-Ø-√s'u'w	g̲	-Hμ	'chop'
asháa	it's barking at her	O-S-Ø-√sha	g	-Hμ	'bark (dog)'
ashí	he's singing it	O-S-Ø-√shi	g	-H	'sing'
tá	he's sleeping	S-Ø-√ta	n	-H	'sleep'
altín	he's watching it	O-S-l-√tin	n	-H	'see'
atlaakw	he's telling it	O-S-Ø-√tlakw	n	-μ	'tell myth'
altl'éilák̲w	he's gutting it	O-S-l-√tl'éilák̲w	n	inv.	'gut (fish)'
kadatl'óok̲	it's dripping	O-ka-d-Ø-√tl'uk̲	g̲	-Hμ	'drip'
a.óow	he's buying it	O-S-Ø-√.uw	n	-Hμ	'buy'
ax̲'awóos'	he's asking her	O-x̲'a-S-Ø-√wus'	n	-Hμ	'ask'
asxáat'	he's dragging it	O-S-Ø-√xat'	n	-Hμ	'drag, pull'
asxook	he's drying it	O-S-s-√xuk	Ø	-μ	'dry'
ax̲á	he's eating it	O-S-Ø-√x̲a	Ø	-H	'eat'
ax̲áas'	he's scraping it	O-S-Ø-√x̲as'	n	-Hμ	'scrape'
ax̲'aal	he's crunching it	O-S-Ø-√x̲'al	Ø	-μ	'crunch'
ayáa	he's packing them	O-S-Ø-√ya	n	-Hμ	'pack (carry)'
alyéix̲	he's making it	O-S-l-√yex̲	Ø	-Hμ	'make, build'

Table 2: Assorted durative activities and their basic imperfective forms

b. x̲waajáḵ *perfective*
Ø- wu- x̲- Ø- Ø- i- √jaḵ-H
3·O-PFV-1SG·S-[uD]-[uS]-[I]-√kill-VAR
it.PFV.I.STV.kill
'I killed it'

The availability of a basic imperfective with an event is diagnostic for the verb denoting an activity. But what eventuality subclass are the event verbs that lack a basic imperfective? If they are instantaneous rather than durative then they must be achievements. The list in table 3 (p. 20) gives a collection of achievement verbs with their perfective aspect forms. Unlike table 2 there is no column for stem variation. This is because stem variation in the perfective aspect is either predictable by conjugation class or invariable because of the lexical entry. ⟦FIXME: Explain in a footnote?⟧

Tlingit has many achievement verbs which would be either states or activities in English. This is a notable mismatch of event structure that confuses both language learners and linguists because the conventional English translations do not reflect the stark difference in event structure. The verbs for 'see' and 'know' are prime examples of this mismatch, illustrated in (27) and (28). The usual translations of the perfectives in (27a) and (28a) are 'I saw it' and 'I know it' respectively. But those translations are deeply misleading because they imply corresponding imperfectives that do not exist: these verbs are instantaneous achievements and not durative activities.

(27) a. x̲wasiteen *perfective result state*
Ø- wu- x̲- Ø- s- i- √tin -μ
3·O-PFV-1SG·S-[uD]-[S]-[I]-√see-VAR
it.PFV.I.STV.see
'I have come to see it'

b. *x̲asiteen *imperfective state*
Ø- Ø- x̲- Ø- s- i- √tin -μ
3·O-ZCNJ-1SG·S-[uD]-[S]-[I]-√see-VAR
it.IMPFV.I.STV.see
intended: 'I'm in the state of seeing it'

c. *x̲asateen *imperfective activity*
Ø- Ø- x̲- Ø- s- Ø- √tin -μ
3·O-ZCNJ-1SG·S-[uD]-[S]-[uI]-√see-VAR
it.IMPFV.I.see
intended: 'I see it', 'I'm seeing it'

Example	*Translation*	*Lexical Entry*	*Cnj.*	*Gloss*
uwa.áx'w	it cracked	O-Ø-√.ax'w	Ø	'crack'
awlichún	he wounded it	O-S-l-√chu'n	Ø	'wound'
wulich'éx̲'w	it got dirty	O-l-√ch'ex̲'w	Ø	'dirty'
uwadút'	he hiccuped	O-Ø-√dut'	Ø	'hiccup'
ayaawadlaak̲	he won it	O-ya-S-Ø-√dlak̲	n	'win, obtain, succeed'
aawag̲éex'	he donated it	O-S-Ø-√g̲ix'	n	'donate; toss'
uwahás'	he vomited	O-Ø-√has'	Ø	'vomit'
uwa.ée	it got cooked	O-Ø-√.i	Ø	'cook'
aawaják̲	he killed it	O-S-Ø-√jak̲	Ø	'kill'
akawlikél	he soaked it	O-ka-S-l-√kel	Ø	'soak'
shaawakúx	he got thirsty	O-sha-Ø-√kux	Ø	'get thirsty'
awsikóo	he knew it	O-S-s-√kuʰ	Ø	'know'
awlik'éi	he improved it	O-S-l-√k'éi	g	'good'
awlik'oots	he snapped it	O-S-l-√k'uts	n	'break, snap'
aawak̲ék'w	he wounded her	O-S-Ø-√k̲'ek'w	Ø	'cut (wound)'
uwal'íkw	he blinked	S-Ø-√l'ikw	Ø	'blink'
aawanáa	he inherited it	O-S-Ø-√na	Ø	'inherit'
woonaa	he died	O-Ø-√naʷ	n	'die'
uwasák̲	he got exhausted	O-Ø-√sak̲	Ø	'exhaust'
aawasháa	he married her	O-S-Ø-√sha	Ø	'marry'
woosháash	it wore out	O-Ø-√sha'sh	n	'wear out'
wootáax̲'w	it sank	O-Ø-√tax̲'w	n	'sink, drown'
awsiteen	he saw it	O-S-s-√tin	g̲	'see'
aawat'ei	he found it	O-S-Ø-√t'eʰ	g	'find'
uwat'íx'	it got frozen	O-Ø-√t'ix'	Ø	'freeze, harden'
wuditl'ák'	it got wet	O-d-Ø-√tl'ak'	Ø	'wet'
aawa.ún	he shot it	O-S-Ø-√.u'n	Ø	'shoot'
uwawál'	it broke	O-Ø-√wal'	Ø	'break'
akaawaxíl'	he bothered her	O-ka-S-Ø-√xil'	Ø	'bother'
wudixwétl	he got tired	O-d-Ø-√xwetl	Ø	'get tired'
wushix̲'éel'	he slipped	O-sh-√x̲'il'	g̲	'slip'
aawayeek̲	he bit it	O-S-Ø-√ÿik̲	g	'bite'

Table 3: Assorted instaneous achievements and their perfective forms

(28) a. x̲wasikóo *perfective result state*
Ø- wu- x̲- Ø- s- i- √ku^{h} -Hμ
3·O-PFV-1SG·S-[uD]-[S]-[I]-√know-VAR
it.PFV.I.STV.know
'I have come to know it'

b. *x̲asikóo *imperfective state*
Ø- Ø- x̲- Ø- s- i- √ku^{h} -Hμ
3·O-ZCNJ-1SG·S-[uD]-[S]-[I]-√know-VAR
it.IMPFV.I.STV.know
intended: 'I know it', 'I'm in the state of knowing it'

c. *x̲asakóo *imperfective activity*
Ø- Ø- x̲- Ø- s- Ø- √ku^{h} -Hμ
3·O-ZCNJ-1SG·S-[uD]-[S]-[uI]-√know-VAR
it.IMPFV.I.know
intended: 'I'm knowing it'

The verb *x̲wasiteen* in (27a) means something like 'I have caught sight of it', 'I got to see it', or 'I have come to see it'. Likewise the verb *x̲wasikóo* in (28a) means something like 'I have come to know it' or 'I got to know it'. Most literally the perfectives here can be translated as 'I have experienced an instananeous event of seeing/knowing it and my resulting state of seeing/knowing it continues to hold at the time of my speaking'. Instantaneous achivements cannot be durative so the imperfective aspect is impossible for these verbs, but the perfective is possible because it denotes the persisting result of the change of state that occurs with the achievement.

5.1. Causatives and eventuality shift

There are many pairs of intransitive and causative verbs that belong to different eventuality classes. Causativization is largely done in Tlingit by the manipulation of the S-component in the classifier, usually from [uS] to [S] or [L].[10] Leer (1991: 77) notes that many unaccusative involuntary event verbs that denote achievements become activities when causativized with an added subject. The canonical example of this is the achievement verb *O-Ø-√.i* (*Ø*; Achv) 'O get cooked' and the activity verb *O-S-s-√.i* (*Ø*; *-Hμ* Act) 'S make O become cooked' as illustrated in (29). The causativized verb is usually translated as 'S cook O' but this translation obscures the causative derivation.

10. The choice of [S] versus [L] is partly conditioned by stem phonology, but there are also semantic differences between them. The [Sh] value is related to negation and propositional attitude in some contexts, but in others it appears to be arbitrary. I do not address these issues in this paper.

(29) a. x̲at uwa.ée *unaccusative perfective result*
x̲at= u- Ø- Ø- i- √.i -Hμ
1SG·O=PFV-[uD]-[uS]-[I]-√cook-VAR
me= PFV.STV.cook
'I got cooked'

b. x̲at yisi.ée *causative perfective result*
x̲at= wu- i- Ø- s- i- √.i -Hμ
1SG·O=PFV-2SG·S-[uD]-[S]-[I]-√cook-VAR
me= PFV.you·SG.CSV.STV.cook
'you made me get cooked' (i.e. 'you cooked me')

The causative operation clearly shifts the verb from an instantaneous telic achievement to a durative atelic activity. This can be seen by the lack of an imperfective for the achievement in (30a) versus the presence of an imperfective for the causativized activity in (30b).

(30) a. *x̲at .ée **unaccusative impfv. achievmt.*
x̲at= Ø- Ø- Ø- Ø- √.i -Hμ
1SG·O=ZCNJ-[uD]-[uS]-[uI]-√cook-VAR
me= IMPFV.cook
intended: 'I am cooking'

b. x̲at isa.ée *causative impfv. activity*
x̲at= wu- i- Ø- s- Ø- √.i -Hμ
1SG·O=ZCNJ-2SG·S-[uD]-[S]-[uI]-√cook-VAR
me= IMPFV.you·SG.CSV.STV.cook
'you are making me cook' (i.e. 'you're cooking me')

Causativization affects the event structure of other eventuality classes as well. Another causative pair is the basic state *O-Ø-√k'éi* (*g*; Inv Stv) 'O be good' and the causativized achievement *O-S-l-√k'éi* (*g*; Achv) 'S make O good, improve O; S make peace with O'. Perfectives of both are possible as shown in (31), but the imperfective aspect is impossible for the instantaneous achievement in (32b) since this event is nondurative but the aspect is durative.

(31) a. wook'éi *unaccusative perfective result*
Ø- wu- Ø- Ø- i- √k'éi
3·O-PFV-[uD]-[uS]-[I]-√good
it.PFV.STV.good
'it became good'

b. awlik'éi *causative perfective result*
a- wu- Ø- Ø- l- i- √k'éi
3·O-PFV-3·S-[uD]-[L]-[I]-√good
it.PFV.she.CSV.STV.good
'she made it become good' (i.e. 'she made it good')

(32) a. yak'éi *unaccusative impfv. state*
Ø- Ø- Ø- Ø- i- √k'éi
3·O-ZCNJ-[uD]-[uS]-[I]-√good
it.IMPFV.STV.good
'it's good'

b. *alk'éi **causative impfv. achievmt.*
a- Ø- Ø- Ø- l- Ø- √k'éi
3·O-ZCNJ-3·S-[uD]-[L]-[uI]-√good
it.IMPFV.she.CSV.good
intended: 'she's making it good'

Some alternations are more complex than simply causativization. The particularly frequent verbs based on √*tin* 'see' raise singificant questions about both the syntax and semantics of the S-component in the classifier. The verb *O-S-Ø-√tin* (*g*; *-Hμ* Stv) 'S can see O' denotes a basic transitive state. This verb contrasts with not only the achievement verb *O-S-s-√tin* (*g*; Achv) 'S catch sight of O' but also the activity verb *O-S-l-√tin* (*Ø*; *-H* Act) 'S watch O'.

(33) a. ayatéen *imperfective state*
a- Ø- Ø- Ø- Ø- i- √tin -Hμ
3·O-ZCNJ-3·S-[uD]-[uS]-[I]-√see-VAR
it.IMPFV.she.STV.see
'she can see it'

b. altín *imperfective activity*
a- Ø- Ø- Ø- l- Ø- √tin -H
3·O-ZCNJ-3·S-[uD]-[L]-[I]-√see-VAR
it.IMPFV.she.??.see
'she's watching it'

c. *astéen **imperfective achievemt.*
a- Ø- Ø- Ø- s- Ø- √tin -Hμ
3·O-ZCNJ-3·S-[uD]-[S]-[I]-√see-VAR
it.IMPFV.she.??.see
intended: 'she's seeing it', 'she sees it'

The root √*tin* 'see' is bivalent with two thematic roles to assign for the experiencer/agent and the theme/patient, as can be seen by the basic state *ayatéen* 'she can see it' being transitive. The achievement *awsiteen* 'she caught sight of it' and the activity *altín* 'she's watching it' cannot be derived by simple causativization since the underlying predicate is already transitive. Further complicating issues, the basic state *ayatéen* 'she can see it' cannot be perfective; speakers always switch to the achievement *awsiteen* 'she caught sight of it' in the perfective aspect.

(34) a. *aawateen **perfective result*
a- wu- Ø- Ø- Ø- i- √tin -μ
3·O-PFV-3·S-[uD]-[uS]-[I]-√see-VAR
it.PFV.she.STV.see
intended: 'she could see it', 'she has been able to see it'

b. awlitín *perfective result*
a- u- Ø- Ø- l- i- √tin -H
3·O-PFV-3·S-[uD]-[L]-[I]-√see-VAR
it.PFV.she.??.STV.see
'she watched it'

c. awsiteen *perfective result*
a- wu- Ø- Ø- s- i- √tin -μ
3·O-PFV-3·S-[uD]-[S]-[I]-√see-VAR
it.PFV.she.??.STV.see
'she caught sight of it', 'she came to see it' (i.e. 'she saw it')

The contribution of [S] and [L] in these verbs is unknown, but inchoativity[11] seems to be involved at least for [S]. The conjugation classes (see sec. 7) of all three verbs are different, with *ayatéen* 'she can see it' being *g*-conjugation like the majority of basic states, and with *altín* 'she's watching it' being Ø-conjugation like many activities, but the achievement *awsiteen* 'she caught sight of it' is surprisingly a member of the *g*-conjugation class. This implies some semantic contributions from the conjugation classes, but we know so little about them at present that there are no obvious avenues for explanation.

11. The term INCHOATIVE is from Latin *inchoāre* < *incohāre* 'begin, initiate' and is generally used to describe a change of state where an entity 'enters into' the state. I use INCEPTIVE (< L. *incipĕre* 'begin') to refer to initiation of an eventuality without the 'entering into' implication. Inception is usually expressed in Tlingit by the preverb *gunayéi=* ~ *gunéi=* from *guna* 'other' + *yéi* 'way'. Inchoativity is an inherent property of Tlingit states with non-imperfective aspect but also seems to arise with some [S] and [L] instances as I point out here, perhaps from causation without an agent. See e.g. Kratzer 2000, Piñón 2001, and Cuervo 2015 for agentless causativity as inchoativity.

There has been so little investigation into the effects of argument structure modification on event structure in Tlingit that I have little more to offer here. I suspect that similar effects may be found in passivization (deletion of subjects), antipassivization (deletion of objects), and anticausativization (deletion of causative arguments). The tendency statives discussed in section 6.2 are sometimes found as passives or antipassives, such as the pair *ahóon* 'he sells it' and *dihúnkw* 'it sells well' where the latter state has both passivizing [D] and stativizing [I]. Sorting out the interactions between argument structure operations and event structure is a major outstanding task for research on Tlingit, as well as for research on Na-Dene languages generally.

6. Repetitives and iterativity in Tlingit

Iterativity is the property of multiple occurrences of a phenomenon within some interval of time, the repetition of an eventuality (Dowty 1979: 173; Binnick 1991: 144; Smith 1997: 24).[12] A pluractional is specifically an iterative event, where an event is actually composed of a plural set of subevents. Tlingit also has morphologically distinct pluristates which are the stative counterparts of pluractionals, i.e. iterative states. The iterativity of states has not received much crosslinguistic investigation, but there is a fairly large literature on pluractionality (e.g. Beck & von Stechow 2007; Beck 2012; Ward 2012; Henderson 2013).

Iterativity can be cyclic, such as the rotation of a wheel through several revolutions, or the back-and-forth swinging of a pendulum. Iterativity can also be serial, such as a series of hops as a bird moves along the ground, or a series of punctures made by a sewing needle. Iterativity can furthermore be simple repetition, like the repeated slamming of an open door in a strong wind or the sound of a leaky pipe dripping. An iterated eventuality is always a set of multiple instances of nearly identical eventualities, and the iteration is always ordered in time. Iteration is inherently durative because even when some iterated subevents are instantaneous the iterative superevent that contains them must span an interval of time.

Tlingit is very sensitive to subtle differences in iterativity, with several different constructions expressing particular flavours of iteration. The most common expression of iterativity is in the imperfective aspect with what are known as repetitive imperfectives. These repetitive imperfectives can be either inflectional or lexical. The form of an inflectional repetitive imperfective is predictable from the conjuga-

12. Repetitive is synonymous with 'iterative' in the description of Tlingit. Although Leer uses 'iterative' in his dissertation (Leer 1991: 239), he consistently uses 'repetitive' in other works (Leer 1978a, 2000, 2007, 2008). Other users of 'repetitive' for Tlingit include Story (1966), Naish (1966), and Eggleston (Edwards 2009; Eggleston 2013). Similar Na-Dene traditional terms are 'frequentative' and 'customary', and 'occasional'.

tion class of the verb. The form of a lexical repetitive imperfective is not predictable from lexical properties like conjugation class, but some kinds of lexical repetitives can be guessed from the encyclopedic and pragmatic meanings of particular roots. There are other grammatical constructions that express iterativity such as the habitual and contingent aspects, but I set them aside for now.

