The semantics of *ky* particle in Tundra Nenets

Introduction This paper examines the meaning of *ky*-marking in Tundra Nenets. In unembedded contexts, *ky* conveys possibility or a doubt (Nikolaeva 2014), as in (1)a. Drawing on fieldwork in the Nenets Autonomous Region of Russia, we identify restrictions on embedding *ky* under factive verbs such as *know*. Two constraints emerge: (i) a *ky*-marked clause under a factive verb must receive a question, not propositional, interpretation; and (ii) such embeddings occur only when the factive verb is itself under negation or a modal.

Empirical facts *Ky* also appears in polar question as in (1)b without questioning possibility. An adverb like *for sure* is acceptable in a *ky*-question but not in a *ky*-marked assertion (1)a.

(1) a. Vanja (#jivjer[q]) to.na.ky.
Vanja (#for sure) came.PART.PROB
'Vanja (#for sure) may be/probably came'.

b. Vanja (jivjer[q]) to.na.ky?
Vanja (for sure) came.PART.PROB?
'Did Vanja (for sure) come?'

In general, native speakers report that in (1a) the speaker expresses uncertainty or doubt. A *ky*-marked clause **cannot** appear **under *know* unless** embedded **under negation** as in (2) or a **modal**, as in (3) (existential epistemic) or (4) (acceptable in a universal deontic or epistemic contexts). In (2), the embedded clause is interpreted as a question, not as expressing possibility. Interpreting *ky* as a possibility modal would predict infelicity in (4), similar to English (5). This restriction holds for all factive verbs except *juras'* 'forget'.

(2) Anja *(ni) tjenjeva, Vanja to.naky.
Anja *(NEG) know, Vanja came.PART.PROB.
'Anja does not know if Vanja came.'

(3) Anja xarvabta tjenjeva, Vanja to.naky.
Anja possibly know Vanja came.PART.PROB
'Anja might know if Vanja came.'

(4) Anja tjenjeva.bta tara, Vanja to.naky.
Anja know.CON must Vanja came.PART.PROB
'Anja must know if Vanja came.'

(5) Xibjaxart ni tjenjeva, Vanja to.naky. Man' ibjedorŋam', pyda nivy tu[q].
Nobody NEG knows Vanja came.PART.PROB. I think he NEG came
'Nobody knows whether Vanja came. I think he didn't come.'

(6) No one knows that Vanja probably came. #I think he did not come.

This embedding pattern parallels those of question focus particles like *kya* in Hindi (Dayal 2020; Bhatt & Dayal 2020; Biezma et al. 2025) and li *in* Bulgarian (Dukova-Zheleva 2010), but *ky* differs in not requiring a question context and not having focus sensitivity.

The proposal The pattern we observe with the embedding of *ky* parallels that found with epistemic indefinites and free-choice items such as Italian *un N qualsiasi*, German *irgendein N*, Spanish *algún*, and Mandarin *shenme* (Alonso-Ovalle & Méndez-Benito 2010; Aloni & Port 2010; Chierchia & Liao 2015; Liao 2010; Chierchia 2013, a.o.). We propose extending Chierchia's (2013) Exh-based analysis of these indefinites to the Tundra Nenets data.

We propose that the basic semantics of *ky* is that of a question operator: it combines with a proposition and yields a polar question.

(7) $[\![ky]\!]^w = \lambda p_{<s,t>}. \{p, \neg p\}$

Case 1: *know+ky In addition, *ky* introduces subdomain alternatives that must be used by *Exh*. Accordingly, we propose that (2) without negation has the LF shown in (8).

(8) [Exh A knows [[V came] ky]]

Somewhat simplifying, Exh's prejacent is as in (9): Ann knows that either V came or that V did

not come.

(9) $\exists p[p \in \{\lambda w''.\text{V came in } w'', \lambda w''.\neg \text{V came in } w''\} \ \& \ \forall w'[wR_A w' \rightarrow p(w')=1]$

We propose that the subdomain alternatives (excluding the prejacent) are as in (10), or equivalently (11). We propose that *Exh* ignores the presuppositions of these alternatives. Following the standard definition, *Exh* asserts the prejacent and negates all alternatives not entailed by it.

