Ordering Aspect in Nsyilxcn: Exclusive vs. Inclusive Ordering

Nsyilxcn sentential aspect consists of three interactive layers, what I refer to as 'ordering aspect' (prospective/retrospective) following Rullmann & Matthewson (2018), 'extended/non-extended' aspect (cf. Lyon 2024), and inclusion aspect ('base' perfective/imperfective).

(1) *k- / Ø-* *s- / Ø-* *c- / Ø-*
[$_{\text{Tense}}$ … [$_{\text{Asp3}}$ PROS/RETR [$_{\text{Asp2}}$ EXT/NEXT [$_{\text{Asp1}}$ IPFV/PFV [... vP/AP]]]] (Nsyilxcn)

Non-extended ('NEXT') perfectives and imperfectives are distinguished by whether an event *stage* is required (perfectives), or only an eventuality part (imperfectives), and by whether a *proper* eventuality stage/part is required (imperfective) or not (perfective). Notably, base perfectives only imply without entailing a maximal interpretation (2) (A maximal event either culminates or ceases to continue relative to some world, Altschuler 2014, Ferreira 2016), these can also have non-maximal, continuing event readings.

(2) *Context 1: I see my brother drop an apple core in the trash. It was my apple.*
Context 2: I look over and see my brother with my apple in his mouth.
i-łqáqcaʔ **kʷu** **Ø-ʔiɬ-[ɬ]t-s** in-ʔápəl.
1SG.POSS-older.brother 1PL.OBJ PFV-eat-REDR-3ERG 1SG.POSS-apple
Reading 1: My big brother ate my apple. (Dave Michele | VF)
Reading 2: My big brother is eating my apple. (Delphine Derrickson-Armstrong | VF)

Extended aspect has the effect of enforcing maximality over the set of eventuality sub-parts that are stages, specifically; this means that an extended perfective *entails* maximality (3a), in contrast to a base perfective (2). An imperfective event need not denote an event stage, only an event part. Thus, extended imperfectives are predicted to allow non-maximal readings (3b).

(3) *Context: You're looking at your friend John who is currently eating an apple.*
a. #Ø-ʕaċ-nt, John **s-Ø-ʔiɬn-m-s** iʔ ápəl.
PFV-look-DIR John EXT-PFV-eat(-DIR)-EXT-3POSS DET apple
#Look at him, John has eaten the apple.
(Delphine Derrickson-Armstrong, Dave Michele | CF)

b. Ø-ʕaċ-nt, John **s-c-ʔiɬn-m-s** iʔ ápəl.
PFV-look-DIR John EXT-IPFV-eat(-DIR)-EXT-3POSS DET apple
Look at him, John is eating an apple. (Delphine Derrickson-Armstrong | VF)

Extended aspect also introduces a time span *i* which contains the runtime of the eventuality, and a reference time *i'*, and requires that *i'* be an edge sub-interval of *i,* and therefore that the intersection between *i'* and *i* be non-empty ($i \cap i' \neq \emptyset$. cf. Pancheva's 2003 semantics for 'neutral' aspect). This allows for an 'extended-now' interpretation to both extended perfectives (not shown) and imperfectives (4a), an interpretation which is generally missing from base predicates (4b). Under an extended-now semantics the adverbial clause in (4a) has a *since* interpretation, such that the left boundary of *i* is the beginning of the period 'when I was young', the reference time *i'* is speech time t_0, and the helping occurred continuously (or habitually) throughout *i*.

(4) *Context: Your friend asks whether this is the first time you've helped your aunt.*
a. kn łə sḵʷəḵʷíymalt kiʔ **i-s-c-knxít-əm** i-sẇaʔẇásaʔ.
1SG.SUBJ when child ADJT.C 1SG.POSS-EXT-IPFV-help(-DIR)-EXT 1SG.POSS-aunt
I've been helping my aunt ever since I was young. (Dave Michele | VF)

b. #kn łə sḵʷəḵʷíyməlt kaʔ **c-knxít-st-n** i-sẇaʔẇásaʔ.
1SG.SUBJ when child ADJT.C IPFV-help-CAUS-1SG.ERG 1SG.POSS-aunt
Target: I've been helping my aunt ever since I was young.
Actual: #I helped (hab.) my aunt when I was young.(Delphine Derrickson-Armstrong | CF)

I propose that a null operator ('NEXT' for non-extended) applies to a base (im)perfective (4b) which does not require *i'* to be an edge subinterval, thus pragmatically blocking the extended-now interpretation required for a *since* interpretation.

Unlike a perfect, extended (im)perfectives allow prospective interpretations when they co-occur with prospective aspect (5a,b). Therefore I assume a ∅- retrospective marker in cases like (4a,b) which alternates with prospective *k-*. For retrospective extended predicates, *i'* is a final subinterval of *i,* for prospective extended predicates (5a), *i'* is an initial subinterval of i.

(5) a. cəm̓ łaʔ x̌lap kʷ łaʔ ckicx,
EPIS when tomorrow 2SG.SUBJ when arrive
kn **k-s-c-xʷḵʷiɬxʷ-aʔx**.
1SG.SUBJ PROS-EXT-IPFV-clean.house-(EXT)-PROS
When you get here tomorrow, I'll be cleaning the house.
(Delphine Derrickson-Armstrong, Dave Michele | CF)

b. kn łə ḵiwəlx, nyʕip **kn** **k-c-x̌əs-m-ncút-aʔx**.
1SG.SUBJ when old always 1SG.SUBJ PROS-IPFV-good-MID-REFL-PROS
When I'm old, I'll always be kind. (Delphine Derrickson-Armstrong, Dave Michele | CF)

Given that (a) an extended-now semantics can co-occur with, and is thus separate from, ordering aspect in Nsyilxcn, and that (b) an intersection requirement is responsible for the contrast in (4a,b), I suggest that ordering aspect needs to be sensitive to the intersection properties of its argument. This means that the usual definition of ordering aspect as involving a precedence relation between two times '<' will not suffice. I propose that for Nsyilxcn, ordering aspect (6) may be defined using a relation '⋖' which allows but does not require *i'* to be an edge subinterval (7) (since it may or may not be the case that $t' \in g(i)$) (cf. Pancheva 2003). A prospective/retrospective predicate thus 'inherits' the intersection property of its argument.

(6) a. $[\![k\text{-PROS}]\!]^{g,t0,w0} = \lambda P_{<i,<i.st>>}\lambda i'\lambda w.\exists i[i' \lessdot i \wedge P(i,i')(w)]$ *prospective*
b. $[\![\emptyset\text{- RETR}]\!]^{g,t0,w0} = \lambda P_{<i,<i.st>>}\lambda i'\lambda w.\exists i[i \lessdot i' \wedge P(i,i')(w)]$ *retrospective*

(7) $g(i) \lessdot g(i')$ iff $\exists t[t \in g(i) \wedge t \notin g(i') \wedge \forall t'[t' \in g(i') \rightarrow t < t']]$

Overall, Nsyilxcn helps show that extended-now semantics are neither inherently retrospective, nor must they coalesce with ordering aspect.

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