The vast majority of repetitive imperfectives in Tlingit are constructed with one of the repetitive suffixes, the set {*-k(w)*, *-ch*, *-x̲*, *-t*, *-s'*, *-l'*, *-x'*, *-t'*}. The inflectional repetitives (sec. 6.1) are formed only with *-k*, *-ch*, and *-x̲*; the other suffixes are restricted to the lexical repetitives (sec. 6.3). The repetitive suffixes all probably have distinct meanings because they seem to be semantically selected by particular roots among the lexical repetitives. The clearest example is the ictive *-t* associated with verbs of striking a target which I discuss in section 6.3. Leer (1991: 245) suggests some meanings for the repetitive suffixes based on their occurrences in the lexical repetitive imperfectives. I summarize his list here, quoting his descriptions. He says that *-ch* is only lexically specified for a few verbs and so offers no description for it; this same *-ch* suffix appears predictably in inflectional repetitive imperfectives of both *g̲-* and *g*-conjugation verbs as well as in the habitual aspect.

- *-k* "series of actions involving repeated contact with a back-and-forth motion"
- *-x̲* "action leading to transformation from one state to another"
- *-t* "series of discrete actions involving repeated contact which is instantaneous and usually violent"
- *-s'* "series of actions involving repeated contact with cumulative result"
- *-l'* "only one verb: grinding"
- *-x'* "action involving the movement or transformation of discrete multiple entities"
- *-t'* "action involving destruction of discrete multiple entities"

All of the repetitive suffixes can be analyzed as adverbial elements that quantify over eventualities. They are probably right-adjoined to either VP or AspP, or perhaps to both depending on the particular syntactic construction. Generally a verb can only have one repetitive suffix but there are some instances where two occur, both as frozen elements and as inflectionally active elements as discussed in subsection 6.4 below.

6.1. Inflectional repetitives

The inflectional repetitive imperfectives are grammatically predictable forms of imperfective aspect that contain a repetitive suffix. The four conjugation classes *∅*, *n*, *g̲*, and *g* are the predictors of inflectional repetitives, determining a repetitive imperfec-

tive form for every eventuality class except for motion.[13] The table in (35) gives the mapping from the conjugation class to the repetitive imperfective construction, with the conjugation class in the first column and the morphology in the others.

(35)

conj.	*pvb.*	*asp.*	*clf.*	*root*	*rep.*
Ø:		Ø-	[uI]-	√	-x̲
n:	yoo=	Ø-	[I]-	√	-k
g:	yei=	Ø-	[uI]-	√	-ch
g:	kei=	Ø-	[uI]-	√	-ch

The column 'pvb.' in (35) stands for 'preverb'; these are preverbal adverbs that have concrete meanings elsewhere but their semantic contributions in the repetitive are questionable. The *yoo=* elsewhere describes alternation, the *yei=* is usually translated as 'down', and *kei=* is usually translated as 'up'.[14] The 'asp.' refers to the aspectual prefix which in this case is the *Ø*-conjugation prefix for most imperfective aspect forms. The 'clf.' column gives the value of the classifier's I-component, either unvalued [uI] or valued [I].

The following examples in (36)–(39) illustrate contrastive pairs of basic imperfectives and repetitive imperfectives of activity verbs in all four conjugation classes. The pair of forms in (36) illustrate a *Ø*-conjugation verb *O-S-Ø-√x̲a* (*Ø*; *-H* Act) 'S eat O'. Because this verb is *Ø*-conjugation it has a repetitive imperfective formed with the repetitive suffix *-x̲* as represented in (35) above.[15]

(36) a. x̲ax̲á — *basic imperfective* (*Ø*)
Ø- Ø- x̲- Ø- Ø- Ø- √x̲a -H
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√eat-VAR
it.IMPFV.I.eat
'I'm eating it', 'I eat it'

b. x̲ax̲éix̲ — *repetitive imperfective* (*Ø*)
Ø- Ø- x̲- Ø- Ø- Ø- √x̲a -He -x̲
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√eat-VAR-REP
it.IMPFV.I.eat.REP
'I eat it repatedly'

13. For description and discussion of motion verbs see section 7 below.
14. The preverbs *yóo=* 'quotation' and *yéi=* 'thus, so' with high tone are not directly related.
15. The ablaut of *a* → *éi*/*ei* symbolized by *-He*/*-e* stem variation is regular with obstruent suffixes after open syllable roots. Similarly *u* → *éi*/*ei* but labialization on the root's onset is retained. The onset labialization in a root like √*xu* /xʷu/ 'steam' is not represented orthographically, so although it appears like a *w* is inserted in √*xu* + *-He* → *xwéi* this is not actually the case: /xʷu/ + *-He* → [xʷéː].

The forms in (37) contrast the basic imperfective and repetitive imperfective of the activity verb *a-Ø-√l'ex̲* (*n*; *-μ* Act) 'S dance'. Because this is an *n*-conjugation verb the repetitive is formed with the preverb *yoo=*, valued [I] in the classifier (*Ø-Ø-i-* → *ya-* → *-a-*), and the repetitive suffix *-k*. This repetitive is actually a pluristate rather than a pluractional as discussed in section 6.2.

(37) a. axal'eix̲ *basic imperfective* (*n*)
a- Ø- x̲- Ø- Ø- Ø- √l'ex̲ -μ
LEX-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√dance-VAR
IMPFV.I.dance
'I'm dancing'

b. yoo axaal'éx̲k *repetitive imperfective* (*n*)
yoo=a- Ø- x̲- Ø- Ø- i- √l'ex̲ -H -k
ALT=LEX-ZCNJ-1SG·S-[uD]-[uS]-[I]-√dance-VAR-REP
ALT=IMPFV.I.STV.dance.REP
'I'm dancing repeatedly'

The forms in (38) illustrate the basic and repetitive imperfectives of the activity verb *O-S-Ø-√s'u'w* (*g̲*; *-Hμ* Act) 'S chop O'. Since this verb is a member of the *g̲*-conjugation class it has a repetitive imperfective formed with the preverb *yei=* and the repetitive suffix *-ch*.

(38) a. x̲as'óow *basic imperfective* (*g̲*)
Ø- Ø- x̲- Ø- Ø- Ø- √s'u'w-Hμ
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√chop-VAR
it.IMPFV.I.chop
'I'm chopping it'

b. yei x̲as'úwch *repetitive imperfective* (*g̲*)
yei= Ø- Ø- x̲- Ø- Ø- Ø- √s'u'w-H -ch
down=3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√chop-VAR-REP
down=it.IMPFV.I.chop.REP
'I'm chopping it repeatedly'

Finally, the forms in (39) give a pair of basic imperfective and repetitive imperfective for the activity verb *O-S-Ø-√sha* (*g*; *-Hμ* Act) 'S bark (like dog) at O'. This is a *g*-conjugation verb so the repetitive imperfective is constructed with the *kei=* preverb and the *-ch* repetitive suffix.

(39) a. x̲at sháa *basic imperfective (g)*
x̲at= Ø- Ø- Ø- Ø- Ø- √sha -Hμ
1SG·O=ZCNJ-3·S-[uD]-[uS]-[uI]-√bark-VAR
me= IMPFV.it.bark
'it's barking at me'

b. kei x̲at shéich *repetitive imperfective (g)*
kei=x̲at= Ø- Ø- Ø- Ø- Ø- √sha -Hμ
up=1SG·O=ZCNJ-3·S-[uD]-[uS]-[uI]-√bark-VAR
up=me= IMPFV.it.bark.REP
'it's repeatedly barking at me'

Repetitive imperfectives are inherently durative just like basic imperfectives of activity verbs (and probably of state verbs too). Because of their inherent durativity, repetitive imperfectives can be formed from achievement verbs even though such verbs denote instantaneous events. The forms in (40) demonstrate some repetitive imperfectives based on achievements.

(40) a. yei x̲at'eich *repetitive imperfectives of achievements*
yei= Ø- Ø- x̲- Ø- Ø- Ø- √t'eʰ -e -ch
down=3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√find-VAR-REP
down=it.IMPFV.I.find.REP
'I find it repeatedly'

b. x̲a.únx̲
Ø- Ø- x̲- Ø- Ø- Ø- √.un -H -x̲
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√shoot-VAR-REP
it.IMPFV.I.shoot.REP
'I shoot it repeatedly'

Both finding and shooting are prototypical examples of instantaneous achievements. The semantics of their repetitive imperfectives in (40) is durative, however. These repetitive imperfectives denote a durative superevent composed of some number of instantaneous subevents as illustrated in (41).

(41) $e = \langle e_1 \ldots e_2 \ldots e_n \rangle$

The event e in (41) consists of a temporally ordered sequence of subevents, the instantaneous achievements e_1 through e_n. The time intervals '…' that occur between these subevents have arbitrary durations. Even though the subevents in e are instantaneous, there is a total interval of time between the first subevent e_1 and the last subevent e_n. This total interval is necessarily a duration and so e denotes a durative event even though its internal subevents are not durative.

There is no empirical data on the structure of iterative eventualities in Tlingit. Generally repetitive imperfectives seem to denote a sequence of at least three eventualities, with no clear upper limit. The maximal duration between subevents is also unknown, but there must be some rough upper bound on interevent duration beyond which the iterations are no longer perceived as connected to each other in a single superevent. This upper bound is probably context-dependent, based on encyclopedic knowledge of various kinds of events. It may be possible to refer to repeated flowering of a bush over the years, or perhaps repeated advancement and retreat of a glacier, but these same durations would be incompatible for the bouncing of a ball.

Another issue for iterative eventuality structure is the grouping of iteration. Linnebo (2014) says that plural quantification must address differences between levels of plurality. He describes Cheerios grouped in a first-level plurality of '○○○○○○' versus a second-level plurality of '○○ ○○ ○○', where the latter has an additional pairwise grouping. These are the sets $\{a, b, c, d, e, f\}$ versus $\{\{a, b\}, \{c, d\}, \{e, f\}\}$ where the total number of objects is the same but the cardinalities of the base sets differ. Tlingit may express similar properties with adverbials like the alternating preverb *yoo*= ALT 'back and forth, to and fro, up and down', but there may also be restrictions on subevent structure imposed by the different repetitive suffixes.

The translations of the repetitive imperfectives in (36)–(40) above are all deliberately simplistic, just adding the adverb 'repeatedly' with no elaboration. Eggleston says that "the repetitive imperfective indicates a situation that occurs regularly, but without being contingent on another event, or a specific time" (Eggleston 2013: 133). Leer offers a more detailed description of how repetitive imperfectives can be interpreted.[16]

> Similarly, the Iterative Imperfective … may have a simple iterative interpretation, referring to a single complex event where the action is repeated or undertaken consecutively ('I keep eating/trying to eat it'), or may be interpreted habitually, as referring to events distributed through time ('I've been eating it (habitually), I keep eating it (habitually)'). The Iterative denotes that the situation is repeatedly undertaken or begun, but does not specify whether it is succesfully completed. English lacks a colloquial construction to specify repeated undertaking; 'keep trying' is perhaps the closest equivalent, although it implies conativity, which the Tlingit *x̱aax̱é·x̱* does not. (Leer 1991: 358)

I expect that the subtleties in translation that Leer describes are not actually en-

16. The somewhat obscure term CONATIVE describes an attempt that is not necessarily successful, from Latin *cōnātus* 'endeavour, effort'. In philosophy and psychology conativity often refers to volition and desire, but in semantics these additional properties are not normally implied.

coded in the repetitive imperfectives themselves. Instead these kinds of nuances should be pragmatic, based on the one hand in the encyclopedic knowledge of particular phenomena and on the other hand in the discourse context where e.g. conation may be implied or not. This ought to be empirically verifiable, perhaps most easily by taking textual examples and modifying their contexts to permit or block various interpretations.

6.2. Pluristates: Repetitive states

The *yoo*=[*I*]-…-*k* repetitive imperfective of *n*-conjugation verbs like in (37) contains the valued classifier feature [I] whereas all other repetitive imperfectives contain [uI]. My hypothesis is that *yoo*=[*I*]-…-*k* forms are actually pluristates, imperfectives denoting a single superstate that is composed of individual inchoative subevents where the state is repeatedly entered into. I give (42) to illustrate one such repeated alternation state.[17]

(42) yoo yanáakw *imperfective alternating state*
yoo=∅- ∅- ∅- ∅- i- √na^{w}-Hμ -k
ALT=3·O-ZCNJ-[uD]-[uS]-[I]-√die -VAR-REP
ALT=him.IMPFV.STV.die.REP
'he keeps dying'

The verb in (42) describes a state – not an event – where the object repeatedly dies. Imagine a video game where the player repeatedly dies on a particular enemy or at a particular jump in each playthrough. In each of these playthroughs the player experiences a death achievement, expressible as the perfective *woonaa* 'he died'. Since death is an achievement the change of state from living to dead is instantaneous, but the state resulting from this event holds until the start of the next playthrough. On each new playthrough the player returns to life, this being the alternation expressed by the *yoo*= preverb. The verb in (42) describes the state that holds over the duration of multiple playthroughs with each playthrough ending in death. At any point during play the state of repeatedly being dead expressed by (42) holds, even though the player is actually alive for the vast majority of any one playthrough duration in question.

There are other flavours of imperfectives that appear to denote repetitive states. Many use the *-kw* suffix rather than *-k* for reasons which are unclear. Maybe the suffix was historically **-kw* and has lost its labialization in regular inflection but retained it in derivation. Compare the plural suffix *-x'* ~ *-x'w* and the diminutive suffix *-k'* ~ *-k'w*

17. The *-kw* and *-Hμ* here are phonologically irregular. The root √*na^{w}* is covertly labial, e.g. *woonaawu ḵáa* 'dead man' rather than **woonaayi ḵáa*. Normally *-He* would be expected; *-Hμ* is unexplained.

which also exhibit not only predictable labialization after labial segments like *u* and *k̲w* but also occur unpredictably labialized like in *yát* 'child' + *-k'* DIM → *yádák'w*.

One notable group of repetitive imperfective states describes an easy tendency for an eventuality to happen; I refer to these as TENDENCY STATES. They are derived from both event and state verbs. This is a very productive derivation, appearing with many different roots in Leer's lexical materials (Leer 1973, 1976, 1978b), but to my knowledge it has not been discussed in any previous works on Tlingit grammar.

I illustrate some tendency states in (43) through (46) below. The forms in (43) are based on the verb *O-x̲'a-Ø-√wash* (*n*; *-μ* Act) 'O yawn' which is an involuntary event, specifically an unaccusative activity. There is a repetitive imperfective with *yoo*=[*I*]-…*-k* predicted by the *n*-conjugation class membership, but the tendency state in (43) lacks the *yoo*= preverb and so does not denote an alternating pluristate (cf. sec. 6.1).

(43) a. x̲at x̲'awaash *imperfective activity*
x̲at= x̲'a- Ø- Ø- Ø- Ø- √wash-μ
1SG·O=mouth-ZCNJ-[uD]-[uS]-[uI]-√yawn-VAR
me= IMPFV.yawn
'I'm yawning'

b. x̲at x̲'ayawáshk *imperfective tendency state*
x̲at= x̲'a- Ø- Ø- Ø- i- √wash-H -k
1SG·O=mouth-ZCNJ-[uD]-[uS]-[I]-√yawn-VAR-REP
me= IMPFV.STV.yawn.REP
'I tend to yawn a lot' (i.e. 'I am in a state of repeatedly yawning')

The forms in (44) are based on the verb *O-S-Ø-√hun* (*n*; *-Hμ* Act) 'S sell O'. This is a transitive activity, and again is a member of the *n*-conjugation class. The tendency state in (44) is passivized from the basic verb with the addition of valued [D] in the classifier and the concomitant loss of a subject argument. The labialization of *-kw* is unpredictable; sonorants normally block the forward spread of labialization.

(44) a. x̲ahóon *imperfective activity*
Ø- Ø- x̲- Ø- Ø- Ø- √hun-Hμ
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√sell -VAR
it.IMPFV.I.sell
'I'm selling it', 'I sell it'

b. dihúnkw *imperfective tendency state*
Ø- Ø- d- Ø- i- √hun-H -kw
3·O-ZCNJ-[D]-[uS]-[I]-√sell -VAR-REP
it.IMPFV.PSV.STV.sell.REP
'it sells well' (i.e. 'it is in a state of being repeatedly sold')

The above two verbs are activities, but tendency states can be formed from other events. The forms in (45) are constructed with the verb *O-d-l-√nitl* (*∅*; Achv) 'O (human) get fat'. This is an involuntary event, specifically an achievement because there is no basic imperfective form available. As a member of the *∅*-conjugation, there is no *yoo*=[*I*]-...-*k* repetitive imperfective allowed, so the formation of a tendency state here is unrelated to conjugation class. The labialization of *-kw* is again unpredictable.

(45) a. xat wudlinítl *perfective achievement*
xat= wu- d- l- i- √nitl-H
1SG·O=PFV-[D]-[L]-[I]-√fat -VAR
me= PFV.PSV.CSV.STV.fat
'I got fat'

b. xat dlinítlkw *imperfective tendency state*
xat= ∅- d- l- i- √nitl-H -kw
1SG·O=ZCNJ-[D]-[L]-[I]-√fat -VAR-REP
me= IMPFV.PSV.CSV.STV.fat.REP
'I get fat easily' (i.e. 'I am in a state of repeatedly becoming fat')

The forms in (46) are constructed with the verb *S-d-sh-√xix* (Mot) 'S (sg.) run' which is a motion verb based on the root *√xix* that Leer (1978b: 54) glosses as "compact obj. moves through space, moves rapidly, falls". The presence of valued [D] and [Sh] in the classifier of this verb is lexicalized with no apparent semantic functions for either. Since this is a motion verb it does not have a conjugation class lexically specified and so one must be added by derivation (see section 7). The derivation applied here adds the *n*-conjugation class with no complement PP for a source or goal. Even though this derivation is *n*-conjugation, the tendency state lacks the characteristic *yoo*= that is required by the inflectional repetitive (sec. 6.1). Thus the tendency state is an additional form unrelated to the lexical entry. As before, the labialization of *-kw* is unpredictable, particularly since the root has no labialized segments.

(46) a. xwajixeex *perfective motion*
wu- x- d- sh- i- √xix -μ
PFV-1SG·S-[D]-[Sh]-[I]-√run·SG-VAR
PFV.I.STV.run·SG
'I ran'

b. xajixíxkw *imperfective tendency state*
∅- x- d- sh- i- √xix -H -kw
ZCNJ-1SG·S-[D]-[Sh]-[I]-√run·SG-VAR-REP
IMPFV.I.STV.run·SG.REP
'I run a lot' (i.e. 'I am in a state of repeatedly running')

A few tendency states are apparently based on verbs that are otherwise unattested. The perfective achievement in (47) is a transitive verb *O-sha-S-Ø-√tlex̲w* (*n*; Achv) 'S snatch O'.[18] But the imperfective tendency state in (47) is an intransitive verb even though there are no overt signals of argument structure modification in the classifier or elsewhere. This could be due to analogical development of the tendency verb without an intermediate base, or the intermediate base for the tendency verb may just be unattested, or the intermediate base may have once existed but is now lost.

