Progressive as Motion on a Scale

Introduction. Motion events in Tlingit (Na-Dene; Alaska and NW Canada) are expressed with the progressive form of a motion verb. I argue that the meaning of motion itself comes from progressive morphology. Moreover, it has the same interpretation whether this is motion along a path or an abstract scale. In my analysis, I work toward formalizing the well-known analogous structure between paths and scales (e.g. Tenny, 1994; Hay, Kennedy, & Levin, 1999). Then, by appealing to differences between spatial and non-spatial scales, I explain both observed similarities and differences in the aspectual behavour of motion and scalar verbs in Tlingit.

Motion verbs are like scalar changes in Tlingit. Motion and scalar verbs have in common a kind of measurability. Scalar change predicates in Tlingit, like in English, can take bare measure phrase arguments which express an amount of progress along the scale (1). So can motion verbs (2), unlike other verbs (3). (Uncited data is from my own fieldwork.)

(1) A yáx̲ k̲u.aa déix̲ k̲aa x̲'oos uwawát.
it with however two person foot PFV-STV-grow.up
"Then he grew two feet."

(2) Jinkaat kaay aan niyaadé x̲waak̲oox̲.
ten mile town toward PFV-1SG.S-STV-go.vehicle
"I drove ten miles toward town."

(3) #A yáx̲ k̲u.aa déix̲ k̲aa x̲'oos kamligéi.
it with however two person foot QUAL-PFV-XTN-STV-tall
Intended: "Then he grew two feet."

Motion roots turn paths into scales. A motion verb root in Tlingit obligatorily combines with a postpositional phrase (or conjugation class marker, which also has directional meaning; Crippen, 2019). For example, see *aan niyaadé* "toward town" in (2). I take the postpositional phrase to be a predicate of paths. The role of the motion verb root is to transform a path into a measure on entities and events. This measures how much the entity progresses along the path during the event.

Progressive and scales. An ongoing motion event (4) or scalar change (5) is expressed with the progressive imperfective form.

(4) Aadé yaa has na.át.
it-toward PROG PL NCNJ-go.PL
"They are going there." (Eggleston, 2017)

(5) Kei nawát.
PROG NCNJ-grow.up
"S/he is growing up." (Eggleston, 2017)

In fact, the progressive *must* describe motion through space or along a scale. Even when the verb root on its own does not have scalar structure, as with *x̲a* "eat", the progressive coerces a spatial or progress scale into being, as in (6).

(6) Yaa nx̲ax̲éin.
PROG NCNJ-1SG.S-eat-PROG
"I am going along eating." (Leer, 1991)

As we will see below, without the progressive aspect, even an apparently "motion" verb does not entail actual motion. It is, then, progressive which supplies the meaning motion. What the verb

(with its PP complement) supplies is the scale on which the motion happens.

Note that motion does not require actual displacement in space; for example, running on a treadmill may be described with (7).

(7) Tléix' gaaw x̲'áakx̲ ch'a tleix̲ yaa nashíx.
one hour span-at just forever PROG NCNJ-run
"She was running continuously for an hour."

To describe pure displacement, another form of a motion or scalar verb, like the perfective, is used. I therefore propose an interpretation for progressive morphology as an adverbial which converts a scale into an expression of motion along the scale. It expresses that *ceteris paribus* the entity would move, but if something cancels out the motion, the entity may remain in place. For now, I use the language of *inertia* for this idea.

(8) $[\![\text{PROG}]\!] = \lambda m_{\text{scale}}.\lambda x_{\text{entity}}.\lambda e_{\text{event}}.$ If e continues according to its internal inertia, $m(e)(x)$ will increase

The preference of progressive forms for scalar predicates exists beyond Tlingit, e.g. in contrasts like the English *#he is understanding French* versus *he is understanding French more and more each day* (Bach, 1981). This suggests the possibility of extending my analysis to other languages.

Bare imperfective entails all degrees of the scale. When a motion verb root bears non-progressive imperfective aspect, no actual motion is entailed. A plain imperfective form can only with a path that consists of only one location, and describes being located at that place, as in (9).

(9) Át la.át.
there extended-go.PL
"They're lying there." (Eggleston, 2017)

By contrast, a stative imperfective of a motion root denotes existing all along a path.

(10) Áx̲ nali.átk.
there NCNJ-extended-STV-go.PL-REP
"They (distributed) lie here and there along it." (Leer, 1991: 329)

I infer that when not progressive, a motion verb denotes existing at *all* points of a path, instead of moving from one point toward another over time. This involves quantification over degrees: it says that the path-measure of the entity returns all degrees of progression at once. The universal quantification in this imperfective form is likely related to the generic interpretation of the imperfective, which can be analyzed with quantification over times and worlds (c.f. Lewis, 1975 in general, and Cable, 2022 for Tlingit).

In Tlingit, non-spatial scalar change predicates do not appear in the imperfective (Crippen, 2019). My analysis explains that with physical implausibility: It is far more natural for an object to exist at several places in space than for an object to exist at several places on a scale of grown-upness. The impossibility of an object existing at multiple degrees on an abstract scale explains the unavailability of the imperfective form.

Conclusion. I have shown similarities in behaviour between motion and scalar predicates arising from a shared scalar structure. I have also argued that the meaning of motion itself is contributed, not by a motion root, but by the progressive aspect, which explains the interpretation of non-progressive imperfective motion verbs. This provides a new account of eventuality class differences in Tlingit and extends our formal tools for analyzing motion events.

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