Deriving epistemic modality from inverted negation in Forest Nenets[1]

Daria Sidorkina,
Laboratory of Formal Models in Linguistics, HSE University
sidorckina.darya@yandex.ru
TripleA12 @ TUFS, Tokyo

1. Entering – epistemical negation

▲ Forest Nenets sentential negation is formed by combining a negative verb *ni-*, which bears agreement, and a lexical verb in a connegative form (Burkova 2022; Potseluev 2023).

[[*ni*-AGR V-CNG]] – **negation proper**

(1) mań ńi-ta-š ŋamoλ
I   NEG-1SG-PST eat.CNG
'I haven't eaten'   (Potseluev 2023)

▲ If the order of a negative verb and a connegative is reversed, the construction loses the meaning of negation and turns into epistemic modality (Burkova 2022; Glavatskih 2023).

Burkova (2022) labels it as '*epistemic hypothesis with a relatively low degree of certainty*'

Let's call it epistemic negation.

[[V-CNG *ni*-AGR]] – **epistemic negation**

(2) {I hear voices in the next room}
ńeḿa-m   ńeša-m   munuʔ-s ńi-x́iŋ
mother-POSS.1SG   father-POSS.1SG   talk-CNG NEG-3DU
'It must be mom and dad talking'   (Glavatskih 2023)

(3) [It's cold]
šičaλši-m   ńeḿa naj-ʔ   ńi-ša
window-ACC mother open-CNG NEG-PST.Q
'Mother has probably opened the window'

▲ Sometimes the connegative marker on the lexical verb is omitted and two verbs are used as what seems to be a single phonological word, see (4).

(4) {I enter the kitchen and nobody's there}
(katλ´uʔ)   čuʰpej konʹu-nʹi-ʔ
perhaps   all   sleep-NEG-3PL
'Everyone must be sleeping'

→ Where could this meaning possibly come from?

$\rightarrow$ **What is the bridge between pure negation and epistemic modality**?

▲ **Roadmap**

1. Data

2. Question(able) traces

3. HighNeg Hypothesis

4. Disjunction Hypothesis   (pseudo-negation is disjunction of the form $p \vee \neg p$)

5. Introducing InqU
     (the epistemic modal meaning is derived through Attentive Inquisitive Semantics)

6. A problem with the analysis

▲ **Notes**

■ Unless stated otherwise, our data were elicited during several fieldtrips to Tarko-Sale city in Yamal-Nenets Autonomous Region, conducted by HSE University in 2023-2025.

■ Each example was verified by a minimum of three consultants. Throughout these trips, I have worked with 11 native speakers and I am deeply grateful for their time and effort.

■ Contexts that were provided in Russian will be given as {...Context...}. Contexts that were translated into Forest Nenets will be given as [...Context...].

2. Data

▲ Aside from epistemic standalone uses, pseudo-negation also appears in complements of the verb *dexeλaš/dʲaλḿiŋaš* 'not know'. It is mandatory in polar complements, see (5), and optional in complements with *wh*-words, such as (6). It also seems to lose its epistemic meaning.

(5) maša daλʼmi-ŋa   čuki dʲaλa-ŋ waša {tuλ   ńi-ša   / *tuλ-sa}
    M.   not.know-GFS this day-GEN V. {arrive.CNG NEG-PST.Q / *arrive-PST.Q}
    'Masha doesn't know whether Vasya came today'

(6) maša dʲex́eλa kʼińa čukʼi dʲaλa-ŋ {tuλ   ńi-ša   / tuλ-sa}
    M.   not.know who   this day-GEN arrive.CNG NEG-PST.Q   / arrive-PST.Q
    'Masha doesn't know who came today'

Note that we cannot analyze pseudo-negation in complements of *dʲex́eλaš* as somehow reflecting the negation from the matrix clause ('not know'), since *dʲex́eλaš* also takes nominal complements that lack negation, see (7).