(47) a. shax̲waatleik̲w *transitive perfective achievement*
Ø- sha- wu- x̲- Ø- Ø- i- √tlek̲w -μ
3·O-head-PFV-1SG·S-[uD]-[uS]-[I]-√snatch-VAR
it.PFV.I.STV.snatch
'I snatched them'

b. x̲ayatlék̲wk *intransitive imperfective tendency state*
Ø- x̲- Ø- Ø- i- √tlek̲w -H -k
ZCNJ-1SG·S-[uD]-[uS]-[I]-√snatch-VAR-REP
IMPFV.I.STV.snatch.REP
'I'm gluttonous, greedy for food' (lit. 'I tend to snatch (food)')

My hypothesis is that the 'tendency' or 'easy to' reading of tendency states is pragmatic or conventionalized, and that the tendency states simply denote a pluristate of subevents or substates. Stativity may force the generic/habitual reading over the specific/immediate reading of imperfectives for this construction, but this needs to be verified. There could be a semantic difference between *-k* and *-kw* where the latter has the tendency reading, but this fails to capture forms like (43) where tendency arises with *-k*. Non-state (event) repetitives with *-k* (see sec. 6.3) do not have the tendency reading, so one other possibility is that tendency could arise from stativity combined with *-k*. But this would imply that *yoo=*[*I*]*-...-k* alternating states should always have tendency readings which does not seem to be the case.

There are only a few examples of states with other repetitive suffixes, specifically with the *-x'* and *-x̲* suffixes. Repetitive state imperfectives with the plural *-x'* suffix are mostly found with what Leer (1991: 256) calls DIMENSIONAL STATES: basic states that specifically denote dimensions like size and weight. The pluristates formed from these verbs have an additional [D] value in the classifier with unknown function as well as the *-x'* suffix. The *-x'* suffix itself is homophonous with and probably identical to the plural noun suffix; I discuss this later in section 6.3.

18. The root *√tlek̲w* 'snatch' is related to the noun *tléik̲w* 'berry', giving a clue to its meaning.

(48) a. yayát' *imperfective state*
Ø- Ø- Ø- Ø- i- √yat' -H
3·O-ZCNJ-[uD]-[uS]-[I]-√long-VAR
it.IMPFV.STV.long
'it's long'

b. diyát'x' *imperfective pluristate*
Ø- Ø- d- Ø- i- √yat' -H -x'
3·O-ZCNJ-[D]-[uS]-[I]-√long-VAR-PL
it.IMPFV.STV.long.PL
'they're long'

(49) a. yadál *imperfective state*
Ø- Ø- Ø- Ø- i- √dal -H
3·O-ZCNJ-[uD]-[uS]-[I]-√heavy-VAR
it.IMPFV.STV.heavy
'it's heavy'

b. didálx' *imperfective pluristate*
Ø- Ø- d- Ø- i- √dal -H -x'
3·O-ZCNJ-[D]-[uS]-[I]-√heavy-VAR-PL
it.IMPFV.STV.heavy.PL
'they're heavy'

Dimensional states uniquely refer to what Leer calls a "quantifiable physical attribute", i.e. scalar attributes.[19] But scalarity is not obviously involved in the formation of *-x'* pluristates. Instead, the addition of the plural *-x'* suffix seems to pluralize the object and at the same time pluralize the state. I believe that all the *-x'* pluristates of dimension states entail both a plurality of objects and a plurality of states corresponding to each object. The denotation is a pluristate composed of simultaneous substates, with each substate distributively mapped to a unique member of the plural set of objects. But I see no clear reason why dimensional scalarity should be specially related to pluristativity since most other basic states do not form pluristates with *-x'*. The presence of the [D] value in the classifier also remains mysterious to me.

⟦FIXME: Non-dimensional repetitive states with *-x'*. Pretty sure there are a few.⟧

19. Dimensional state verbs are the only hosts for the comparative derivation with *ka-w-* CMPV-IRR- or *ga-w-* CMPV-IRR- and a comparative PP headed by *yáx̲* 'like', *yáanáx̲* 'more than', or *k̲ín* 'less than', or else the generic comparison *yéi=* 'so, thus'. See Leer (1991: 256) for more on Tlingit comparatives and Bogal-Albritten (2010) for the semantics of Na-Dene comparative 'aspect' generally.

As noted above, repetitive states are also possible with *-x̲*. The verb in (50) is *O-ka-d-Ø-√ch'ach'* (Ø; Achv) 'O get spots' which is an achievement and thus has no basic imperfective form. But there is an imperfective state with *-x̲* where this repetitive suffix apparently pluralizes the state of having a single spot. It is unclear why *-x̲* should not occur in other aspects if the root *√ch'ach'* only denotes having one spot, however, so the plurality of spots cannot be solely from *-x̲*.

(50) a. kawdich'ách' *perfective achievement*
Ø- ka- wu- d- Ø- i- √ch'ach'-H
3ᴏ-HSFC-PFV-[D]-[uS]-[I]-√spot -VAR
it.PFV.MID.STV.spot
'it got spots'

b. kadich'ách'x̲ *imperfective pluristate*
Ø- ka- Ø- d- Ø- i- √ch'ach'-H -x̲
3ᴏ-HSFC-ZCNJ-[D]-[uS]-[I]-√spot -VAR-REP
it.IMPFV.MID.STV.spot.REP
'it has spots'

There are two other verbs that are only attested as repetitive states with the *-x̲* suffix as shown in (51) and (52) below. To my knowledge there are no other repetitive states with *-x̲*. In what may not be a coincidence, both of these verbs also refer to spottedness. Because the verb roots are only attested in these repetitive imperfectives, we do not know which conjugation class these verbs are in nor which eventuality class they belong to. I have assumed, following Leer, that these verbs are unaccusative, but that is merely an educated guess based on typical state and involuntary event verbs; there are no examples of these verbs with anything other than morphologically unmarked third person arguments.

(51) kaach'ál'x̲ *imperfective pluristate*
Ø- ka- Ø- Ø- Ø- i- √ch'al'-H -x̲
3ᴏ-HSFC-ZCNJ-[uD]-[uS]-[I]-√spot -VAR-REP
it.IMPFV.STV.spot
'it has spots' (Leer 1976: 600)

(52) kajikáx'x̲ *imperfective pluristate*
Ø- ka- Ø- d- sh- i- √kax'-H -x̲
3ᴏ-HSFC-ZCNJ-[D]-[Sh]-[I]-√spot-VAR-REP
it.IMPFV.MID.INCH?.STV.spot
'it has spots' (Leer 1976: 693)

The root √*ch'al'* of (51) is linked by Leer (1973: 10/238) to a rare attributive noun *ch'áal'* 'pale', and the root √*ch'ach'* as in (50) is certainly related. There is a semi-regular historical connection between different affricates and fricatives that accounts for otherwise inexplicable pairs like *l'* : *ch'* (Leer 1990). The root √*ch'al'* may be further connected to the noun *ch'áal'* 'willow' (*Salix* spp.) and perhaps more distantly to *tl'áatl'* 'yellow; unid. tree fungus'.

The root √*kax'* of (52) is also documented as √*gax'* by Story & Naish (1973); they give example sentences for both forms that I repeat for reference in (53) below. Leer (1978b: 60) suggests a connection with the noun *káax'* 'spruce grouse' (*Falcipennis* spp.) as well as the deverbal *x̲askáax'* 'cross fox' (melanistic variant of *Vulpes vulpes*) which has the incorporated noun *x̲a-* 'fur' from *x̲aaw* 'fur, hair'.

(53) a. g̲uwakaan yádi kajikáx'x̲
g̲uwakaan yát -í Ø- ka- Ø- d- sh- i- √kax'-H -x̲
deer child-PSS 3·O-HSFC-ZCNJ-[D]-[Sh]-[I]-√spot-VAR-REP
deer child-PSS it.IMPFV.MID.INCH?.STV.spot
'deer fawns are spotted' (orig. "a young deer is spotted all over")
(Story & Naish 1973: 206)

b. s'ísaa kadzigáx'x̲
cloth Ø- ka- Ø- d- s- i- √gax'-H -x̲
cloth 3·O-HSFC-ZCNJ-[D]-[S]-[I]-√spot-VAR-REP
cloth it.IMPFV.MID.INCH?.STV.spot
'the cloth has spots' (orig. "the cloth has polka-dots all over it")
(Story & Naish 1973: 206)

There are two obscure and very rare repetitive states that are attested by Leer (1973) with the *-s'* and *-l'* suffixes. The perfective form in (54) is a causativized transitive achievement *O-S-s-√x̲ek̲* (*Ø*; Achv) 'S wake O early' based on the root √*x̲ek̲* 'wake early'. This root may itself be derived from the root √*x̲i* 'overnight' and the privative suffix *-k̲* 'lacking, without'. The imperfective pluristate in (54) seems to be based on an unattested intransitive; I have analyzed it as an unergative but all examples are third person so it could also be unaccusative. The verb with *-l'* is *akaagúkl'* 'he is trying hard to become skilled at it' (Leer 1973: f05/176); I discuss this verb in the context of the *-l'* suffix in section 6.3.

(54) a. awsix̲ék̲ *perfective achievement*
a- wu- Ø- Ø- s- i- √x̲ek̲ -H
3·O-PFV-3·S-[uD]-[S]-[I]-√wake·early-VAR
her.PFV.he.STV.wake·early
'he woke her early'

b. yax̲ék̲s' *imperfective pluristate*
Ø- Ø- Ø- Ø- i- √x̲ek̲ -H -s'
ZCNJ-3·S-[uD]-[uS]-[I]-√wake·early-SER
IMPFV.he.STV.wake·early.REP
'he wakes up early'

I have not encountered other repetitive states with suffixes besides *-k(w)*, *-x'(w)*, and *-x̲* except for the last two mentioned with *-l'* and *-s'*. This lack of other repetitive states despite the large inventory of repetitive suffixes could mean that there is something special about the semantics of the *-k(w)*, *-x'(w)*, and *-x̲* suffixes versus the rest of the repetitive suffixes. It would be useful to investigate via elicitation whether other suffixes could form repetitive states, and a thorough review of published and unpublished texts might also turn up examples with other suffixes.

6.3. Lexical repetitives

The lexical repetitive imperfectives are grammatically unpredictable forms of imperfective aspect that contain a repetitive suffix. These contrast with the inflectional repetitives discussed in section 6.1 because unlike them the lexical repetitives are specified for each verb and cannot be predicted from other properties of the verb. Nonetheless, as Leer (1991) says, patterns can be identified in the distribution of repetitive imperfectives based on the semantics of individual verb roots.

> Insofar as the choice of primary Imperfective is predictable at all, it has mainly to do with the internal kinetic configuration of the situation: whether the action is cyclic, i.e. composed of a chain of repeated actions that are cognitively identical; and if so, the kinetic shape of these actions, e.g. whether instantaneous or prolonged. (Leer 1991: 242)

To summarize, it is the extension of a particular root that determines which repetitive suffixes can appear with it in a lexical repetitive imperfective. Each root denotes a kind of eventuality, and each repetitive suffix is compatible with some kinds of eventualities but not with others. The *-t* suffix is, as I discuss in some detail below, particularly compatible with 'ictive' roots that denote striking of a target. Leer (1991: 245) suggests some semantic correlations between roots and lexical repetitives with his list that I cited on page 26. A formal semantics of the repetitive suffixes should ideally capture not only the relationship between roots and suffixes, but also capture the relationship between the conjugation classes and repetitive suffixes in inflectional repetitives (section 6.1). I believe that each of the repetitive suffixes has a distinct meaning that is shared in all of its contexts, and that the distribution of suffixes in lexical repetitives is the key to determining their particular meanings.

All lexical repetitive imperfectives are durative activities with the *Ø-* prefix as their grammatical aspect marker and unvalued [uI] in the classifier; they are never states with valued [I] which would be repetitive states instead (sec. 6.2). The forms in (55) below give examples for each of the repetitive suffixes in the set {*-k*, *-ch*, *-x̲*, *-t*, *-s'*, *-l'*, *-x'*, *-t'*}, all based on achievement verbs that lack basic imperfective forms. The repetitive suffixes all select for the same three stem shapes: (i) high tone short vowel *-H* for closed syllable roots, (ii) high tone long vowel *-Hμ* for most open syllable roots, (iii) low tone long vowel *-μ* for some open syllable roots. Open syllable roots that have either /a/ or /u/ undergo ablaut with the vowel quality shifting to /e/, symbolized *-He* or *-e* depending on tone. Labial /u/ requires labialization of adjacent consonants which remains after the ablaut, though the orthography can obscure this.

(55) a. x̲a.ús'k *-k repetitive*
Ø- Ø- x̲- Ø- Ø- Ø- √.us' -H -k
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√wash-VAR-REP
it.IMPFV.I.wash.REP
'I'm washing it', 'I wash it' *O-S-Ø-√.us'* (*n*; Achv) 'S wash O'

b. x̲adaléich *-ch repetitive*
Ø- x̲- d- Ø- Ø- √la -He -ch
ZCNJ-1SG·S-[D]-[uS]-[uI]-√yell-VAR-REP
IMPFV.I.yell.REP
'I'm yelling', 'I yell' *S-d-Ø-√la* (*Ø*; Achv) 'S yell'

c. x̲asatéix̲ *-x̲ repetitive*
Ø- Ø- x̲- Ø- s- Ø- √ta -He -x̲
3·O-ZCNJ-1SG·S-[uD]-[S]-[uI]-√boil-VAR-REP
it.IMPFV.I.boil.REP
'I'm boiling it', 'I boil it' *O-S-s-√ta* (*Ø*; Achv) 'S boil O'

d. x̲a.únt *ictive -t repetitive*
Ø- Ø- x̲- Ø- Ø- Ø- √.u'n -H -t
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√shoot-VAR-ICT
IMPFV.I.shoot.ICT
'I'm shooting it', 'I shoot it' *O-S-Ø-√.u'n* (*Ø*; Achv) 'S shoot O'

e. x̲ak̲éis' *serial -s' repetitive*
Ø- Ø- x̲- Ø- Ø- Ø- √k̲a -He -s'
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√sew-VAR-SER
IMPFV.I.sew.SER
'I'm sewing it', 'I sew it' *O-S-Ø-√k̲a* (*Ø*; Achv) 'S sew, stitch O'

f. kax̲laxákwl' *-l' repetitive*
Ø- ka- Ø- x̲- Ø- l- Ø- √xakw-H -l'
3·O-QUAL-ZCNJ-1SG·S-[uD]-[L]-[uI]-√grind-VAR-REP
it.IMPFV.I.grind.REP
'I'm grinding it', 'I grind it' *O-ka-S-l-√xakw* (*Ø*; Achv) 'S grind, whip O'

g. shax̲atlék̲wx' *plural -x' repetitive*
Ø- sha- Ø- x̲- Ø- Ø- Ø- √tlek̲w -H -x'
3·O-QUAL-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√snatch-VAR-PL
it.IMPFV.I.snatch.PL
'I'm snatching them', 'I snatch them' *O-sha-S-Ø-√tlek̲w* (*n*; Achv) 'S snatch O'

h. x̲asagánt' *plural -t' repetitive*
Ø- Ø- x̲- Ø- s- Ø- √gan -H -t'
3·O-ZCNJ-1SG·S-[uD]-[S]-[uI]-√burn-VAR-PL
IMPFV.I.burn.PL
'I'm burning them', 'I burn them' *O-S-s-√gan* (*n*; Achv) 'S burn O'

The *-k* and *-ch* suffixes are identical with those of the inflectional repetitives, but the whole forms of the lexical repetitives are not identical with their inflectional counterparts. The lexical *-k* repetitive is not a pluristate since it lacks [I] in the classifier and further does not have the *yoo=* preverb. The lexical *-ch* repetitive does not occur with either of the *yei=* or *kei=* preverbs unlike the inflectional *-ch* repetitives of the *g̲-* and *g-*conjugation classes. The same *-ch* suffix is used in the construction of the habitual aspect, but the stem shapes of *Ø*-conjugation verbs in the habitual aspect are different from their repetitive imperfective counterparts. As a part of the habitual aspect, *-ch* is also found in the habitual auxiliaries. The ergative *-ch* suffix on subject phrases is homophonous but probably unrelated since there is no iterativity involved.

⟦FIXME: Tables of *-k* and *-ch* lexical repetitives. Needs to be done despite how painful it is to hunt for them.⟧

The lexical *-x̲* is the only lexical repetitive that is identical with the inflectional repetitive, and as a consequence the two cannot be told apart if the verb is *Ø*-conjugation (Leer 1991: 241). In a cursory review of Leer 1978b I found that all lexical *-x̲* repetitives are *Ø*-conjugation, so it may be that Leer (1991) has made a distinction between lexical and inflectional *-x̲* repetitives where none actually exists. We need elicitation of non-*Ø* verbs and review of other lexical documentation (Story & Naish 1973; Leer 1973, 1976) before adopting this conclusion, however.

⟦FIXME: Table of *-x̲* 'lexical' repetitives? Ugh.⟧

Another loose thread is that the *-x̲* repetitive suffix is homophonous with the pertingent postposition *-x̲*. This postposition has a variety of contextual interpretations

in different constructions, but Leer (1991: 33) describes it as essentially meaning "in prolonged contact at; repeatedly arriving at; being, in the form of". The repeated arrival meaning arises at least with the *∅*-conjugation *NP-{-t, -x̲, -dé}* motion derivation (sec. 7). The repetitive *-x̲* and postposition *-x̲* therefore might be semantically related even though they do not necessarily cooccur.

The *-t* repetitive suffix is clearly associated with repeated striking of a target. I have called this property ICTIVE from Latin *ictus* 'blow, stroke, thrust' (cf. L. *icĕre* 'to hit, to strike'). Leer describes *-t* as denoting an "series of discrete actions involving repeated contact which is instantaneous and usually violent" (Leer 1991: 245). The list in table 4 gives a variety of ictive verbs that can have *-t* in a repetitive imperfective.[20]

Most ictive verbs are telic achievements that culminate instantaneously and so they lack basic imperfectives. But there are exceptions like *√kit'* 'pry' and *√x'as'* 'scrape' that do have basic imperfectives and so are actually durative activities. I suspect that in these cases there are actually two homophonous verbs, one denoting an activity and the other an achievement. Normally these pairs are nearly impossible to tell apart, but there is one pair based on *√gwal* 'beat, punch, strike, stab' that makes the difference fairly clear. The form in (56a) is a basic imperfective that describes the activity of playing a struck instrument like a drum, bell, or xylophone. The form in (56b) is a repetitive imperfective that describes the iterative achievement of striking something with either a fist or a dagger (*gwálaa*).

