Actuality entailments and the inchoative perfect in Ktunaxa

The puzzle. Cross-linguistically, the combination of an ability modal with a perfective aspect results in an inference known as an **actuality entailment** (AE), namely that the event described by the modal's complement occurs in the actual world (Bhatt, 1999; Hacquard, 2006, 2020; Nadathur, 2025). Such an inference does not obtain when an ability modal combines with an imperfective aspect. In Ktunaxa (isolate: British Columbia, Idaho and Montana), an AE obtains when the ability modal *taɬ* combines with the aspect marker *siɬ*, as shown in (1). A pure ability reading obtains when *taɬ* occurs with a future marker *¢*, as in (2). What is curious is that previous grammatical descriptions (e.g., Morgan 1991) and the Ktunaxa dictionary gloss *siɬ* as a progressive aspect (i.e., a type of imperfective), which seems plausible given examples like (3). It is therefore unexpected that the combination of *siɬ* + *taɬ* gives rise to an AE.

(1) Context (adapted from Hacquard 2020): ₡an and Maɬi are a very strong couple. They participated in the World's Strongest Couple contest last year...:
₡an **siɬ** **taɬ** ʔiktkakin-i k̓isqat̓iʔmaɬ-s ¢ ʔaki Maɬi ʔiktkakin-i k̓isqat̓iʔmaɬ-s
₡an ASP MOD lift-IND fridge-OBV and too Maɬi lift-IND fridge-OBV
'₡an was able to lift a fridge, and Maɬi lifted one too.'

(2) Context: La·t is quite old now, but he is still strong. One day, Alfred saw a large rock that had to be moved. Alfred knew that La·t is still strong, so he thought:
La·t **¢** **taɬ** ʔitkakin-i ʔi-s nuʔki-s
La·t FUT MOD lift-IND DEM-OBV rock-OBV
'La·t can lift that rock.'

(3) Context: I go to the kitchen, and I see ₡an...:
₡an **siɬ** ʔik-ni k̓unił̓nakiniɬ-s
₡an ASP eat-IND bread-OBV
'₡an is eating bread.'

We propose that *siɬ* is in fact an **inchoative perfect**, along the lines proposed for Niuean *kua* by Matthewson et al. (2015). We show how this analysis derives AEs with *taɬ* as well as event-in-progress readings that led to the previous characterization of *siɬ* as a progressive.

***Siɬ* as an inchoative perfect.** A first clue that *siɬ* has a perfect-like semantics comes from accomplishments (4) and achievements (5), where the combination with *siɬ* results in an anteriority reading, rather than an in-progress reading.

(4) ₡an **siɬ** yuna-ɬukpqa-ni ni-s ʔa·kikmuɬiʔit-s
₡an ASP a.lot-run-IND DEM-OBV hill-OBV
'₡an {ran/has run} up the hill.' (Not: '₡an is running up the hill.')

(5) Context: Speaker is on the phone with a friend, who they are waiting for at a cafe:
Hu **siɬ** ɬaxax-i
1SG ASP arrive-IND
'I just arrived.' (Not: 'I am arriving.') (Underhill, 2025)

We also find that *siɬ* can give rise to **experiential readings**, as shown in (6).

(6) Context (from Matthewson (2014), "Miss Smith's Bad Day"): A teacher asks the students 'Who has ever climbed a mountain?', and a student answers:
Kamin hu **siɬ** ʔitak̓nu-ni ʔa·kikmuɬiʔit-s
1INDP 1SG ASP climb-IND hill-OBV
'I have climbed a mountain.'

States with *siɬ* can describe a state that is ongoing at the reference time (7), but we also find examples where the most prominent reading is that a **change-of-state** has occurred before the reference time (8). For activities, we get an event-in-progress reading (3).

(7) Context: Why isn't John here?
Ȼan **sił** saniłxuni-ni
John ASP be.sick-IND
'John is sick.'