(7) čuki   ńeša-m   dʲexeλa-ŋa-t
    this   human-ACC   not.know-GFS-1SG
    'I don't know this man'

▲ Pseudo-negation **fails to license NPIs**.

In Forest Nenets, indefinite pronouns are formed by different scalar suffixes. First, consider the suffix *-xaλt* (SCAL), which is a strong NPI, shown in (8-9).

(8) kiḿa-xaλt ńi tu-ʔ
who-SCAL NEG come-CNG
'Nobody came' (Pisarenko 2023)

(9) *kiḿa-xaλt to-pa-j mań majna-ďe-m
who-SCAL come-COND-POSS.1SG I happy-REFL-1SG
Intended: 'If anyone comes, I will be glad.' (ibid.)

Second, consider *-xama* (TOP), which seems to be a PPI.

(10) ŋašḱi-ʔuďi ŋama-xama-m patŋa
child-DIM what-TOP-ACC draw
'The child has drawn something'. (Pisarenko 2023)

(11) kim'a-xama n´i-maj tu-ʔ
who-TOP NEG-EVID come-CNG
ᵒᵏContext 1: {5 out of 6 people came} 'Someone didn't come.' WIDE SCOPE!
#Context 2: {0 out of 6 people came} 'Nobody came' (ibid.)

While proper negation licenses the NPI *-xaλt* and disallows the PPI *-xama*, for pseudo-negation we get the reverse picture, see (12-13).

Regular negation:

(12) {I come to the school library and see untouched textbooks on the table. I ask the librarian:}
tamna ḱiḿa-xaλt / *ḱiḿa-xama ńi-ša tuλ?
yet who-SCAL / *who-TOP NEG-PST.Q arrive.CNG
'Nobody came by yet?'

Pseudo-negation:

(13) {I come to the school library and ask the librarian:}
ḱiḿa-xama / *ḱiḿa-xaλt tuλ ńi-ša?
who-TOP / *who-SCAL arrive.CNG NEG-PST.Q
'Maybe, someone came by?'

▲ pseudo-negation can be combined with regular negation

(14) masa kupi-m ńi-štu-ʔ ńi ŋam
M. fen-berry NEG-HAB-CNG NEG eat.CNG
'Masha probably doesn't eat fen-berry'

3. Question(able) traces

▲ Morphologically, pseudo-negation resembles a question rather than a declarative sentence

Forest Nenets has two morphemes of past tense:

■ regular past — -š (PST)

■ interrogative past — -sa / -ša (PST.Q)

Regular past:

▲ attaches after agreement

(15) STEM-AGR-PST

(16) ńat   ńaλ-ŋa-ta-š
chum   mount-GFS-SUBJ.1SG-PST
'I have mounted a chum' [I know how to do it]   (Kulikova 2023)

Interrogative past:

▲ attaches before agreement

(17) STEM-PST.Q-AGR

(18) piʰt šaxaλʹiŋ ti-ŋ   kanunta-m {manæ-sa-n   /   *maniʔ-ŋa-na-š}?
you   once   deer-GEN killer-ACC look-PST.Q-2SG /   *look-GFS-2SG-PST
'Have you ever seen a wolf?'

▲ As evident from the name, interrogative past appears in questions while regular past is restricted to affirmative sentences.

(19) a. mansdʹa-m-ta   dʹoλši-ŋa-ta(ᵒᵏ-š)
work-ACC-POSS.3SG   finish-GFS-3SG>SG-(PST)
'She finished working'

b. mansdʹa-m-ta   dʹoλši-ŋa-ta(*-š)?
work-ACC-POSS.3SG   finish-GFS-3SG>SG-(*PST)
'She finished working?'

▲ Interrogative past also appears in unconditional contexts like (20) and in sentential arguments under dʹeɕeλaš 'to not know' (21).