(56) a. agwáal *activity imperfective*
a- ∅- ∅- ∅- ∅- ∅- √gwal-Hμ
3·O-ZCNJ-3·S-[uD]-[uS]-[uI]-√beat-VAR
it.IMPFV.he.beat
'he's playing it (e.g. drum)'

b. agwált *repetitive achievement imperfective*
a- ∅- ∅- ∅- ∅- ∅- √gwal-H -t
3·O-ZCNJ-3·S-[uD]-[uS]-[uI]-√beat-VAR-ICT
it.IMPFV.he.beat.ICT
'he's hitting it', 'he's stabbing it'

The two forms in (56) could be based on the same verb except they differ in conjugation class. The difference is invisible in (56) but we can see it in (57) with the corresponding perfective aspect forms (Leer 1976: 681). The 'play drum' verb in (57a)

20. There is a derivational suffix *-x̲aa* I call the AMISSIVE which occurs exclusively with the same class of ictive verbs. This suffix indicates that the target is missed, e.g. *ayawsigwálx̲aa* 'he stabbed at it and missed'. The *-x̲aa* might contain the *-x̲* repetitive suffix. I have only seen this in perfectives.

Example	*Translation*	*Lexical Entry*	*Cnj.*	*Var.*	*Gloss*
ach'éx̲'t	he's pointing at it	O-S-Ø-√ch'ex̲'	Ø/n	-Hμ	'index finger'
adáx̲t	he's adzing it out	O-S-Ø-√dax̲	Ø/n	-Hμ	'adze out'
adlákwt	he's scratching it	O-S-Ø-√dlakw	Ø		'scratch'
adzeit	he's throwing at it	O-S-Ø-√dzu^{h}	Ø		'throw'
agwált	he's punching it	O-S-Ø-√gwal	Ø		'beat, punch'
agúkt	he's pecking it	O-S-Ø-√gu'k	Ø		'peck'
aksahánt	he's cutting it in strips	O-ka-S-s-√han	Ø/g̲	-Hμ	'fringe'
ajúx̲'t	he's slinging at it	O-S-Ø-√jux̲'	Ø		'sling, cast'
akít't	he's prying it	O-S-Ø-√kit'	Ø	-Hμ	'pry'
ak'éx̲'t	he's gaffing it	O-S-Ø-√k'ex̲'	Ø		'gaff (hook)'
as'áxwt	he's stacking it	O-S-Ø-√s'axw	Ø		'stack'
as'él't	he's ripping it	O-S-Ø-√s'el'	Ø	-Hμ	'rip, tear'
as'úwt	he's chopping it	O-S-Ø-√s'uw	Ø/n/g̲	-Hμ	'chop'
atákt	he's poking it	O-S-Ø-√tak̲	Ø	-Hμ	'poke'
atáx't	he's biting it	O-S-Ø-√tax'	Ø		'bite'
aksatékt	he's twisting it	O-ka-S-s-√tek̲'	Ø	-Hμ	'twist'
akatéx̲'t	he's wringing it out	O-ka-S-Ø-√tex̲'	Ø	-Hμ	'wring'
at'áx't	he's flicking it	O-S-Ø-√t'ax'	Ø		'flick'
kasht'áx̲'t	it's popping	O-ka-d-sh-√t'ax̲'	Ø		'pop, explode'
at'ácht	he's slapping it	O-S-Ø-√t'ach	Ø		'slap'
at'éx̲'t	he's pounding it	O-S-Ø-√t'ex̲'	Ø		'pound, smash'
at'íyt	he's elbowing it	O-S-Ø-√t'iy	Ø		'elbow'
at'úkt	he's shooting it	O-S-Ø-√t'u'k	Ø		'shoot (arrow)'
atsákt	he's poking it	O-S-Ø-√tsak̲	Ø/n		'poke'
atséx̲t	he's kicking it	O-S-Ø-√tsex̲	Ø		'kick'
asatséx̲'t	he's strangling it	O-sa-S-Ø-√tsex̲'	Ø		'strangle'
atsúwt	he's sticking it	O-S-Ø-√tsuw	Ø	-Hμ	'stick, push'
atsúx̲t	he's blocking it	O-S-Ø-√tsu'x̲	Ø	-Hμ	'block, dam'
ats'ík'wt	he's pinching it	O-S-Ø-√ts'ik'w	Ø/g	-Hμ	'pinch'
a.únt	he's shooting it	O-S-Ø-√.un	Ø		'shoot (gun)'
awál't	he's breaking it	O-S-Ø-√wal'	Ø	-Hμ	'break'
axít't	he's sweeping it	O-S-Ø-√xit'	g̲		'sweep, brush'
ax'íx't	he's nipping it	O-S-Ø-√x'ix'	Ø		'nip'
aklax̲út't	he's adzing it	O-ka-S-l-√x̲ut'	Ø/g̲	-Hμ	'adze'

Table 4: Assorted ictive event verbs with lexical *-t* repetitive imperfectives

is *n*-conjugation with the *-μ* stem in the perfective aspect whereas the 'hit, stab' verb in (57b) is *∅*-conjugation with the characteristic *-H* stem.

(57) a. aawagwaal *n-conj. perfective*
a- wu- ∅- ∅- ∅- i- √gwal-μ
3·O-PFV-3·S-[uD]-[uS]-[I]-√beat-VAR
it.PFV.he.STV.beat
'he's played it (e.g. drum)'

b. aawagwál *∅-conj. perfective*
a- wu- ∅- ∅- ∅- i- √gwal-H
3·O-PFV-3·S-[uD]-[uS]-[I]-√beat-VAR
it.PFV.he.STV.beat
'he's hit it', 'he's stabbed it'

With both conjugation class and denotation differing, it is reasonable to say that these are two different verbs. For other verbs the conjugation class does not differ or we lack sufficient data, but I feel confident in proposing that all ictive verbs with *-t* denote repeated achievements and any basic imperfectives are actually from homophonous verbs that denote activities.

The *-t* repetitive suffix is homophonous with the *-t* punctual postposition. This postposition denotes a point-like location with several readings depending on context; Leer (1991: 33) says it means "resting at" with positional imperfectives, "coming to; arriving at" with *∅*-conjugation motion derivations, and "moving about" with non-*∅*-conjugation motion derivations. The punctual denotation of both the *-t* postposition and the ictive *-t* repetitive are conceivably related. The ictive *-t* may get its iterativity from its syntactic context as a quantificational adjunct scoping over eventualities, with the locative meaning of postpositional *-t* from its syntactic context as the head of a PP.

The serial *-s'* suffix is described by Leer (1991: 245) as "a series of actions involving repeated contact with a cumulative result". It is found with a variety of different verbs, but little is known about its semantics. My label 'serial' derives from its use with sequential activities like sewing and kneading, but I have not verified if it is actually restricted to serial events. Indeed, I have no inkling of what properties a root must have to permit the use of *-s'* with it.

Table 5 lists an extensive selection of verbs that are documented with serial *-s'* repetitives. Some of the verbs in table 5 have basic imperfectives implying that they are activities, but unlike the ictive verbs discussed above it is reasonable to assume that *-s'* is compatible with durative events so I do not suggest that the basic imperfectives belong to separate lexical entries. All of the verbs in table 5 are *∅*-conjugation

but this could be accidental; elicitation is necessary to verify that non-Ø-conjugation verbs cannot have *-s'* repetitive imperfectives. There are no nominal suffixes in the language that appear similar to *-s'*, implying that this suffix is unique to verbs.

There is a fairly rare verb root √*x̲aanás'* 'raft' that may have a frozen *-s'* along with other material. This root is probably based on one of the roots √*x̲a* 'paddle' or √*x̲aʰ* 'war party'. Story & Naish (1973) give two example sentences with this verb which I analyze in (58) below. Leer (1978b: 68) mentions the noun *x̲aanás'* 'raft; fish drying rack' as well. Compare the nouns ending in *-ál'* below.

(58) a. yan awtudlix̲aanás'
yan= a- wu- tu- d- l- i- √x̲aanás'
TERM=LEX-PFV-1PL·S-[D]-[L]-[I]-√raft
TERM=PFV.we.MID.VBZ.STV.raft
'we went on a raft' (orig.) (Story & Naish 1973: 165)

b. kax'ás'ti wududlix̲aanás';
kax'ás'ti Ø- wu- du- d- l- i- √x̲aanás'
lumber 3·O-PFV-3OBV·S-[D]-[L]-[I]-√raft
lumber it.PFV.they.MID.VBZ.STV.raft
haat has aawax̲ách
haa -t has=a- wu- Ø- Ø- Ø- i- √x̲ach-H
CIS -PNCT PL= 3·O-PFV-3·S-[uD]-[uS]-[I]-√tow -VAR
here-to PL= it.PFV.they.STV.tow
'they made the lumber into a raft and towed it here' (orig.)
(Story & Naish 1973: 165)

The *-l'* suffix is known from only one verb, *O-ka-S-l-√xakw* (Ø; Achv, *-l'* Rep) 'S grind O, beat O (soapberries)', illustrated in (59) below. It is associated specifically with the root √*xakw* which refers to both grinding and to beating of soapberries (*Shepherdia canadensis*) and by extension other things like whipping cream. The noun *xákwl'i* 'soapberry' is nominalized from an unattested verb with [uS] in the classifier. Verb and noun can cooccur as in (60) repeated from Story & Naish (1973: 27).

(59) a. akawlixákw *perfective*
a- ka- wu- Ø- Ø- l- i- √xakw-H
3·O-QUAL-PFV-3·S-[uD]-[L]-[I]-√grind-VAR
it.PFV.he.CSV.STV.grind
'he ground it'

Example	*Translation*	*Lexical Entry*	*Cnj.*	*Var.*	*Gloss*
aklachéis'	he's straining it	O-ka-S-l-√cha	∅		'strain, filter'
achúks'	he's rubbing it soft	O-S-∅-√chu'k	∅	-Hμ	'rub soft'
akachúxs'	he's kneading it	O-ka-S-∅-√chux	∅	-Hμ	'massage'
algéys'	he's paying them off	O-S-s-√ge'ÿ	∅		'pay debt'
aklagíshs'	he's soaking it	O-ka-S-l-√gish	∅	-μ	'soak'
akagwáls'	he's knocking on it	O-ka-S-∅-√gwal	∅		'beat, punch'
akag̲úks'	he's squeezing it	O-ka-S-∅-√g̲u'k	∅		'squeeze'
aklahíns'	he's watering it	O-ka-S-l-√hin	∅		'water'
ashukoojeis'	he's instructing her	O-shu-ka-u-S-∅-√ja^{h}	∅		'instruct'
akakíks'	he's shaking it off	O-ka-S-∅-√ki'k	∅	-μ	'shake'
aklakéls'	he's soaking it	O-ka-S-l-√kel	∅		'soak'
ak̲éis'	he's sewing it	O-S-∅-√k̲a	∅		'sew'
alneis'	he's oiling it	O-S-l-√na^{h}	∅		'oil'
aklaneis'	he's dampening it	O-ka-S-l-√na^{h}	∅		'damp'
danáls'	he's blowing his nose	S-d-∅-√nal	∅		'steam'
ayanák̲ws'	he's baiting it	O-ya-S-∅-√nak̲w	∅		'octopus'
as'ík̲s'	he's sucking it	O-S-∅-√s'ik̲	∅	-Hμ	'suck'
altáx's'	he's biting it	O-S-s-√tax'	∅		'bite'
atíys'	he's soaking it (fish)	O-S-∅-√tiÿ	∅		'soak fish'
atíys'	he's patching it	O-S-∅-√tiÿ	∅	-Hμ	'patch'
kashtúks'	they're exploding	O-ka-d-sh-√tu'k	n		'explode, pop'
alt'eis'	he's warming it	O-S-s-√t'a^{h}	∅		'warm'
aklat'áks'	he's denting it	O-ka-S-l-√t'a'k	∅		'dent, bend in'
aklat'íx's'	he's hardening it	O-ka-S-s-√t'ix'	∅		'hard'
atsíks'	he's roasting them	O-S-∅-√tsik	∅	-Hμ	'bbq skewer'
aklaxéis'	he's dumping them	O-ka-S-l-√xa	∅/n		'pour, dump'
alxwáchs'	he's scraping it	O-S-l-√xwach	∅	-Hμ	'scrape'
akax̲íks'	it's flapping its wings	a-ka-S-∅-√x̲ik	∅		'shoulder'
ashuklax̲úx̲s'	he's composing it	O-shu-ka-S-l-√x̲ux̲	n		'call'
awoolx̲'éys'	he's encouraging them	O-ya-u-S-l-√x̲'e'ÿ	∅		'encourage'
ayík̲s'	he's marking it	O-S-∅-√yik̲	∅	-Hμ	'mark'
asyík̲s'	he's pulling them	O-S-s-√yik̲	∅	-Hμ	'pull'
akayúks'	he's shaking her	O-ka-S-∅-√yu'k	∅		'shake'

Table 5: Assorted event verbs with lexical *-s'* repetitive imperfectives

b. aklaxákwl' *repetitive imperfective*
a- ka- Ø- Ø- Ø- l- Ø- √xakw-H -l'
3·O-QUAL-PFV-3·S-[uD]-[L]-[I]-√grind-VAR-REP
it.IMPFV.he.CSV.grind.REP
'he's grinding it'

(60) xákwl'i katulaxákwl'
xákwl'i Ø- ka- Ø- tu- Ø- l- Ø- √xakw-H -l'
soapberry 3·O-QUAL-PFV-1PL·S-[uD]-[L]-[I]-√grind-VAR-REP
soapberry it.IMPFV.we.CSV.whip.REP
'we're whipping soapberries' (Story & Naish 1973: 27)

The *-l'* suffix is probably historically related to the *-s'* suffix discussed above, though the exact relationship between them is unclear (cf. Leer 1990). One possible phenomenon related to *-s'* > *-l'* is the long distance lateralization of [S] *s-* /s-/ → [L] *l-* /ɬ-/ when coronal fricatives and affricates are present in the verb stem.

The invariable root *√gúkl'* 'try hard to know how' probably has a frozen *-l'* within it. This root is only known from one note by Leer (1973: f05/176) where it surprisingly appears in an imperfective state shown in (61).

(61) akaagúkl'
a- ka- Ø- Ø- Ø- Ø- i- √gúkl'
3·O-QUAL-ZCNJ-3·S-[uD]-[uS]-[I]-√try·know
it.IMPFV.he.STV.try·know
'he is trying hard to become skilled at it' (orig.) (Leer 1973: f05/176)

It is virtually certain that *√gúkl'* is based on *√gu'k* 'know how' as in the phrase *k'idéin x̲ashigóok* 'I know how (to do it) well'. I am unsure how many people know of *√gúkl'* so it may not be possible to explore it any further through elicitation.

There are three nouns that may have frozen instances of *-l'*: *yadzánl'* 'ugly, lumpy, pock-marked face' (with *yá* 'face'), *gúnl'* 'burl (growth on tree)', and *gúk̲l'* 'swan'. The iterative semantics of *-l'* is difficult to explain for these nouns, however. There are also several nouns with a final *-ál'* which might be related to *-l'*: *táax'ál'* 'needle', *x̲'éigwál'* 'safety pin', *k̲éich'ál'* 'seam', *néegwál'* 'paint', *tsaag̲ál'* 'spear', *x̲eeygwál'* 'pack strap', *t'aag̲ál'* 'fastening peg', *shax̲'éex'wál'* 'hair clip'. All of these nouns are based on roots with *-ál'* suffixes such as *táax'ál'* 'needle' < *√tax'* 'bite' + *-ál'* and *tsaag̲ál'* 'spear' < *√tsak̲* 'poke' + *-ál'*.

The unique repetitive imperfective in (62) below with *-ál'* is probably related to the *-ál'* suffix on nouns. This form is based on the verb *O-S-Ø-√chux'* (*Ø*; *-Hμ*) 'S rub,

massage O'. There are no other examples of this form besides Leer's mention, and no other verbs are known to occur with *-ál'*.

(62) achóox'ál'
a- ∅- ∅- ∅- ∅- ∅- √chux'-Hμ -ál'
3·O-ZCNJ-3·S-[uD]-[uS]-[uI]-√rub -VAR-REP?
it.IMPFV.he.rub.REP?
'he is rubbing it, massaging it briskly' (orig.) (Leer 1976: 598)

The root *√chux'* in (62) is connected to the root *√chu'k* 'rub to make soft' but their relationship is unclear. The meaning of *√chux'* itself is also problematic. Verbs with *√chux'* are translated by Story & Naish (1973: 232) as meaning 'only just touch; touch lightly', as shown by their example sentences which I analyze in (63).

(63) a. ash uwachúx'
ash= u- ∅- ∅- ∅- i- √chux'-H
3PRX·O=PFV-3·S-[uD]-[uS]-[I]-√rub -VAR
him= PFV.it.STV.rub
'it only just touched him (tree being felled)' (orig.) (Story & Naish 1973: 232)

b. yoo awlichúx'
yoo=a- wu- ∅- ∅- l- i- √chux'-H
ALT=3·O-PFV-3·S-[uD]-[L]-[I]-√rub -VAR
ALT=him.PFV.he.STV.CSV?.rub
'he touched him lightly (to get his attention)' (orig.) (Story & Naish 1973: 232)

c. táach yaa najáḵ:
tá -ch yaa= ∅- n- ∅- ∅- ∅- ∅- √jaḵ-H
sleep-ERG along=3·O-ZCNJ-3·S-[uD]-[uS]-[uI]-√kill-VAR
sleep-ERG along=him.IMPFV.PROG.it.kill
yoo lachúx'
yoo=∅- ∅- ∅- ∅- l- ∅- √chux'-H
ALT=3·O-ZCNJ-2SG·S-[uD]-[uS]-[uI]-√rub -VAR
ALT=him.IMP.you·SG.rub
'he's falling asleep: touch him gently to rouse him!' (orig.)
(Story & Naish 1973: 232)

Leer (1976: 598) however gives the 'rub, massage briskly' translation for one set of verbs with this root and Story & Naish's translation for another set apparently taken from their dictionary. Were the difference only the absence versus presence of [L] we might ascribe this to the classifier, but the first sentence with [uS] in (63) does not fit

a classifier-based explanation. Unfortunately questions about the meaning of √*chux'* only complicate the our understanding of *-ál'* and its relationship with *-l'*.

The plural *-x'* suffix is obviously homophonous with the plural noun suffix *-x'*. Repetitives with *-x'* probably always involve multiple objects as well as multiple events as I said for their pluristate counterparts in section 6.2, but this still needs to be verified. It could be that plurality of subeventualities entails unique object referents for each (i.e. distributivity). But it could also be that a repetitive imperfective with *-x'* might refer to a single eventuality that involves plural objects, in which case the *-x'* is really only pluralizing entities and not eventualities. These possibilities should be empirically distinguishable, but all examples of verbal *-x'* that I have encountered have been potentially ambiguous between these two readings.