(10) Alt_{subd}: $\{\lambda w.\exists p[\in \{\lambda w''.\text{V came in } w''\} \ \& \ \forall w'[wR_A w' \rightarrow p(w')=1],$
$\lambda w.\exists p[\in \{\lambda w''.\neg \text{V came in } w''\} \ \& \ \forall w'[wR_A w' \rightarrow p(w')=1]\}$

(11) Alt_{subd}: $\{\lambda w.\forall w'[wR_A w' \rightarrow \text{V came}(w')], \lambda w.\forall w'[wR_A w' \rightarrow \neg \text{V came}(w')]\}$

Neither alternative is entailed by the prejacent: from the fact that A knows whether V came, it does not follow that A knows that V came, nor that A knows that V did not come. These alternatives are therefore negated, and their negation, combined with the assertion of the prejacent, yields a contradiction. As a result, the sentence is perceived as ungrammatical.

(12) $[\![(8)]\!]^w = T$ iff $\exists p[\in \{\lambda w''.\text{V came in } w'', \lambda w''.\neg \text{V came in } w''\} \& \forall w'[wR_A w' \rightarrow p(w')=1] \ \& \ \exists w'[wR_A w' \& \neg \text{V came}(w')] \ \& \ \exists w'[wR_A w' \& \text{V came}(w')]$

Case 2: not know+ky Under negation, the situation changes: both alternatives distinct from the prejacent are now entailed by it. *Exh* therefore has nothing to negate, and the sentence is grammatical.

(13) The prejacent: $\neg\exists p[\in \{\lambda w.\text{V came in } w, \lambda w.\neg \text{V came in } w\} \ \& \ \forall w'[wR^k{}_x w' \rightarrow p(w')=1]$

(14) Alt: $\{\lambda w.\ \neg\forall w'[wR_A w' \rightarrow \text{V came}(w')], \lambda w.\ \neg\forall w'[wR_A w' \rightarrow \neg \text{V came}(w')]\}$

Case 3: must know+ky The compatibility of *ky*-embeddings with *must know* follows straightforwardly: the predicted truth conditions in (16) are consistent. A must know the answer to the question of whether V came, but she is not obligated to know any particular answer.

(15) [Exh must A knows [[V came] ky]]

(16) $\Box_{ww''} \exists p[\in \{\lambda w'''.\text{V came in } w''', \lambda w'''.\neg \text{V came in } w'''\} \ \& \ \forall w'[w'' R_A w' \rightarrow p(w')=1] \ \&$
$\Diamond_{ww''} \exists w'[w'' R_A w' \& \neg \text{V came}(w')] \ \& \ \Diamond_{ww''} \exists w'[w'' R_A w' \& \text{V came}(w')]$

Case 4: might know+ky We follow much of the literature on free-choice effects under possibility modals and assume these effects arise through a double layer of exhaustification (Fox 2007; Chierchia 2013). We implement this by inserting a second *Exh* in the LF, as shown in (17).

(17) [Exh Exh Possibly A knows [[V came] ky]]

We omit the computation in the interest of space, but the resulting interpretation amounts to: it is possible that A believes that V came, and it is possible that A believes that V did not come, which captures the meaning of the sentence

Case 5: Unembedded possibility/doubts reading We propose that the ignorance meaning of unembedded *ky* arises by inserting a K operator between *Exh* and the prejacent (Meyer 2013; Fox 2016; Crnič 2021, 2024; Buccola & Haida 2020). Because the modal K composes with a proposition rather than a set of propositions, we posit an existential closure operator ∃. The resulting meaning, shown in (19), can be paraphrased as: the speaker knows that V either came or did not, but is ignorant about each specific outcome. This captures the ignorance effect contributed by *ky*.

(18) [Exh K ∃ [[V came] ky]]

(19) $[\![(18)]\!]^w = T$ iff $\Box_{ww''} \exists p[\in \{\lambda w.\text{V came in } w, \lambda w.\neg \text{V came in } w\} \ \& \ p(w'')=1] \ \& \ \Diamond_{ww''} \neg \text{V came}(w'')] \ \& \ \Diamond_{ww''} \text{V came}(w'')]$

Forget We propose that *ky* embedding under positive *forget* is possible due to its downward-entailing nature, which ensures that both subdomain alternatives are entailed by the prejacent.

In the talk, we will also discuss *ky* embeddings under non-factive verbs such as *believe* (*punras'*) and *hope* (*jena*), where they only gets non-question, doubt, or possibility interpretations.

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