(20) kʹińa   {to-sa   / *to-š}   čuʰp̓ej   ńumku-maj-ʔ
who   come-PST.Q / *come-PST   all   fight-EVID-3PL
'Whoever came, all of them fought'

(21) mań dʹeɕeλa-ŋa-t   šaŋok   puŋ dʹiλʹi-ʔ   ńi-ša
I   not.know-GFS-1SG how.much long live-CNG   NEG-PST.Q
'I don't know for how long did he live'

▲ PST.Q does not appear with simple negation in affirmatives (22), but it does appear with epistemic negation, which leads us to suspect that pseudo-negation is interrogative.

(22) waša   ṕeťa-m   ńi-š   ṕentλ´i-ʔ
     Vasya   Petya-ACC NEG-PST   hit-CONNEG
     'Vasya didn't hit Petya'

(23) ṕiẋińa xaλ´u   ŋi-ńi-{ša   / -*š}
     outside rain   be-NEG-PST.Q / -*PST
     'It must've been raining outside' [Go check]

▲ Judging from PST.Q marking, Gusev (2020) suggests that Nenets pseudo-negation is a rhetorical question.

4. HighNeg Hypothesis

▲ It has been observed that in several languages questions containing negation can be composed in two ways: with **high or low negation** (Domaneschi, Romero & Braun 2017; Todorović 2024 and references therein; Šimík to appear; Romero & Han 2004).

(24) a. Is John cooking a Mexican dish?   PosQ
     b. Is John not cooking a Mexican dish?   LowNegQ
     c. Isn't John cooking a Mexican dish?   HighNegQ
     d. Isn't John not cooking a Mexican dish?   LowNeg+HighNegQ two negations combined!
                   (AnderBois 2019)

▲ The felicity conditions of HighNeg and LowNeg questions are different, therefore the difference between the two does not boil down to syntax. Consider example (25).

(25) Scenario: *S hates both Pat and Jane. The prospect of an excursion without them pleases S. S does not have any previous belief about whether either of them is coming or not.*
     A: Pat is not coming.
     S: Great! Is Jane not coming (either)? That would be the best!!!
     S': #Great! Isn't Jane coming (either)? That would be the best!!!   (Romero & Han 2004)

▲ HighNeg questions have been generally suggested to involve some kind of positive Speaker bias, i.e. Speaker's knowledge should support, at least to some extent, the truth of the embedded proposition p (Buring & Gunlogson 2000; Romero & Han 2004). See an illustration in (26).

(26) a. A: Ok, now that Stephan has come, we are all here. Let's go!
     b. S: Isn't Jane coming?
        Prior speaker bias: Jane is coming
        → **pseudo-negation and HighNeg questions both involve positive bias**

▲ Just like pseudo-negation, **HighNeg questions also fail to license NPIs** or NCIs, see examples from Serbian in (27).

(27) a. Da   li stvarno nikog   nije   primetila?
       COMP Q really   no one   not-AUX   notice.PART.F.SG
       'Did she really not notice anyone?'

b. * Nije li Vera Videla nikoga?
  NEG+AUX Q Vera see.PART.F.SG no one
  'Didn't Vera see anyone?' (Miličević 2007)

▲ So far pseudo-negation and HighNegQs seem convincingly similar, however…

Epistemic vs Evidential bias

▲ Büring and Gunlogson (2000) note that, aside from positive epistemic bias, HighNeg questions require compelling contextual evidence against p. Evidence against p is regarded as compelling, if, in an isolated situation, it would give the participants of the conversation sufficient ground to assume $\neg p$. Here I will follow (Sudo 2013) and label this type of outer evidence as 'evidential bias'

As an illustration, consider English examples from (Todorović 2024).

(28) *positive epistemic bias, negative evidential bias*
[Tomorrow you need to go from Hamilton to Toronto very early. Your brother travels that route often and he usually takes the bus early in the morning, before 7 a.m. You go to the station in the morning and the operator says: 'The only bus available is at 2 p.m.' You ask:]
a. #Is there no bus in the morning? (LowNegQ)
b. Isn't there a bus in the morning? (HighNegQ) (ibid.)