The plural *-t'* suffix seems to have a similar plural object entailment as *-x'*, but this needs to be verified by elicitation. Leer (1991: 245) describes *-t'* as denoting an "action involving destruction of discrete multiple entities", with verbs like *x̲asagánt'* 'I'm burning them' in (55h) above as his basis. But there are other verbs like *x̲asakweit'* 'I know each of them' in (64) below that cannot reasonably involve destruction. Currently I cannot explain how *-t'* is semantically different from *-x'*, but I have a hunch that they relate to abstract versus concrete eventualities and that destruction is epiphenomenal. The *-t'* repetitive suffix has no homophonous suffixes elsewhere.

(64) x̲asakweit'
Ø- Ø- x̲- Ø- s- Ø- √ku^{h} -μ -t'
3·O-ZCNJ-1SG·S-[uD]-[S]-[uI]-√know-VAR-PL
it.IMPFV.I.know.PL
'I know each of them'

The form with *-t'* in (65) is interesting because it explicitly signals the plurality of the sole argument with the plural *has=* marker. This *has=* is only used for animate third person referents as far as I am aware. The lack of stem ablaut for √*na^{w}* 'die' is a lexical irregularity as I mentioned earlier in section 6.2.

(65) has náat'
has=Ø- Ø- Ø- Ø- Ø- √na^{w}-Hμ -t'
PL= 3·O-ZCNJ-[uD]-[uS]-[uI]-√die -VAR-PL
PL= him.IMPFV.die.PL
'they are dying off'

More lexical review and research is needed to empirically assess how these pairs (or even triplets?) are related. I suspect that any verb could grammatically support any of the repetitive suffixes. Pragmatic and encyclopedic knowledge partially limits

Example	*Translation*	*Lexical Entry*	*Cnj.*	*Var.*	*Gloss*
ach'ínx'	he's tying it	O-S-Ø-√ch'i'n	Ø	-Hμ	'tie (bow)'
ayadlákx'w	he's winning them	O-ya-S-Ø-√dlak	n		'win, obtain'
aklagíshx'	he's soaking it	O-ka-S-l-√gish	Ø	-μ	'soak'
aksahánx'w	he's cutting it in strips	O-ka-S-s-√han	Ø/g	-Hμ	'fringe'
aksahátx'	he's covering them	O-ka-S-s-√hat	Ø/n	-Hμ	'cover'
aheex'	he's paying him (shaman)	O-S-Ø-√hi^{h}	n		'pay shaman'
alhítsx'w	he's singeing them	O-S-l-√hits	Ø	-Hμ	'singe'
ayalakánx'	they're dancing in return	O-ya-S-l-√kan	Ø		'wave (flag)'
akwáchx'	he's carrying them	O-S-Ø-√kwach	n		'handful'
ak'wáchx'	he's breaking it	O-S-Ø-√k'wach	Ø		'break (joint)'
anéix'	he's inheriting them	O-S-Ø-√na	Ø		'inherit'
aklanálx'	he's steaming them	O-ka-S-l-√nal	Ø		'steam'
aklanáashx'	he's shaking it off	O-ka-S-l-√náásh	Ø		'shake'
alsínx'	he's hiding them	O-S-l-√sin	Ø		'hide'
kasóosx'w	they're falling	O-ka-Ø-√sóós	g		'(ball) fall'
kadus'ís'x'	wind blows them around	O-ka-du-Ø-√s'is	n		'blow'
atíyx'w	he's soaking them (fish)	O-S-Ø-√tiÿ	Ø		'soak fish'
atúlx'w	he's drilling them	O-S-Ø-√tul	n	-Hμ	'drill'
x̲'adatóolx'w	they're murmuring	x̲'a-S-d-Ø-√tóól	n		'murmur'
kashtúkx'	they're exploding	O-ka-d-sh-√tu'k	n		'explode, pop'
altúx̲x'	he's spitting it out	O-S-l-√tux̲	n	-Hμ	'spit'
ast'áyx'	he's warming them	O-S-s-√t'a^{h}	Ø		'warm'
ashatlékwx'	he's snatching them	O-sha-S-Ø-√tlekw	n		'snatch'
aklatsísx'w	he's putting corks on them	O-ka-S-l-√tsis	Ø		'bob, float'
atsúwx'	he's sticking them	O-S-Ø-√tsuw	Ø	-Hμ	'stick, push'
asxát'x'	he's dragging them	O-S-s-√xat'	n	-Hμ	'drag'
alxwáchx'	he's tanning them	O-S-l-√xwach	Ø	-Hμ	'tan (scrape)'
alxwénx'	he's dishing it out	O-S-l-√xwe'n	Ø/n	-Hμ	'dish, ladle'
ayáax'w	he's packing them	O-S-Ø-√ya	n	-Hμ	'pack (carry)'
aklayénx'	he's waving it	O-ka-S-l-√ye'n	Ø	-Hμ	'wave'
ax̲áchx'	he's towing them	O-S-Ø-√x̲ach	Ø/n	-Hμ	'tow'
awoolx̲'éyx'	he's encouraging them	O-ya-u-S-l-√x̲'e'ÿ	Ø		'encourage'
ayíkx̲'	he's mouthing them	O-S-Ø-√yik	g		'bite'
asyíkx̲'	he's pulling them	O-S-s-√yik	Ø	-Hμ	'pull'

Table 6: Assorted event verbs with lexical *-x'* repetitive imperfectives

Example	*Translation*	*Lexical Entry*	*Cnj.*	*Var.*	*Gloss*
asgánt'	he's burning them	O-S-s-√gan	g̲		'burn'
as.héit'	he's erasing it	O-S-s-√ha	n		'invisible'
ashkél't'	he's making ash of it	O-S-sh-√kel'	∅		'ash'
askweit'	he knows them	O-S-s-√ku^{h}	∅		'know'
has náat'	they're dying off	O-∅-√na	n		'die'
alxoosht'	he's scorching them	O-S-l-√xóȯsh	n/g̲		'scorch, singe'

Table 7: Assorted event verbs with lexical *-t'* repetitive imperfectives

the possible combinations because the meanings of some repetitives may be incompatible with particular root meanings. But given a suitable set of contexts, it may be possible to give one verb root with every single repetitive imperfective. Having more than one of Leer's 'primary imperfectives' is then merely an emergent artifact of the classification system he proposes, and so requires no analytical explanation.

6.4. Multiple repetitive suffixes

There are a few unusual repetitives that Leer calls 'multiple-iterative imperfectives'. He claims these denote an event "where multiple objects undergo a process or event non-simultaneously" (Leer 1991: 239). Leer gives a couple of examples which I analyze here for illustration (Leer 1991: 248, 253).

(66) a. x̲at'éetx'
Ø- Ø- x̲- Ø- Ø- Ø- √t'i -Hμ -t -x'
3·O-ZCNJ-1SG·S-[uD]-[uS]-[uI]-√find-VAR-REP-REP
it.IMPFV.I.find.REP.REP
'I am finding them'

b. yéi tíx̲x'w
yéi= Ø- Ø- Ø- Ø- Ø- √ti -H -x̲ -x'w
thus=3·O-ZCNJ-[uD]-[uS]-[uI]-√be-VAR-REP-REP
thus=it.IMPFV.be.REP.REP
'they are so repeatedly'

The verb in (66a) has two repetitive suffixes, the ictive *-t* and the plural *-x'*. The *-t* is not otherwise documented with the root *√t'i* 'find' but it does appear frozen in the verb for beachcombing, e.g. *ku̲x̲wdlit'éet* (pfv.) 'I was beachcombing' and *éek̲t k̲unalt'éetch* (hab.) 'he always looks for things on the beach'. Given that finding is an achievement, it could be metaphorically viewed as an ictive event of contact with

the found object, thus permitting *-t*. The rarity of *-t* with √*t'i* 'find' outside of frozen forms may be due to loss of the metaphor.

The verb in (66b) has the same *-x'* (the labialization is as yet unexplained but likely predictable) but instead of *-t* it has the *-x̲* repetitive suffix. The use of *-x̲* with the √*ti* 'be, exist' verb is unusual because *yéi yatee* (impfv.) 'it is so' is *n*-conjugation and *-x̲* is inflectionally predicted only for *∅*-conjugation verbs as shown in section 6.1. This hints at some kind of specific meaning for *-x̲* since it is otherwise unexpected, but I have no idea of what *-x̲* should specifically mean beyond mere iterativity.

Among the derivations of motion verbs are the multipositionals that denote the state of being in multiple locations. Some are formed with the *-k* repetitive suffix, but if the verb root is an open syllable then its multipositional has both *-kw* and *-t*.

(67)

wé	dei	káx̲	naadákwt							
wé	dei	ká	-x̲	∅-	n-	∅-	∅-	i-	√da	-H -kw -t
D·MDST	path	HSFC-PERT		3·O-NCNJ-[uD]-[uS]-[I]-√flow-VAR-REP-REP						
the	path	atop	-on	it.EXT.IMPFV.STV.flow.REP.REP						

'they (puddles) lie here and there along the path'

I believe multipositionals are derived from extensional states. The extensional state construction is discussed in section 7. Extensional states are derived from motion roots like √*da* 'flow' but are also formed from some state roots like √*dlan* 'deep'. They always include a non-*∅* conjugation prefix, usually *n-* but with *g̲-* or *g-* if the path vector is generally downward or upward respectively. When formed from motion verbs they denote a state where motion is viewed as extended along a vector. The canonical English counterpart is 'the river flows along the valley floor', but this is arguably not a state whereas the Tlingit verb *naadaa* 'it flows' is explicitly a state with [I] in the classifier. Multipositionals are derived from extensionals by iterating the position where the state holds. This results in the state holding at multiple points along the vector of the underlying motion. Essentially, multipositionals are iterative, pluristative derivations of extensional states.

The multipositionals and Leer's 'multiple iterative' where two repetitive suffixes appear together are the only contexts I know of where more than one repetitive suffix regularly occurs in a verb. I do not know if anyone has tried to elicit multiple repetitives in other contexts. Further review of the lexical documentation and of narrative and oratory might turn up other contexts that warrant more exploration.

7. Motion verbs and telicity in Tlingit

At this point we have seen state verbs, activity verbs, and achievement verbs as contrastive lexical items in the Tlingit language. This leaves accomplishments unac-

counted for. An accomplishment is a durative telic event, one which takes time to complete and which has a necessary endpoint. Motion verbs are a potential candidate for this subclass of events, but identifying motion verbs as accomplishments is complicated by many aspectual and derivational issues.

A MOTION VERB in Tlingit is a verb that denotes an entity's change of location along some path in space. Motion verbs are intransitive but can be either unergative or unaccusative. The difference between unergative and unaccusative is lexical and essentially unpredictable, but there are strong heuristics based on the pragmatic control of the event. When an entity controls its change of location the verb is usually unergative, and when the entity lacks control the verb is usually unaccusative. The sentences in (68) illustrate some typical unergative motion verbs and (69) some typical unaccusative ones.

(68) a. *unergative motion verbs*
neildé xwaakoox
neil -dé wu- x- ∅- ∅- i- √kux -µ
home-ALL PFV-1SG·S-[uD]-[uS]-[I]-√go·veh-VAR
home-ward PFV.STV.I.go·by·vehicle
'I boated/drove toward home'

b.
dei kaanáx wutuwa.aat
dei ká -náx wu- tu- ∅- ∅- i- √.at -µ
road HSFC-PERL PFV-1PL·S-[uD]-[uS]-[I]-√go·PL-VAR
roat top -along PFV.we.STV.go·PL
'we walked along the road'

(69) a. *unaccusative motion verbs*
k'úns' daak kaawaxíx
k'úns' daak= ∅- ka- wu- ∅- ∅- i- √xix -H
potato ADTER=3·O-QUAL-PFV-[uD]-[uS]-[I]-√mv·space-VAR
potato down= it.PFV.STV.move·thru·space
'the potato fell (on the floor, to the ground)' (Story & Naish 1973: 87)

b.
yaakw héent uwalít
yaakw héen -t ∅- u- ∅- ∅- i- √lit -H
boat water-PNCT 3·O-PFV-[uD]-[uS]-[I]-√slide-VAR
boat water-into it.PFV.STV.slide
'the canoe slid into the water' (Story & Naish 1973: 196)

HANDLING VERBS are the transitive counterparts of motion verbs where the subject controls the object's change of location.[21] Many handling verbs are sensitive to

21. Handling verbs are often treated like a subtype of motion verbs, so that 'motion verb' describes any verb denoting a change of location regardless of its transitivity.

the number of entities being handled (plurality) or their physical shape and consistency (qualia).[22] This sensitivity is seen by the use of different roots as well as the presence of qualifer prefixes like *ka-* 'small round object'. Some handling verbs are basic transitive verbs with unique roots as in (70) but others are causativized from intransitive motion verbs as in (71).

(70) a. k'wátl yaa anatán *transitive handling verbs*
k'wátl yaa= a- n- Ø- Ø- Ø- Ø- √tan -H
pot along=3·O-NCNJ-3·S-[uD]-[uS]-[uI]-√handle-VAR
pot along=it.PROG.he.handle
'he's carrying a pot' (Story & Naish 1973: 42)

b. ax̲ x'úx'u gáant aawagíx'
ax̲ x'úx'-í gáan -t a- wu- Ø- Ø- Ø- i- √gix' -H
my book-PSS outside-PNCT 3·O-PFV-3·S-[uD]-[uS]-[I]-√throw-VAR
my book outside-to it.PFV.he.STV.throw
'he threw my book outside' (Story & Naish 1973: 227)

(71) a. hasdu een át xwalileet *causative handling verbs*
has-du ee -n á -t Ø- wu- x̲- Ø- l- i- √lit -µ
PL- 3H BASE-INSTR 3N -PNCT 3·O-PFV-1SG·S-[uD]-[L]-[I]-√slide-VAR
them with there-at it.PFV.I.CSV.STV.slide
'I slid it (sled) around there with them on it' (Story & Naish 1973: 196)

b. geey tá déilit awsikúx du yaagú
geey tá déil -í -t a- wu-Ø- Ø- s- i- √kux̲ -H du yaakw-í
bay head shelter -PSS-PNCT 3·O-PFV-3·S-[uD]-[S]-[I]-√go·veh-VAR 3H·PSS boat -PSS
bay head shelter -to it.PFV.she.CSV.STV.go·boat her boat
'she drove her boat to the head of the bay' (orig.) (Edwards 2009: 171)

As can be seen in (68)–(71) above, motion and handling verbs usually have a PP that denotes the source or goal location for the movement, or sometimes the path of the movement without a specified source or goal. We can generally speak of a PATH ARGUMENT for motion verbs which subsumes sources, goals, and paths. Expressing both source and goal with two PPs is extremely rare if not actually impossible, but I have never tested this. Likewise I have not tried pairs of source + path and goal + path, so these are low hanging fruit for new elicitation work.

22. Verbs sensitive to qualia are traditionally known as 'classfiicatory verbs' in Na-Dene languages. See e.g. Hoijer 1945; Landar 1967; Krauss 1968; Basso 1968; Dauenhauer & Dauenhauer 1971; Witherspoon 1971; Carter 1976; Cook 1986; Rushforth 1991; Axelrod 2000; de Reuse 2001; Meek & Jules 2001; Fernald 2002; Poser 2005.

None of the examples in (68)–(71) above are basic imperfectives; this is not an accident. Motion verbs do not seem to have basic imperfective forms. They also lack inflectional repetitive imperfective forms, instead having unique repetitive imperfectives specified by their motion derivations. I explain motion derivations later in this section. I am not certain if any motion verbs have lexical repetitive imperfectives, but I suspect that at least some kinds of lexical repetitives may be possible given the right contexts for their use.

Leer (1991: 293–295) offers a list of the most significant motion and handling verbs, divided into groups based on transitivity and control. I repeat his list in table 8. The first group is intransitive controlled motion, the second group is intransitive uncontrolled, the third transitive controlled, and the fourth transitive uncontrolled. The examples given are all *n*-conjugation motion derivations without a PP, denoting goalless motion in an unspecified lateral direction. There is no stem variation column because motion verbs do not have basic imperfective aspect forms. The rightmost column labelled 'Cf. Root' gives a comparable root for the verb, showing how some motion verbs are based on more general roots than others.

7.1. Motion derivation

Motion verbs are not lexically specified for conjugation class or inflectional repetitive imperfective forms. Instead motion verbs must be derived to add these properties before other inflection is applied. The MOTION DERIVATIONS are the derivational material and properties added to motion verbs to make them inflectable. There are many motion derivations; I give an extensive list in an appendix on page 83 but this probably misses some more obscure ones. The simplest motion derivations are the three which add a conjugation class and a repetitive imperfective, but most motion derivations also add a PP denoting a path argument or an adverb denoting a manner. The forms in (72) illustrate this with imperatives of the same verb √*gut* 'sg. go' in four different motion derivations.[23] Imperatives are used because they explicitly indicate the conjugation class.

(72) a. yú hítt gú *Ø-conjugation*
yú hít -t Ø- Ø- Ø- Ø- Ø- √gut -⊗
D·DIST house-PNCT ZCNJ-2SG·S-[uD]-[uS]-[uI]-√GO·SG-VAR
that house-to IMP.you.go·SG
'go to that house'
with *NP*-{*t,x,dé*} (*Ø*; -*μ* Rep) 'arriving at NP'

23. The root √*gut* 'sg. go', like √*.at* 'pl. go' and √*nuk* 'sg. sit', irregularly loses its final consonant in the imperative as symbolized by -⊗ stem variation.