(8) Context: Crying out to your mom:
Hu **sił** ʔupiłik!
1SG ASP be.hurt
'I got hurt!' (Underhill, 2025)

Analysis of *sił*. We analyze *sił* as an inchoative perfect. *Sił* places an event within the Perfect Time Span (PTS; Iatridou et al. 2001), a time interval whose right boundary is the reference time t and left boundary is determined by the context. However, following Matthewson et al. (2015) for Niuean *kua*, it is a **change of state** event, represented as BECOME$(P)(e)$ (adapted from Dowty 1977), that is placed within PTS. We adapt Matthewson et al.'s analysis as in (9).

(9) $[\![\text{sił}]\!]^{w,c} = \lambda P \lambda t.\exists e[e \text{ in } w \text{ \& BECOME}(P)(e) \text{ \& } \tau(e) \subseteq PTS_c(t)]$

Since BECOME$(P)(e)$ denotes a transition from not-P to P, we capture the anteriority readings of achievements and accomplishments. Since achievements are punctual, they denote a change of state from not-P to P, and therefore the entire event is placed within PTS. For an accomplishment, the relevant change of state occurs at its culmination, and so the entire event is placed within PTS. However, for states and activities which are homogeneous, the change of state occurs at the beginning of the event. By (9), only the initial transition must occur within PTS, but a stative or activity event could continue and overlap with the reference time, accounting for the in-progress readings of states and activities with *sił*.

Deriving actuality entailments. We derive AEs following the template of Hacquard (2006), but using the inchoative perfect in (9) instead of a perfective aspect. We assume, in line with the morpheme ordering of Ktunaxa, that *sił* scopes over *tał*, as in (10). We analyze the modal *tał* as a circumstantial possibility modal with modal base f and ordering source g as in (11).

(10) *sił* > *tał* > VP

(11) $[\![\text{tał}]\!]^{w,c} = \lambda P \lambda e.\exists w' \in \text{Best}_{g(w)}(\cap f(w)) : P(e)(w')$

Before putting these pieces together, we modify slightly the semantics of *sił* based on the following entailment: if BECOME$(P)(e)$ is true, then P(fin(e)) is true, i.e., a P-event has occurred at the end of the transition from not-P to P. The modified semantics of *sił* is then as in (9′):

(9′) $[\![\text{sił}]\!]^{w,c} = \lambda P \lambda t.\exists e[e \text{ in } w \text{ \& } P(\text{fin}(e)) \text{ \& } \tau(e) \subseteq PTS_c(t)]$

Putting this all together, the truth conditions for the first clause in (1) are thus given in (10). Based on the configuration in (10), the world variable of *sił* cannot feed into the modal and is instead bound by the actual world w_0. In the absence of overt tense in Ktunaxa, we assume a past or present reference time t is given by the context.

(12) $\exists e[e \text{ in } w_0 \text{ \& } \tau(e) \subseteq PTS_c(t) \text{ \& } \exists w' \in \text{Best}_{g(w_0)}(\cap f(w_0)) : \text{J-lift-fridge}(\text{fin}(e))(w')]$

In prose, (10) says that there is an event e in the actual world w_0, which is located within the PTS, such that in some world w' compatible with the circumstances in w_0, the final sub-event of e is a John-lifing-a-fridge event in w'. These truth conditions are highly similar to Hacquard's for a perfective-marked ability modal, modulo the event e as a change-of-state event in the case of Ktunaxa. To ensure that e is an actual transition to John lifting a fridge, we follow Hacquard in invoking the Preservation of Event Description principle, which states that speakers assume the same event has the same description in all the worlds in which it occurs. Finally, we claim that (2) does not give rise to AEs because future *¢* encodes modality (Laturnus, 2011). Following Bhatt and Hacquard, AEs do not obtain when the aspect scoping over the ability modal introduces its own modality. This view can explain the lack of AEs in Ktunaxa when *tał* combines with a different progressive aspect *sakił* or with habitual *ʔat*, which we also analyze as introducing their own modality (data not shown due to space).

Conclusion. This study highlights cross-linguistic variation in the aspectual make-up of actuality entailments beyond the perfective-imperfective contrast, and also underscores the importance of detailed fieldwork for uncovering the semantic contribution of aspect morphemes.

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