

Defining evidentiality through time of belief-state change: data from Forest Nenets

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▲ **Introduction**¹. Evidential markers have been traditionally characterized by the type of evidence available for the prejacent proposition p , i.e. direct vs indirect. However, there is an emerging line of study suggesting that the empirical picture of evidentiality can be better predicted if the temporal properties of evidentials are taken into account (Fleck 2007; Lee 2013; Smirnova 2013; Bowler 2018 a.o.), some even going as far as to suggest that no additional meaning components are necessary aside from the temporal distance (Koev 2016). In this talk I will present the data on the Forest Nenets (Samoyedic<Uralic) auditive (-won, AUD) and inferentive (-mæ, INFR) markers and argue that the direct/indirect evidence effect associated with these markers can be derived through temporal restrictions on the relation between the topic time of the embedded proposition and the time of the belief-state change.

▲ **Temporal ontology**. In temporal studies on evidentiality, the classical neo-Reichenbachian ontology of Speech Time (ST), Topic Time (TT) and Event Time (ET) (Reichenbach 1947; Klein 1994) is expanded to also include Learning Time (LT). Here I will model LT as a moment when the Speaker goes from the empirical state of being ignorant about p to a state of believing in p , in other words, the moment of belief-state change (Johnson 2022). Some approaches use Evidence Acquisition Time (EAT, Hirayama & Matthewson 2022) instead of LT, but I will argue that LT is better suited for the Forest Nenets data than EAT. The expanded temporal ontology used to describe the empirical data on evidential tense is given below.

ET \leftarrow Aspect \rightarrow TT \leftarrow Evidential tense \rightarrow LT \leftarrow Tense \rightarrow ST

Figure 1. Temporal ontology for evidentials

In her seminal work, Izvorski (1997) famously proposed that evidentials could be analyzed as epistemic modals with additional constraints on the modal base. To account for the Forest Nenets data, I suggest that evidential operators denote an event of belief-state change from ignorance to believing p . Evidentials also place additional restrictions on the relation between the TT of the prejacent and the time of belief-state change, i.e. LT.

▲ **Data**. Forest Nenets auditive -won has been described as a direct evidential involving non-visual evidence, be it hearing, taste, smell etc. The inferentive -mæ has been characterized as an indirect evidential with reportative, mirative and inferentive interpretations (Burkova 2022 for Forest Nenets; Nikolaeva 2014; Jalava 2017 for Tundra Nenets). Both AUD and INFR forms may receive past tense marking, which does not encode the TT<ST relation, as in evidentially unmarked clauses, but rather LT<ST, see (1). Here the time when p was both perceived and realized is shifted into the past from ST.

- (1) čej řáč kæw-mana d'at-ʔma-xana-j pi^hči
yesterday home-POSS.3DU near-PROL stroll-NM.PST-LOC-POSS.1SG they.DU
pótuλ-wonu-če-ńš / #pótuλ-wono-č
argue-AUD-3DU-PST / #argue-AUD-3DU
'Yesterday, when I was passing by their chum, [I heard that] they were arguing'

Notably, the shift of TT further into the past from LT is unavailable for AUD, i.e. it does not allow for perception of events that happened at some time prior to LT, as in (2).

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- (2) íneλša-ta taλša čej ŋamæ-xama paλa? ní-ša / #paλa-won(o-š)
 smell-POSS.3SG such.that yesterday what-SCAL burn-CNG NEG-PST.Q / #burn-AUD(-PST)
 ‘It smells like something has burned yesterday’

The analogous TT<LT configuration is perfectly acceptable for INFR, however. Consider (3), where the Speaker realizes about the event that happened either a few hours or a day before LT.

- (3) {While looking at the footprints}
 čuk’i-mana {d’uλnu-ŋ / čej} ti-ŋ kanum-ta {kaj-maj / #kaj-mæš}
 this-PROL morning-GEN / yesterday deer-GEN kill-PT.PRES go-INFR / #go-INFR-PST
 ‘A wolf was walking by here {this morning / yesterday}’

▲ **Proposal.** I suggest that AUD and INFR place the following lexical constraints on the TT~LT relation. AUD requires LT to overlap with the TT, which surfaces as an effect of ‘direct evidence’ — realization of p should happen simultaneously with p . INFR, however, has an inverse requirement of TT<LT. Therefore, INFR only allows for belief-state change to happen after the time which the realization is concerning. Example (4) illustrates this contrast in the so-called ‘late realization scenario’, where the event is realized only after it has been perceived. Note that, while AUD is unavailable in a late realization scenario, INFR is perfectly fine. This example additionally demonstrates why LT is used in this study instead of EAT — it is clearly the moment of belief-state change that is lexically restricted and not the moment of evidence acquisition. The empirical picture of the available temporal configurations for both AUD and INFR is illustrated in Figures 2 and 3 accordingly.

- (4) [Yesterday I was passing by their chum and heard some noise. I didn’t understand what it was at the time, but now I get it.]

- a. mašnanta maša apa-xa-nta pótuλ-maj
 turns.out M. older.sister-DAT-POSS.3SG argue-INFR
 b. #maša čej apa-xa-nta pótuλ-wonu-ta-(š)
 M. yesterday older.sister-DAT-POSS.3SG argue-AUD-POSS.3SG-(PST)
 ‘Yesterday, [I heard that] Masha was arguing with her sister’

$$ET \leftarrow (\text{Null aspect or FUT}) \rightarrow TT \supseteq LT \leftarrow_{\text{PST or FUT}} \rightarrow ST$$

Figure 2. Temporal schema of the auditive

$$ET \leftarrow (\text{Null aspect or FUT}) \rightarrow TT < LT \leftarrow_{\text{PST or FUT}} \rightarrow ST$$

Figure 3. Temporal schema of the inferitive

The proposed TT<LT restriction for the INF makes a substantial additional prediction. Cross-linguistically, indirect evidentials with mirative interpretations confusingly do allow for contexts of direct perception. It has also been noted that indirect evidentials in such contexts require the situation to be perceived in the middle of its runtime, see (5) (Hirayama & Matthewson 2022; Melenchenko 2024). If we take the TT<LT restriction into account, combined with the IPFV aspect of the preajacent, the requirement for p to have begun earlier than it was perceived follows naturally. Hence, the temporal approach to evidentials gives a more robust prediction for mirative interpretations than a standard differentiation between direct and indirect evidence.

- (5) waška kaλ’ita pisana-m-ta wiλti-m’pó-maj
 V. himself table-ACC-POSS.3SG wash-DUR-INFR

‘Vasya is cleaning the table’

{^{ok}Context 1: I enter the room and notice something}

{#Context 2: I am watching over my son and see that he has approached the table and started helping to clean it up}

▲ Glosses

ACC — accusative;

AUD — auditive evidential;

CVB — converb;

DAT — dative;

DUR — durative;

INFR — inferentive;

GEN — genitive;

LOC — locative case;

neg — negative verb;

PL — plural number;

PT.PRES — present tense participle;

POSS — possessive;

PROL — prolative;

PST — past tense;

SCAL — additive marker;

SG — singular number.

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