	Example	*Translation*	*Lexical Entry*	*Gloss*	*Cf. Root*
intr. controlled	has woo.aat	they went	S-∅-√.at	'pl. go'	
	yaawagoo	they boated	O-ya-∅-√gu	'pl. boat in fleet'	√gu 'poke'
	woogoot	he went	S-∅-√g̲ut	'sg. go (by foot)'	
	wudik̲een	it flew	S-d-∅-√k̲in	'sg. fly'	
	wook̲ook̲	he boated	S-∅-√k̲ux̲	'go by boat, vehicle'	
	kawdliyeech	they flew	O-ka-d-l-√yich	'pl. fly'	
intr. uncontrolled	woo.aa	it extended	O-∅-√.a	'end move, extend'	
	wudzigeet	he fell	O-d-s-√git	'sg. anim. move through space'	
	wudig̲aat	they scattered	O-d-∅-√g̲at	'pl. fall scattered'	√g̲at 'split, fall apart'
	kaawasóos	they fell, flew	O-ka-∅-√sóós	'pl. move through space'	
	wooxeex	it fell, flew	O-∅-√xix	'sg. move through space'	
	wujix̲een	it fell, flew	O-d-sh-√x̲in	'sg. wood/container mv thru space'	
transitive controlled	awli.aat	he handled them	O-S-l-√.at	'handle pl. inan./unconsc./dead'	√.at 'pl. go'
	awsi.een	he handled it	O-S-s-√.in	'handle sg. filled container'	√.in 'gather'
	akawlijeil	he handled them	O-ka-S-l-√jel	'handle bunch'	√jel 'grope'
	awsik̲ee	he handled them	O-S-s-√k̲i	'handle pl. animate'	√k̲i 'pl. sit'
	awsinook	he handled it	O-S-s-√nuk	'handle sg. animate'	√nuk 'sg. sit'
	awsitaa	he handled it	O-S-s-√ta	'handle sg. unconscious/dead'	√ta 'sleep'
	aawataan	he handled it	O-S-∅-√tan	'handle sg. wood/container'	
	aawatee	he handled it	O-S-∅-√ti	'handle sg. generic'	√ti^{h} 'be, exist'
tr. unctl.	aawag̲eech	he pitched them	O-S-∅-√g̲ich	'throw pl.'	l-√g̲ich 'fell tree'
	aawag̲eex'	he pitched it	O-S-∅-√g̲ix'	'throw sg. inanimate'	
	aawax̲eech	he pitched it	O-S-∅-√x̲ich	'throw sg. wood/container'	√x̲ish 'club'

Table 8: Assorted motion verbs and their perfective forms

b. neildé nagú *n-conjugation*
neil -dé n- Ø- Ø- Ø- Ø- √gut -⊗
home-ALL NCNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
home-ward IMP.you.go·SG
'go toward home'
with *NP-dé* (*n*; *yoo*=[*I*]-…-*k* Rep) 'toward NP'

c. yaax̲ g̲agú *g̲-conjugation*
yaax̲= g̲- Ø- Ø- Ø- Ø- √gut -⊗
INVEH= G̲CNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
aboard=IMP.you.go·SG
'get aboard'
with *yaax̲=* (*g̲*; *-ch* Rep) 'aboard'

d. wé kóok̲dáx̲ gagú *g-conjugation*
wé kóok̲-dáx̲ g- Ø- Ø- Ø- Ø- √gut -⊗
D·MDST pit -ABL GCNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
that pit -from IMP.you.go·SG
'go up from that pit'
with *NP-dáx̲* (*g*; *-ch* Rep) 'up from NP'

Each motion derivation determines not only the conjugation class but also the repetitive imperfective form. The repetitive imperfectives in (73) correspond to each of the four previous verbs in (72) above.

(73) a. yú hítx̲ igoot *Ø-conjugation*
yú hít -x̲ Ø- i- Ø- Ø- Ø- √gut -μ
D·DIST house-PERT ZCNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
that house-to IMPFV.you.go·SG
'you go to that house repeatedly'
with *NP-{t,x̲,dé}* (*Ø*; *-μ* Rep) 'arriving at NP'

b. neildé yoo iyagútk *n-conjugation*
neil -dé yoo=Ø- i- Ø- Ø- i- √gut -H -k
home-ALL ALT=ZCNJ-2SG·S-[uD]-[uS]-[I]-√go·SG-VAR-REP
home-ward IMPFV.you.STV.go·SG.REP
'you go toward home repeatedly'
with *NP-dé* (*n*; *yoo*=[*I*]-…-*k* Rep) 'toward NP'

c. yaax̲ igútch *g-conjugation*
yaax̲= Ø- i- Ø- Ø- Ø- √gut -H -ch
INVEH= ZCNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR-REP
aboard=IMPFV.you.go·SG.REP
'you get aboard repeatedly'
with *yaax̲=* (*g*; *-ch* Rep) 'aboard'

d. wé kóok̲dáx̲ igútch *g-conjugation*
wé kóok̲-dáx̲ Ø- i- Ø- Ø- Ø- √gut -H -ch
D·MDST pit -ABL ZCNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR-REP
that pit -from IMPFV.you.go·SG.REP
'you go up from that pit repeatedly'
with *NP-dáx̲* (*g*; *-ch* Rep) 'up from NP'

These repetitive imperfectives are similar but not identical to the ones predictable from conjugation classes (see sec. 6.1). There are other motion derivations which select repetitive imperfective forms quite different from the inflectional repetitives of non-motion verbs. The following examples of Ø-conjugation derivations illustrate two that would be otherwise unexpected for a Ø-conjugation verb, one with *-ch* and one with *-x̲*.

(74) a. a x̲'éi kei igútch *Ø-conjugation with -ch*
a x̲'é -μ kei=Ø- i- Ø- Ø- Ø- √gut -H -ch
3N.PSS mouth-LOC up= ZCNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR-REP
its mouth-at up= IMPFV.you.go·SG.REP
'you keep catching up to it'
with *NP x̲'é-x̲' kei=* (Ø; *-ch* Rep) 'catching up with NP'

b. gági igútx̲ *Ø-conjugation with -x̲*
gági= Ø- i- Ø- Ø- Ø- √gut -H -x̲
ABUMB=ZCNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR-REP
dark= IMPFV.you.go·SG.REP
'you repeatedly emerge from the shadows'
with *gági=* (Ø; *-ch* Rep) 'emerging out of shadow/hiding'

Although most motion derivations provide repetitive imperfectives, they do not specify any basic imperfective forms. The closest approximation is the Ø-conjugation derivation with *NP-{t, x̲, dé}* that has the stem shape *-μ* (long and low), seen in (73a) above. Although according to my earlier morphological definition this should be a basic imperfective, it has iterative semantics and does not ever seem to denote a simple activity. The iterativity could conceivably be associated with the *-x̲* postposition, but this does not always have iterative semantics in other contexts.

The vast majority of motion derivations have either a fixed PP or manner adverb. But there are three derivations which lack either, as I mentioned earlier. These three *n-*, *g̲-*, and *g*-conjugation motion derivations are illustrated in (75) with imperatives making their conjugation classes explicit. There is no equivalent *∅*-conjugation motion derivation without a PP or adverb.[24]

(75) a. *gú *PP-less ∅-conjugation*
∅- ∅- ∅- ∅- ∅- √gut -⊗
ZCNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
IMP.you.go·SG
intended: 'go'

b. nagú *PP-less n-conjugation*
n- ∅- ∅- ∅- ∅- √gut -⊗
NCNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
IMP.you.go·SG
'go'

c. gagú *PP-less g̲-conjugation*
g̲- ∅- ∅- ∅- ∅- √gut -⊗
G̲CNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
IMP.you.go·SG
'go down'

d. gagú *PP-less g-conjugation*
g- ∅- ∅- ∅- ∅- √gut -⊗
GCNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
IMP.you.go·SG
'go up'

Most motion derivations with PPs select a single postposition, but there are a handful of *∅*-conjugation motion derivations that select one of three postpositions depending on the aspect of the verb. All of these derivations are elaborations on the basic *NP-*{*t,x̲,dé*} (*∅*; *-μ* Rep) 'arriving at NP', so I look at that derivation in particular. The three postpositions in the PP *NP-*{*t,x̲,dé*} are the punctual *-t*, the pertingent *-x̲*, and the allative *-dé*. I previously noted the punctual and pertingent in section 6.3 in the context of lexical repetitive imperfectives. The punctual *-t* has the meanings "resting at", "coming to, arriving at", and "moving around" in various contexts (Leer 1991: 33). The pertingent *-x̲* means variously "in prolonged contact at", "repeatedly arriving at", and "being, in the form of" depending on context (Leer 1991: 33). The

24. There is an interjection *gúk* 'go!' but this is not actually a verb.

allative *-dé* simply means "toward" in spatial reference, although it can mean "in the way/manner of" in some specialized constructions (Leer 1991: 33). As illustrated in (76)–(78), in the progressive and prospective aspects the PP *NP-{t,x̲,dé}* is headed by allative *-dé* (76), in the (repetitive) imperfective aspect the PP is headed by pertingent *-x̲* (77), and in all other contexts it is headed by punctual *-t* (78).

(76) a. aandé yaa nx̲agút *progressive with -dé*
aan -dé yaa= n- x̲- Ø- Ø- Ø- √gut -H
town-ALL along=NCNJ-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
town-ward along=PROG.I.go·SG
'I'm going toward town'

b. aandé kk̲wagóot *prospective with -dé*
aan -dé w- g- g̲- x̲- Ø- Ø- Ø- √gut -Hμ
town-ALL IRR-GCNJ-MOD-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
town-ward IRR.PRSP.MOD.I.go·SG
'I'm going to go toward town'

(77) aanx̲ x̲agoot *repetitive imperfective with -x̲*
aan -x̲ Ø- x̲- Ø- Ø- Ø- √gut -μ
town-PERT ZCNJ-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
town-to IMPFV.I.go·SG.REP
'I go (get) to town repeatedly'

(78) a. aant x̲waagút *perfective with -t*
aan -t wu- x̲- Ø- Ø- i- √gut -H
town-PNCT PFV-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
town-to PFV.I.go·SG
'I went (got) to town'

b. aant gú *imperative with -t*
aan -t Ø- Ø- Ø- Ø- Ø- √gut -⊗
town-PNCT ZCNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
town-to IMP.you·SG.go·SG
'go to town'

c. aant x̲wagootch *habitual with -t*
aan -t u- x̲- Ø- Ø- Ø- √gut -μ -ch
town-PNCT PFV-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR-REP
town-to HAB.I.go·SG
'I always go to town', 'I've gone to town often'

The *NP-{t,x̲,dé}* (*∅*; *-μ* Rep) motion derivation has several derivations based upon it. These additional derivations replace the NP with a specific noun like *neil* 'home', but with some irregularities. The noun *neil* irregularly lacks the punctual *-t* in this context.

(79) a. neil xwaagút *perfective*
neil -t wu- x̲- ∅- ∅- i- √gut -H
home-PNCT PFV-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
home-to PFV.I.go·SG
'I went (got) home'

b. neilx̲ x̲agoot *repetitive imperfective*
neil -x̲ ∅- x̲- ∅- ∅- ∅- √gut -μ
home-PERT ZCNJ-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
home-to IMPFV.I.go·SG.REP
'I go (get) home repeatedly'

c. neildé yaa nx̲agút *progressive*
neil -dé yaa= n- x̲- ∅- ∅- ∅- √gut -H
home-ALL along=NCNJ-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
home-ward along=PROG.I.go·SG
'I'm going home'

The noun *yán* 'shore' has gained a 'termination' meaning by analogy with the termination of a boating journey at the shoreline. When used for termination I usually gloss *yán* as TERM instead of 'shore'. This terminative derivation has been extended beyond motion verbs and can be applied felicitously to any eventuality that permits termination. Like *neil* 'home' the punctual *-t* has disappeared. In addition the nasal coda of *yán* 'shore' has been lost with the pertingent *-x̲*, and both have lost high tone presumably because they are incorporated into the verb's phonological phrase.

(80) a. yan xwaagút *perfective*
yán -t wu- x̲- ∅- ∅- i- √gut -H
shore-PNCT PFV-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
shore-to PFV.I.go·SG
'I went (got) to shore', 'I finished going'

b. yax̲ x̲agoot *repetitive imperfective*
yán -x̲ ∅- x̲- ∅- ∅- ∅- √gut -μ
shore-PERT ZCNJ-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
shore-to IMPFV.I.go·SG.REP
'I go (get) to shore repeatedly', 'I repeatedly finish going'

c. yánde yaa nx̲agút *progressive*
yán -dé yaa= n- x̲- Ø- Ø- Ø- √gut -H
shore-ALL along=NCNJ-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
shore-ward along=PROG.I.go·SG
'I'm going to shore', 'I'm finishing going'

The cislocative *haa* CIS 'here' is only found with the *NP-{t,x̲,dé}* (*Ø*; *-μ* Rep) motion derivation and in interjections like *haahée* 'gimme' and *haandé* 'over here'. An intrusive *n* usually appears with the allative *-dé*, but it is sometimes absent for unclear reasons.[25] The punctual *-t* is never absent, presumably because of the open syllable.

(81) a. haat x̲waagút *perfective*
haa -t wu- x̲- Ø- Ø- i- √gut -H
here-PNCT PFV-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
here-to PFV.I.go·SG
'I came (got) here'

b. haax̲ x̲agoot *repetitive imperfective*
haa -x̲ Ø- x̲- Ø- Ø- Ø- √gut -μ
here-PERT ZCNJ-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
here-to IMPFV.I.go·SG.REP
'I come (get) here repeatedly'

c. haandé yaa nx̲agút *progressive*
haa -dé yaa= n- x̲- Ø- Ø- Ø- √gut -H
here-ALL along=NCNJ-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
here-ward along=PROG.I.go·SG
'I'm coming here'

The *-dé* forms in the progressive and prospective aspects are interestingly ambiguous with another motion derivation, namely *NP-dé* (*n*; *yoo*=[*I*]-…*-k* Rep) 'toward NP'. This derivation always has allative *-dé* regardless of aspect. The forms in (82) for the progressive and prospective aspects are grammatical for either the *NP-{t,x̲,dé}* (*Ø*) or the *NP-dé* motion derivations.

(82) a. aandé yaa nx̲agút *progressive*
aan -dé yaa= n- x̲- Ø- Ø- Ø- √gut -H
town-ALL along=NCNJ-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
town-ward along=PROG.I.go·SG
'I'm going toward town'

25. Compare the intrusive nasal in *shá* 'head' + *tú* 'inside' → *shantú*. Cislocative *haa* 'here' is probably related to *uháan* 'us', *yeewháan* 'you pl.', and the mesioproximal determiner *hé* 'over here'.

b. aandé kx̲wagóot *prospective*
aan -dé w- g- g̲- x̲- Ø- Ø- Ø- √gut -Hμ
town-ALL IRR-GCNJ-MOD-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
town-ward IRR.PRSP.MOD.I.go·SG
'I'm going to go toward town'

In contrast, the perfective and repetitive imperfective for the *NP-dé* (*n*) derivation are distinct from those of the *NP-*{*t,x̲,dé*} (*Ø*) derivation. The perfective has allative *-dé* instead of punctual *-t* and *-μ* stem variation instead of *-H*. The repetitive imperfective has allative *-dé* instead of pertingent *-x̲* and the typical *n*-conjugation *yoo=*[*I*]*-…-k* repetitive pluristate imperfective rather than the *-μ* repetitive imperfective of the *NP-*{*t,x̲,dé*} (*Ø*) derivation.

(83) a. aandé x̲waagoot *perfective*
aan -dé wu- x̲- Ø- Ø- i- √gut -μ
town-ALL PFV-1SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
town-ward PFV.I.go·SG
'I went (got) toward town'

b. aandé yoo x̲aagútk *repetitive pluristate imperfective*
aan -dé yoo=Ø- x̲- Ø- Ø- i- √gut -H -k
town-ALL ALT=ZCNJ-1SG·S-[uD]-[uS]-[I]-√go·SG-VAR-REP
town-ward ALT=IMPFV.I.STV.go·SG.REP
'I'm going toward town over and over'

My hypothesis, which may be impossible to test empirically, is that the overlap between the *NP-*{*t,x̲,dé*} (*Ø*) and *NP-dé* (*n*) derivation is due to telicity. The prospective aspect is inherently atelic because of its modality: the speaker cannot be certain that the motion will actually reach the goal location. The progressive aspect is inherently atelic because it is durative: the motion necessarily has not reached the goal location. The repetitive imperfective can be telic or atelic because the telicity is in its iterative subevents of motion even though the superevent is durative.

Although I have only illustrated the motion derivations in this section with the verb *S-Ø-√gut* 'S (sg.) go', they are compatible with every motion verb as long as the resulting semantics is interpretable and felicitous. Motion derivations can also be applied to non-motion verbs, in which case the same effects of replacing conjugation class and repetitive imperfective also apply. The basic difference between motion and non-motion verbs is simply that motion verbs must have a motion derivation applied to them, whereas non-motion verbs have lexically specified properties that allow them to be inflected without additional derivations.

7.2. Eventuality class and conjugation class

Motion verbs never seem to form achievements, always instead denoting durative events that take up time. They sometimes seem to denote activities, particularly when they lack a PP and so just mean 'moving along'. Motion verbs often denote accomplishments when they have a goal PP, but many motion derivations provide PPs that do not entail telicity. This variation probably is due to what Zwarts (2005, 2008) refers to as 'prepositional aspect', the semantic interaction between spatial and temporal expression in PPs. Given Tlingit's very rich system for constructing and modifying motion predicates, the language is probably an ideal laboratory for investigating adpositional aspect.

Perfective aspect exhibits telicity effects in some motion derivations but not others. The motion derivation with *NP-*{*t,x,dé*} (*Ø*) exhibits fairly clear telicity in the perfective aspect. This contrasts starkly with the *NP-dé* (*n*) derivation where the meaning is clearly atelic.

(84) a.

ax	s'ísaa	hídit			xwaagút								*telic perfective*
ax	s'isaa	hít	-í	-t	wu- x-	Ø-	Ø-	i-	√gut	-H			
1SG·PSS	cloth	house-PSS-PNCT			PFV-1SG·S-[uD]-[uS]-[I]-√go·SG-VAR								
my	tent			-to	PFV.I.STV.go·SG								
'I got to my tent' (arrived)													

b.

ax	s'ísaa	hídidé			xwaagoot								*atelic perfective*
ax	s'isaa	hít	-í	-dé	wu- x-	Ø-	Ø-	i-	√gut	-µ			
1SG·PSS	cloth	house-PSS-ALL			PFV-1SG·S-[uD]-[uS]-[I]-√go·SG-VAR								
my	tent			-ward	PFV.I.STV.go·SG								
'I went toward my tent' (did not arrive)													

The telicity in (84a) does not arise from the punctual *-t* postposition even though this would be an obvious conclusion. Telicity instead comes from a combination of the punctual postposition and the *Ø*-conjugation. The same postposition with a *n*-conjugation verb (note *-µ* instead of *-H*) has an atelic reading in (85). This is constructed with the perambulative motion derivation *NP-t* (*n*) 'around NP'.

(85)

ax	s'ísaa	hídit			xwaagoot								*atelic perfective*
ax	s'isaa	hít	-í	-t	wu- x-	Ø-	Ø-	i-	√gut	-µ			
1SG·PSS	cloth	house-PSS-PNCT			PFV-1SG·S-[uD]-[uS]-[I]-√go·SG-VAR								
my	tent			-to	PFV.I.STV.go·SG								
'I went around my tent' (circling, wandering)													

Curiously the perambulative *NP-t* (*n*) lacks a repetitive imperfective, unlike most motion derivations. The only other motion derivations lacking a repetitive imperfective are *áa* (*n*) 'around' and *k̲ut=* (*g*) 'astray, lost'. I tentatively suggest that these lack a repetitive imperfective because they denote motions which cannot be telic, and so a durative iteration of the motion event would be either a continuation of the same event or a completely new event.

⟦Fixme: Meanings of conjugation classes in motion: *∅* nothing, *n* lateral/along, *g̲* down, *g* up. We can sort of see similar semantics in some non-motion verbs, but in others it seems to be arbitrary.Telicity isn't inherent in the conjugation classes contra Leer (1991). This runs against Rice (2000) as well, where she claims that the cognate conjugation classes are her situation aspect markers. But they're a bit tricky even in her analysis, with e.g. *s-* being telic in perfective duratives but atelic in perfective nonduratives so that she can capture semelfactives. It's apparently messy wherever you look.⟧

⟦Fixme: Motion verbs without PP (*n*, *g̲*, *g*) are inherently atelic. So telicity is at least partly due to PPs. Some PPs provide telicity, others don't. Adverbs maybe too, as in *k̲ux̲=* + [D] (*∅*; *-ch* Rep) 'returning' in the perfective.⟧

⟦Fixme: Motion verbs are inherently durative so they must be either activities or accomplishments, never achievements. If PP-less motion verbs are atelic, does this mean that the basically denote activities? Or do they denote accomplishments and the PP-less derivations somehow subtract the telos?⟧

7.3. Positional states of motion

Motion verbs can be derived into states as well as events. There are at least four kinds of motion-derived states: (i) positional or configurational states, (ii) extensional states and their iterative multipositionals, (iii) tendency states, and (iv) property states. I look at positionals in this subsection and sketch the other three in subsequent subsections.

A positional is a verb form that is only ever imperfective[26] and which denotes an entity being in a position or configuration at a location. Positionals invariably have a PP *NP-t* with the punctual postposition *-t* which denotes the location where the position is described.[27] Positionals could perhaps be better called 'configuration

26. Although they only ever have imperfective aspect, positionals can be marked for past tense with 'decessive' *-ín*, e.g. *gáant tuk̲éenin* 'we were seated outside' (Story & Naish 1973: 192). The claim of imperfectivity is based on morphology and English translation and should be verified by Tlingit-specific tests for imperfective aspect once these are developed.

27. Eggleston (2013: 50) says that the PP is not always required, but this runs contrary to my experience. I suspect imperfective activities like *tá* 'he's sleeping' influenced her claim since there are

states' because they denote a state of configuration – being seated, standing, placed, scattered – at some location denoted by the PP. The verb root in a positional is the source of the configuration semantics just as the PP is the source of the location semantics. Qualifiers in the verb may add qualia structure to the proposition, restricting the denotation of the argument to be small and round, elongated, etc.

(86) a. déix̲ hítx' haa eeg̲ayáat daḵéen
déix̲ hít -x' haa eeg̲ayáaᵏ -t Ø- Ø- d- Ø- Ø- √ḵi -He+n
two house -PL 1PL·PSS beach·face -PNCT 3·O-ZCNJ-[D]-[uS]-[uI]-√sit·PL-VAR
two house-s our beach·face-at it.POS·IMPFV.PL.sit·PL
'there are two houses situated between us and the water'
(Story & Naish 1973: 193)

b. ax̲ hídi ANB Hall tuwánt la.áa
ax̲ hít -í ANB Hall tuwán -t Ø- Ø- Ø- l- Ø- √.a -Hμ
1SG·PSS house -PSS ANB Hall alongside -PNCT 3·O-ZCNJ-[uD]-[L]-[uS]-√sit·SG-VAR
my house ANB Hall alongside-at it.POS·IMPFV.sit.SG
'my house is next to the ANB Hall' (Story & Naish 1973: 193)

There has been very little research on positionals. Leer identified and described them first in his dissertation (Leer 1991: 324–328). Since Naish (1966) and Story (1966) did not recognize the existence of positionals they offer no additional details. Eggleston notes their existence following Leer but does not add anything (Eggleston 2013: 49–50). There are many examples of positionals in both the textual documentation (e.g. Dauenhauer & Dauenhauer 1987, 1990; Nyman & Leer 1993) and in the lexical documentation (e.g. Story & Naish 1973; Leer 1976), but we lack any kind of review of examples from these sources.

Positionals are generally derived from intransitive uncontrolled motion verbs and from transitive controlled handling verbs. There are a few unusual suppletions where the expected root is substituted for a different root in the positional. Compare the suppletion of √*nuk* 'sg. sit' with √*.a* 'sg. sit' in (87) versus the lack of suppletion for the corresponding plural √*ḵi* 'pl. sit' in (88) below.

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some corresponding positionals like *át tá* 'he's asleep there'. Leer says "Positional Imperfectives with -stem and '-stem variants are morphologically indistinguishable from the corresponding Processive Imperfectives" (Leer 1991: 327). Though to get positional *át tá* 'he's asleep there' from motion, Leer (1991: 327) creates an otherwise undocumented motion verb based on √*ta* 'sleep'.

(87) a. a káx' xwaanúk
a ká -x' wu- x- Ø- Ø- i- √nuk -H
3N·PSS HSFC-LOC PFV-1SG·S-[uD]-[uS]-[I]-√sit·SG-VAR
its atop -at PFV.I.STV.sit·SG
'I sat on it'

b. neilt áa
neil -t Ø- Ø- Ø- Ø- Ø- √.a -Hμ
home-PNCT ZCNJ-3·S-[uD]-[uS]-[uI]-√sit·SG-VAR
home-at POS·IMPFV.she.sit·SG
'she's (sitting) at home'

(88) a. yóox' wutuwakée
yú -x' wu- tu- Ø- Ø- i- √ki -Hμ
D·DIST-LOC PFV-1PL·S-[uD]-[uS]-[I]-√sit·PL-VAR
there -at PFV.we.STV.sit·PL
'we sat there'

b. gáant tukéen
gáan -t Ø- tu- Ø- Ø- Ø- √ki -He+n
outside-PNCT ZCNI-1PL·S-[uD]-[uS]-[uI]-√sit·PL-VAR
outside-at POS·IMPFV.we.sit·PL
'we are seated outside'

Positionals denote states of location and configuration. The location is expressed by the PP which is invariably headed by the punctual postposition *-t*. The configuration is expressed by the verb root, indicating whether the entity is seated, lying, placed, scattered, etc. Unlike all other stative forms, positionals lack the value [I] in the classifier. Positionals seem to be non-durative, denoting instantaneous, timeless configuration or location in the context of the event time. It may be that [I] does not merely indicate state, but rather indicates a specifically durative state.

Some positionals appear in metaphoric contexts that describe being engaged in an event as being located at a noun referring to the event. Native speakers will almost always give idiomatic English translations for these rather than literal translations which seem strange in English.

(89) káaxwei shóot áa
káaxwei shú -t Ø- Ø- Ø- Ø- Ø- √.a -Hμ
coffee end-PNCT ZCNJ-3·S-[uD]-[uS]-[uI]-√sit·SG-VAR
coffee end-at POS·IMPFV.she.sit·SG
'she's sitting drinking coffee' (lit. 'she's seated at the end of coffee')

(Leer 1973: 10/99)

There are two key morphological features that distinguish positionals from other imperfectives: stem shape and postpositional phrase. Positionals of open syllable roots mostly have the *-He+n* stem shape also found with the progressive; just as with the progressive it is unknown whether the final *-n* has an identifiable meaning. Closed syllable roots have *-H* stem shapes with the positional, again consistent with the stems of progressives. Positionals formed with √*.a* 'end move; extend' which have the meaning 'sg. be seated, situated' irregularly have the *-Hμ* stem shape without a final *-n* or ablaut, i.e. *–.áa*.

Aside from the stem shape, the other distinguishing feature of positionals is that they have a PP headed by the punctual postposition *-t*. The aspectual prefix is always the *∅*-conjugation prefix, and the classifier has unvalued [uI]. Since the positional carries no morphological signals of conjugation class, it is impossible to say what conjugation class any positional belongs to. If positionals are derived from motion verbs that already have a motion derivation applied to them then we would expect the conjugation class from the motion derivation to be carried along. But since the primary indication of motion derivation is the PP and positionals have their own PP, this makes it very difficult to say whether motion derivations are an intermediate step in the formation of positionals.

7.4. Extensional states of motion

An EXTENSIONAL STATE describes a path of motion as a static course. Leer describes them succinctly: "The moving entity, by virtue of being a mass or group, can be configured so that it is perceived as statically extending rather than actively moving, e.g. water flowing, a trail leading somewhere, or a line of people entering a house" (Leer 1991: 249). Extensional states are mostly derived forms characterized by the presence of a conjugation class prefix as well as the state marker [I] in the classifier.

Extensional states are derived from motion verbs via only a couple of motion derivations: the PP-less *n*-conjugation derivation with the meaning of 'lateral motion along some unspecified path', and the *NP-x̲ g̲*-conjugation derivation with the meaning of 'down along NP'. There are examples of other motion derivations in extensional states, but Leer (1991: 320) says that they are rare and probably lexicalized. These derived motion verbs are then the basis for an extensional state that describes the motion as a static lineation along a path in space. The most common verbs that occur with extensional states are √*shu* 'extend' and √*da* 'flow'.

(90) a. gíl' yáx̲ gaashóo
gíl' yá -x̲ Ø- g- Ø- Ø- i- √shu -Hμ
cliff face-PERT 3·O-GCNJ-[uD]-[uS]-[I]-√extend-VAR
cliff face-at it.EXT·IMPFV.STV.extend
'it (icicle) hangs down the cliff' (Story & Naish 1973: 105)

b. wusitáax̲'u yaakw héennáx̲
Ø- wu- Ø- s- i- √tax̲'w-Hμ -i yaakw héen -náx̲
3·O-PFV-[uD]-[S]-[I]-√sink -VAR-REL boat water-PERL
it.PFV.STV.sink.REL boat water-along
shunlishóo
Ø- shu-n- Ø- l- i- √shu -Hμ
3·O-end-NCNJ-[uD]-[L]-[I]-√extend-VAR
it.end.EXT·IMPFV.STV.extend
'the stern of the boat that sank is sticking out of the water'
(Story & Naish 1973: 212)

(91) a. héen a tóonáx̲ naadaa
héen a tú -náx̲ Ø- n- Ø- Ø- i- √da -μ
water 3N·PSS inside-PERL 3·O-NCNJ-[uD]-[uS]-[I]-√flow-VAR
water its inside-thru it.EXT·IMPFV.STV.flow
'water flows through the inside of it (culvert)'

b. k'óox̲' lél'k a daax̲ x̲'akanaadaa
k'óox̲' lél'k a daa -x̲ Ø- x̲'a- ka- n- Ø- Ø- i- √da -μ
pitch soft 3N·PSS around -PERT 3·O-mouth-QUAL-NCNJ-[uD]-[uS]-[I]-√flow-VAR
pitch soft its around-at it.mouth.QUAL.EXT·IMPFV.STV.flow
'soft pitch is running down it (tree)' (Leer 1973: 05/4)

The following example illustrates both the *NP-x̲* (*g̲*) motion derivation and the PP-less *n*-conjugation derivation applied to the verb *√da* 'flow'. Both verbs are extensional states, but the first is marked for past tense with the 'decessive' *-ín* and the second is negated so both have their stative [I] values suppressed by higher functional heads.

(92) héen tlein áx̲ g̲adaayín, yeedát
héen tlein á -x̲ Ø- g̲- Ø- Ø- Ø- √da -µ -ín yeedát
river big 3N -PERT 3·O-G̲CNJ-[uD]-[uS]-[uI]-√flow-VAR-PAST now
river big there-at it.EXT·IMPFV.STV.flow.PAST now
k̲ú tléil unadaa
k̲u.aa tléil Ø- u- n- Ø- Ø- Ø- √da -µ
CONTR NEG 3·O-IRR-NCNJ-[uD]-[uS]-[uI]-√flow-VAR
but not it.IRR.EXT·IMPFV.STV.flow
'there was a large river flowing there, but now it doesn't flow' (Leer 1973: 05/4)

Leer (1991: 319) says that only one verb √*shu* 'extend' (cf. *a shú* 'its end') is found with "the full range of Extensional Imperfectives" but it is not entirely clear what he means by "full range". He gives an extensive paradigm of √*shu* 'extend', illustrating examples of extensional states with the following motion derivations: *kei=* (*Ø*) 'upward', *yan=* (*Ø*) 'ashore', *NP-{t,x̲,dé}* (*Ø*) 'arriving at NP', *NP-x̲ ya-u-* (*Ø*) 'around NP', *NP-dé* (*n*) 'toward NP', *NP-dáx̲* (*g*) 'starting from NP', *NP-x̲* (*g̲*) 'down along NP', and *yaa=* (*g̲*) 'downward'.

Although √*shu* and √*da* are the most common, there are a few other verbs that commonly appear with extensional states.

(93) a. góos' naagáas'
góos' Ø- n- Ø- Ø- i- √gas' -Hµ
cloud 3·O-NCNJ-[uD]-[uS]-[I]-√glide-VAR
cloud it.EXT·IMPFV.STV.glide
'the clouds are moving along' (Story & Naish 1973: 135)
b. ⟦FIXME: find a couple of others⟧

Leer (1991: 322–324) describes two extensional state verbs that are not derived from motion verbs. These are the dimension states of √*le* 'far'[28] and √*dlan* 'deep'. Interestingly the former is *n*-conjugation and the latter is *g̲*-conjugation, paralleling the two conjugation classes regularly used for deriving extensional states from motion verbs. I illustrate these in (94) and (95), giving perfective and progressive forms to contrast with the extensional state imperfective.

28. Leer (1991: 322) gives √*li* with √*le* as a variant. The √*le* form is actually the norm, with √*li* appearing nowhere in his lexical notes (Leer 1973: 08/25–26, 1976: 443, 1978b: 29), even for Tongass Tlingit.

(94) a. naaléi *extensional state imperfective*
Ø- n- Ø- Ø- i- √le -Hμ
3·O-NCNJ-[uD]-[uS]-[I]-√far-VAR
it.EXT·IMPFV.STV.far
'it is far'

b. yaa naléin *progressive*
yaa= Ø- n- Ø- Ø- Ø- √le -Hμ+n
along=3·O-NCNJ-[uD]-[uS]-[uI]-√far-VAR
along=it.PROG.far
'it is getting far'

c. woolei *perfective*
Ø- wu- Ø- Ø- i- √le -μ
3·O-PFV-[uD]-[uS]-[I]-√far-VAR
it.PFV.STV.far
'it became far'

(95) a. g̲aadlaan *extensional imperfective*
Ø- g̲- Ø- Ø- i- √dlan -μ
3·O-G̲CNJ-[uD]-[uS]-[I]-√deep-VAR
it.PFV.STV.deep
'it became deep'

b. yaa nadlán *progressive*
Ø- n- Ø- Ø- Ø- √dlan -H
3·O- NCNJ-[uD]-[uS]-[uI]-√deep-VAR
it.PROG.deep
'it is getting deep'

c. woodlaan *perfective*
Ø- wu- Ø- Ø- i- √dlan -μ
3·O-PFV-[uD]-[uS]-[I]-√deep-VAR
it.PFV.STV.deep
'it became deep'

The extensional state forms in (94a) and (95a) appear instead of the basic imperfective; there are no verb forms like **yaléi* 'it's far' or **yadlaan* 'it's deep'. There may be a few other dimensional state verbs that also have an extensional state as their imperfective form; I know at least of √*se* 'near' in *kunaaséi* 'it is close' and not **kooséi*.[29]

29. See Leer 1990 for a discussion of unpredictable tuples like √*le* 'far' : √*se* 'near', √*dal* 'heavy' : √*das* 'light', and √*yat'* 'long' : √*yatl'* 'short' : √*yach'* 'too short'.

I have no explanation for why these dimensional state verbs – and only these few – have an extensional state imperfective rather than a basic imperfective like all other state verbs. I am furthermore unaware of any research on this issue.

At least √*le* 'far' can occur with a motion derivation that changes its conjugation class. Story (1966) gives one example repeated in (96a) where the motion derivation *yax̲=* (*g*; *-ch* Rep) 'down along' is clearly applied to √*le* 'far'. The same derivation appears in a different example sentence from Story and Naish's verb dictionary (Story & Naish 1973), analyzed here in (96b). This form includes an additional comparative derivation *ka-u-*.[30]

(96) a. yax̲ g̲aaléi
yax̲= Ø- g̲- Ø- Ø- i- √le -Hμ
down=3·O-GCNJ-[uD]-[uS]-[I]-√far-VAR
down=it.EXT·IMPFV.STV.far
'it's far (to bottom of waterfall)' (Story 1966: 168)

b. du noowú 100 k̲aa x̲'oos
du noow-í 100 k̲aa x̲'oos
3H·PSS fort -PSS 100 4H·PSS foot
his fort 100 person's foot
yéi koog̲aaléi
yéi= Ø- ka- u- g̲- Ø- Ø- i- √le -Hμ
thus=3·O-CMPV-IRR-MOD-[uD]-[uS]-[I]-√far-VAR
thus=it.CMPV.IRR.EXT·IMPFV.STV.far
'his fort had walls 100 feet high' (Story & Naish 1973: 109)

The multipositional states denote an entity being located in multiple locations along a path in space. They are constructed with repetitive suffixes and so denote repetitive (iterative) states which I describe in section 6. I have the sense that multipositionals are derived from motion verbs by way of extensional states, but this hunch remains to be verified.

7.5. Tendency states of motion

Tendency states are states describing how an entity has a regular tendency of having some property or occuring in some eventuality context. They are formed with the repetitive suffix *-k* ~ *-kw* and so are a kind of repetitive state. They can be derived

30. The comparative derivation can only be applied to dimension-denoting state verbs. The *ka-* of the comparative derivation is distinct from the *ka-* qualifier and incorporated noun because they can cooccur. The irrealis *u-* that appears in the comparative has yet to be explained.

from state verbs and event verbs, including motion verbs. I discuss them further in the context of repetitive states generally in section 6.2.

⟦FIXME: A few examples specifically of motion verbs.⟧

7.6. PROPERTY STATES OF MOTION

A MOTION PROPERTY STATE is a tentative label for the largely undescribed instances of motion verbs as basic state imperfectives. There are few examples in the literature and no discussion of them to my knowledge, but they can be found in texts and are spontaneously produced by modern speakers. The latter indicates that they are at least lexically accessible if not productively generated. The only example I have reliably elicited is *yagóot* 'he goes' as in (97) below.

(97) a. k̲únáx̲ yagóot
k̲únáx̲ Ø- Ø- Ø- Ø- i- √gut -Hμ
very ZCNJ-3·S-[uD]-[uS]-[I]-√go·SG-VAR
very IMPFV.he.STV.go·SG
'he really goes'

b. k̲aa yáanáx̲ yagóot
k̲áa yáanáx̲ Ø- Ø- Ø- Ø- i- √gut -Hμ
4H more·than ZCNJ-3·S-[uD]-[uS]-[I]-√go·SG-VAR
one more·than IMPFV.he.STV.go·SG
'he goes faster than anybody' (Story & Naish 1973: 87)

c. tléil a yáx̲ eegóot
tléil a yáx̲ u- Ø- i- Ø- Ø- Ø- √go·SG-Hμ
NEG 3N SIM IRR-ZCNJ-2SG·S-[uD]-[uS]-[uI]-√go·SG-VAR
not it like IRR.IMPFV.you·SG.STV.go·SG
yaa neeshíxi
yaa= n- i- d- sh- Ø- √xix -H -í
along=NCNJ-2SG·S-[D]-[Sh]-[uI]-√run-VAR-SUB
along= PROG.you·SG.run.SUB
'you don't go fast enough when you're running' (Cable 2014: 104)

I propose that these – if there are in fact others besides *yagóot* – are essentially a kind of extensional state (see sec. 7.4) formed with the *Ø*-conjugation rather than the *n-* and *g̲*-conjugations known with other verbs. They are not explicitly iterative because they lack repetitive suffixes, but there is the *NP-{t,x̲,dé}* (*Ø*) motion derivation that has *-μ* stem variation and no repetitive suffix but still shows clear iterative semantics, so it is morphologically possible that these property states of motion may be iterative too.

8. Terminological problems

Unfortunately the terminology used for describing event structure and aspect is not as consistent as one would like. Both metaphysical and semantic research have proceeded along several different trajectories with each trajectory developing its own terminology for similar or identical phenomena. Tlingit description developed largely apart from crosslinguistic research and so the traditional terminology for Tlingit is particularly out of sync with the rest of the field.

8.1. Crosslinguistic terminology

The lexical encoding of eventuality classes is traditionally known in German as *Aktionsart* and this label is often used in English. Another popular term is 'lexical aspect' which is contrasted with 'grammatical aspect'. Grammatical aspect refers to the inflectional categories like imperfective, perfective, and progressive, whereas lexical aspect refers to the eventuality classes like states and accomplishments. The study of eventualities and their internal construction is usually referred to as event structure. States are often implicitly included in this topic so a better term might be eventuality structure given that 'eventuality' = 'state' ∪ 'event'.

Smith (1997) proposes the term situation aspect as an equivalent to lexical aspect, arguing that the eventuality classes encapsulate properties of her 'situation' which is our eventuality. She contrasts this with viewpoint aspect which is her equivalent to grammatical aspect, where the interpretation is dependent on the perspective of the speaker and is not inherent in the situation denoted by the lexical entry. Both situations and viewpoints are technical objects in Smith's theory, so the use of these terms generally implies adoption of at least some of her framework (e.g. Rice 2000).

Vendler (1957) established the terms 'state', 'activity', 'accomplishment', and 'achievement'. I do not know the source of 'event' as a label for non-states but it has been widely adopted by both philosophers and semanticists (Casati & Varzi 2014). Bach (1986) seems to be the source of 'eventuality' as a superclass unifying states and events. Bach also proposed alternative terms for Vendler's classes, but these failed to catch on. However, Bach's 'process' = 'activity' and 'event' = 'non-activity event (culmination)' are significant for Tlingit as I discuss in section 8.2. Vendler's classes are sometimes eponymously known as 'Vendlerian classes', but they are also often called '(lexical) aspect classes'. I have used the term 'eventuality class' to avoid confusing lexical and grammatical aspect.

⟦Fixme: Who uses 'punctual' = 'achievement'? Or is it only used as an adjective covering semelfactives and achievements?⟧ ⟦Fixme: Anything else?⟧

8.2. Tlingit terminology

Leer (1991) is the source of a fairly large portion of the traditional Tlingit descriptive terminology, although he maintains many terms which were originally proposed by Naish (1966) and Story (1966). Eggleston (née Edwards) has largely followed Leer's established terminology, though she regularizes his inconsistencies and adopts some common labels for his more obscure coinages (Edwards 2009; Eggleston 2013). In general the traditional labels for Tlingit's grammatical aspect categories are not far from the crosslinguistic norms, but the traditional labels for event structure (eventuality classes) are markedly divergent.

Leer's analysis of Tlingit verbs has several categories of 'stative', 'active' or 'processive', 'eventive', 'motion', and 'positional'. Some of these correspond directly with modern crosslinguistic analyses of event structure. In particular, the 'stative' category comprises durative states and the 'active' category maps to activities. The traditional 'eventive' category subsumes both accomplishments and achievements; it does not actually cover all events since activities are excluded. The 'positional' and 'motion' categories actually refer to derivational phenomena that give rise to paradigms of grammatical aspects, and so are not eventuality classes in any ordinary sense. Positionals are a kind of imperfective where a motion is viewed as a nondurative state of being in a location or in a configuration. Motion verbs denote subtypes of both activities and accomplishments that result in a change of location, with interactions between grammatical aspect and source or goal PPs.

A few of Leer's terminological choices can be explained by his intellectual tradition. As noted in the previous section, Bach (1986) proposed a hierarchy of eventuality classes with novel labels. Leer's use of 'process' and the adjective 'processive' to denote activities is directly from Bach's term 'process' for Vendlerian activities. Likewise, Leer's 'eventive' class reflects Bach's label of 'event' for telic non-activity events, i.e. accomplishments and achievements. Leer uses Bach's idiosyncratic terminology because Bach was one of Leer's advisors during his PhD (Leer 1991: ii).

The term MODE refers to the paradigmatic inflectional patterns of aspect, mood, and modality marking on verbs in Tlingit. Aspects are mutually exclusive so that a verb cannot be simultaneously perfective and imperfective, for example. But these are also mutually exclusive with potentials that denote possibility modality and with conditionals that denote conditional mood. The term 'mode' unifies these categories because Tlingit is traditionally analyzed as having a single inflectional paradigm for them. The mode concept obscures the internal morphological compositionality of the verb, and so can be misleading when woking with more complex structures beyond the simple mono-aspectual perfective, imperfective, etc.

Leer (1991: 206–209) divides the Tlingit modes into three major groups of 'declarative', 'deontic' and 'circumstantial'. The deontic modes are the imperative, hortative, and admonitive. The circumstantial modes are the consecutive, conditional, and contingent. The declarative modes are all others, including the future and potential. Leer's labels are clearly taken from modality research, but they should not be taken literally. Certainly imperatives are often deontic, but it is not necessarily the case that conditionals always involve circumstantial modality, and the potential denotes possibility modality with any of the deontic, epistemic, or circumstantial bases. Because Leer's labels for his mode categories are potentially misleading, and because they have no morphological or syntactic significance, I have discarded them.

Leer uses the terms 'telic' and 'atelic' to describe the conjugation classes, labelling the Ø-conjugation class as 'telic' and the other three *n-*, *g̲-*, and *g-* as 'atelic' (Leer 1991: 72). But these labels are misnomers as he explicitly acknowledges:

> I therefore use the terms Telic and Atelic synonymously with Ø-aspect and non-Ø-aspect, even though these capitalized terms refer to lexicalized aspectual distinctions in Tlingit and cannot simply be equated with the non-capitalized terms. (Leer 1991: 77–78)

Leer chose 'Telic' for Ø-conjugation because of the telicity apparent in forms like (84a). But there are other Ø-conjugation derivations that are not telic, such as the form in (98) which is a perfective Ø-conjugation motion derivation with *kei=* 'upward'.

(98) kei x̲waagút
kei=wu- x̲- Ø- Ø- i- √gut -H
up= PFV-1SG·S-[uD]-[uS]-[I]-√go·SG-VAR
up= PFV.I.STV.go·SG
'I went up'

In non-motion verbs the mismatch between Leer's 'Telic' and actual telicity is even more clear. For example the Ø-conjugation verb *al'óon* 'he is hunting it; he hunts it' (impfv.) denotes an activity and not an achievement or accomplishment since one can hunt for an extended period without an endpoint; we can easily imagine a mythical figure that hunts forever without success. Likewise, many non-Ø-conjugation verbs are certainly telic. A prime example is the *n*-conjugation achievement *woonaa* 'he died' (pfv.); this cannot possibly be atelic given that an event of death – a transition from living to dead – has a necessary endpoint by definition. This distinction is made explicit by the grammatical aspect system, where *al'óon* 'he hunts it' is a basic imperfective and so is a durative atelic activity but *woonaa* 'he died' does not have a basic imperfective form and so is an instantaneous telic achievement.

Leer uses the term 'aspect' to refer to the four conjugation classes *Ø-*, *n-*, *g̲-*, and *g-* because of his analysis of them as coding telicity. He avoids the confusion between lexical and grammatical aspect by using his 'aspect' only to refer to this lexical aspect property. His grammatical aspect is always 'mode' as defined above. I describe the conjugation class prefixes as 'aspectual' because I see them, along with perfective *wu-*, as located in AspP in the syntactic structure of the verb. In my analysis they are aspectual but this is essentially grammatical rather than lexical aspect, though the selection of the non-perfective prefixes is determined by lexical properties.

The use of 'mode' and 'aspect' in Tlingit are distinct from the traditional practice in description of Dene languages. In that family 'aspect' refers to one of the four categories of imperfective, perfective, future, and optative which are distinguished by patterns of stem shape as well as aspectual prefixes. Orthogonal to the 'aspect' dimension, 'mode' covers a variety of what would be considered derivational phenomena in Tlingit, such as the 'semelfactive', 'continuative', and 'persistive'. See discussions by Axelrod (1993), Smith (1997), and Rice (2000) among others for more detailed explanations. Although the traditional terms of 'mode' and 'aspect' in Tlingit are shared with those of Dene, the definitions are incompatibly different.

A VERB THEME is a lexical entry of a verb composed minimally of a verb root and one or two components of the classifier (e.g. [D] and [S]). The VERB THEME CATEGORIES group together verb themes sharing eventuality properties like telicity and durativity. The terminology for verb themes is fairly old, dating back at least to Hoijer (1949). The concept of a 'verb theme category' dates to the late 1970s, appearing first in an unpublished manuscript by Leer & Krauss (1978) and then in a short monograph by Kari (1979). Rice (1989) has a good summary description for the Slave /ˈsleˌvi/ language of northern Canada.

> The different verb themes of Slave fall into two major classes, *active* and *neuter*. Active verbs describe 'eventings in motion' (Hoijer 1964), while neuter verbs describe states of being and qualities, or 'eventings solidified' (Hoijer 1964: 143). Neuter verbs require the perfective prefix in position 11 of both imperfective and perfective forms; active verbs require the imperfective prefix *Ø-* in the imperfective mode and the perfective prefix *ñ-* in the perfective mode.
>
> These two classes can be further broken down into ten *verb theme categories*. The verb theme categories into which active themes can fall are motion, successive, operative, and conversive. Neuter themes belong to one of the following verb theme categories: extension, classificatory, positional, stative, descriptive, dimensional. The verb theme categories serve as the unifying feature of verb themes. They are defined on the basis of several criteria. Themes within a verb theme category share semantic features. They can occur in the

> same range of aspects and they share a *primary aspectual string*, the aspect required when no derivational prefixes are added. Themes within a theme category tend to be similar in terms of *derivational potential*, or the bases that the themes can occur in. (Rice 1989: 434)

Hoijer's descriptions clearly aim at the same concepts of event and state used in modern study of event structure. The traditional 'neuter' is a state whereas the traditional 'active' is an event. Tlingit in Leer's analysis has a much smaller set of verb theme categories than what is usually proposed for Dene languages, but we can see parallels in the motion, positional, and stative categories. Leer's division of state verbs into 'descriptive' and 'dimensional' obviously follows the Dene classification, as does his identification of 'extensional' and 'classificatory' verbs even though these are not verb theme categories in his analysis.

Leer's term 'schetic' deserves some comment although it has had little impact on the study of Tlingit. In his dissertation Leer (1991: 64–65) proposes the term 'schetic' as a cover for aspect, tense, modality, mood, and polarity. This label is derived from Greek σχέσις *skhésis* 'relation, state, condition' which is related to σχῆμα *skhē̃ma* 'scheme, form, figure'. Leer argues that they are all connected and should be dealt with as a single formal system. Part of his argument rests on his claim that Tlingit combines the various temporal categories into a single inflectional system of modes, but his approach assumes that the verbal morphology is not compositional. Further research on Tlingit has shown that at least tense is expressed separately from Leer's schetic system, and that the Tlingit modes are all likely to be tenseless. Furthermore, Leer's label is completely opaque to people who do not know Greek. Since he made no effort to promote the use of his term outside of his dissertation, 'schesis' has been effectively relegated to the dustbin of linguistic terminology.

⟦FIXME: Is Leer's 'durative' funky, or is it just his system that makes it seem odd? He apparently excludes progressives which we would certainly say are durative (Leer 1991: 240). States are also durative, at least for the non-positional kind; positional imperfectives could be instantaneous for all we know so far.⟧

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Motion derivation list

This is a list of well documented motion derivations, sourced mostly from Leer (1991: 297–315). Many if not all of these can be applied to activity verbs. There are also some activity and achievement verbs which appear to have lexicalized instances of motion derivations.

- *Ø*-conjugation
  - *-μ* repetitive imperfective — motion arriving at goal
    - *NP-{t, x, dé}* arriving at NP, coming to NP
    - *yan= ~ yax= ~ yán-de=* ashore, to rest, completing
      - *NP-x' yan...* to rest at NP
      - *NP-náx yan...* across NP, to other side of NP
      - *yan... k'i-* setting up, erecting
      - *yan... sha-* setting up, leaning against
    - *kux= ~ kux-x= ~ kúx-de=* aground, into shallow water
    - *neil(-t)= ~ neil-x= ~ neil-dé=* inside, home
      - *NP-x' neil...* inside house at NP
    - *haa-t= ~ haa-x= ~ haa(n)-dé=* here, hither
    - *yóo-{t, x, de}=* away, off somewhere
  - *-ch* repetitive imperfective — motion toward area
    - *kei=* upward
      - *ux=kei=* blindly, out of control, mistakenly
      - *NP x'é-x' kei=* catching up with NP
    - *yei=* downward
    - *yeek=* down to shore (cf. *éek* 'beach')
      - *héeni=yeek=* down into water
    - *daak=* up from shore, back from open
      - *dáagi=daak=* further up from shore
      - *kwáak-x=daak=* wrongly, mistakenly
    - *daak=* seaward, out into open, down to ground
    - *kux= ~ kúx-de=* [*D*]- returning along same path
      - *NP-x' kux...* returning to NP along same path
  - *-ch* repetitive imperfective and *ya-oo- ~ yaa=* — oblique motion
    - *NP-x yaa= ~ ya-oo-* obliquely, circuitously along NP
      - *NP daa-x yaa=...* circling around NP
    - *NP-dé yaa=...* obliquely, circuitously toward NP
      - *héi-de yaa=...* over that way, aside, out of the way
    - *NP-dáx yaa=...* obliquely, circuitously away from NP

- *NP jikaa-dáx yaa=...* out of NP's way
- *NP-náx yaa=...* obliquely, circuitously along NP
- *NP-x' yaa=...* obliquely, circuitously at NP
  - *NP daséi-x' yaa=...* changing places with NP

- *-ch* repetitive imperfective and *sha-ya-oo-* — hanging
  - *yax= sha-ya-oo-* hanging up
  - *NP-x sha-ya-oo-* hanging up at NP
- *-x* repetitive imperfective — motion confined to a location
  - *NP-x'* near NP
    - *NP yá-a* up to NP (*-a = -x'*)
    - *NP gunayá-a* separating from NP
    - *NP jishá-a* ahead of NP
  - *gági=* emerging, out of shadows
  - *dáagi=* out of water
  - *héeni=* into water
  - *gunayéi= ~ gunéi=* beginning
  - *NP-x* moving in place at NP, while stuck at NP
  - *NP-x' yax=* turning over by N
    - *á-a yax=* turning over
    - *shó-o yax=* turning end over end
  - *yedax= ~ yetx=* starting, taking off, picking up
- *-x* repetitive imperfective and *a-ya-oo-*[*D*] — revertive circling motion
  - *a-ya-oo-*[*D*]- circling back to origin, returning along different path
- *yoo=*[*I*]*-...-k* repetitive imperfective
  - *yoo=* back and forth, to and fro
  - *yan=yoo=* up and down (from surface)

- *n*-conjugation
  - *yoo=*[*I*]*-...-k* repetitive imperfective — unbounded motion
    - (no PP) lateral, horizontal, along
    - *NP-x* along NP
    - *NP-dé* toward NP
    - *NP-dáx* away from NP
    - *NP-náx* by way of, through NP
    - *NP-gáa* for (to obtain) NP
    - *NP nák* leaving NP behind
    - *yux=* out of house
      - *NP-x' yux=* out of house at NP
  - without repetitive imperfective

- *NP-t* circling, around at NP
- *á-a* around

* *g*-conjugation
  - *-ch* repetitive imperfective — downward motion
    - (no PP) falling, downard (only unaccusative uncontrolled)
    - *yaa=* down (*yei=* blocks *yaa=*)
    - *NP-x* down along NP
      - *héen-x* down into water
      - *ká-x sha-* falling over, lying flat
    - *yaax=* aboard, into boat or other vehicle (< *yaakw-x*)
    - *NP-náx* down by way of, through NP
    - *yanax=* down into ground (< *yán-náx*)
* *g*-conjugation
  - *-ch* repetitive imperfective — initiation
    - (no PP) starting off, picking up, upward
    - *NP-dáx* starting off, picking up from NP
  - without repetitive imperfective
    - *kut=* astray, lost

Non-motion derivation list

This is a list of non-motion derivations, what Leer (1991: 218) calls 'productive aspectual derivatives'. Some of these are obviously identical with motion derivations and as such are simply metaphoric extensions of their motion meanings to verbs without motion semantics. Others are either more remotely derived from motion in a now opaque fashion, or independent constructions.

* *Ø*-conjugation
  - *-x* repetitive imperfective
    - *gunayéi ~ gunéi* 'start, initate, begin' (inceptive)
    - *NP-x ya-*[*S*]- 'completely, totally, exhaustively' (exhaustive)
    - *NP-x yax=ya-*[*S*]- 'completely, totally, exhaustively' (exhaustive)
  - *-μ* repetitive imperfective
    - *yan= ~ yax= ~ yánde=* 'finishing, ending' (terminative)
  - no repetitive imperfective
    - *kwáakt* 'wrongly, mistakenly' (errative)
    - *kwáakx daak* 'wrongly, mistakenly' (errative)
    - *kunáax daak* 'explaining, clarifying'
* *g*-conjugation (no repetitive imperfective)

- no repetitive imperfective
  - *NP-x̲* ‘completely, totally, exhaustively’ (exhaustive)
  - *yax̲=* ‘completely, totally, exhaustively’ (exhaustive)
- *g*-conjugation (no repetitive imperfective)
  - no repetitive imperfective
    - *k̲ut=* ‘carried away, too much; lost’ (excessive, errative)