▲ Similarly to HighNeg questions, questions containing epistemic modality also convey positive epistemic bias. The difference between the two lies in compatibility with compelling negative evidence.

(29) John looked pretty happy coming back from school (Larrivée & Mari 2022)
a. – Il doit avoir r´eussi son examen de math. / 'He must have passed the big maths test.'
b. – #N'a-t-il pas r´eussi son examen de math? / '#Didn't he pass the big maths test?'

(30) John looked pretty down coming back from school (ibid.)
a. – #Il doit avoir r´eussi son examen de math. / '#He must have passed the big maths test.'
b. – N'a-t-il pas r´eussi son examen de math? / 'Didn't he pass the big maths test?'

(31) **Modality in questions** – positive epistemic + neutral/positive evidential bias
   HighNeg questions – positive epistemic + negative evidential bias

▲ !Pseudo-negation is **infelicitous in contexts of negative epistemic bias**.

(32) {I come to the shop and don't know what they might be selling today. The shopkeeper tells me that they only have oil and shaving foam. I say:}
ďa-m ńi-ša-ta   taʔ
flour-ACC NEG-PST.Q-3SG>SG bring.CNG
'(Just in case,) Flour wasn't brought in?' *neutral epistemic bias, negative evidential bias*

(33) {I come to the shop. Earlier my neighbour told me that they brought flour to the shop. The shopkeeper tells me that they only have oil and shaving foam. I say:}

ďa-m	ŋami	{ńi-ša ta? / #ta? ńi-ša}
flour-ACC	what	{NEG-PST.Q bring.CNG / #bring.CNG NEG-PST.Q}

'Didn't they bring flour?'   *positive epistemic bias, negative evidential bias*

	HighNeg questions	Pseudo-negation
Interrogative marking	+	+
Require an answer	-	-
License NPIs	-	-
Positive epistemic bias	+	+
Allows for two NEG	+	+
Negative evidential bias	-	+
Embeddable	-	+

Table 1.   Properties of HighNegQ compared to pseudo-negation

5. Disjunction Hypothesis

▲ Disjunction of two clauses in Forest Nenets can look as plain juxtaposition, consider $p \vee \neg p$ disjunction in (34). It looks suspiciously similar to pseudo-negation. Note the PST.Q marking!

(34) piʰta prazdnika-n   to-sa   (ŋaj) ńi-ša
       (s)he celebration-DAT come-PST.Q (ADD) NEG-PST.Q
       'Did he come to the celebration or not?'

- But how can disjunction be connected to epistemic modality?

▲ Modal semantics have been long concerned with the problem of free choice permission. Standard Boolean logic fails to predict an inference that is produced by possibility modals with disjunction in the prejacent, as shown in (35).

(35) Mr. X may take a bus or a taxi.
       ⤳ Mr. X may take a bus.
       ⤳ Mr. X may take a taxi.
       $\Diamond(p \vee q) \not\leftrightarrow \Diamond(p)$

▲ Zimmermann (2000) proposes to analyze disjunctions as conjoined lists of epistemic possibilities. Therefore, the sentence in (36a) can be paraphrased as (36b). Zimmermann's insight illustrates a key intuition that disjunction in natural language is not simply a Boolean connective, but rather a collection of possibilities.

(36) a. Mr. X is in Victoria or he is in Brixton.
       b. Mr. X might be in Victoria and he might be in Brixton.

Another example of disjunction having modal properties comes from Korean. Kang and Yoon (2020) examine the Korean modal disjunction marker *-nka* and put forward an analysis using the notion of non-veridical equilibrium (Giannakidou 1998; Giannakidou 2013; Giannakidou & Mari 2018; Giannakidou & Mari 2021). However, the distributon of *-nka* is notably different

from pseudo-negation and Kang and Yoon's analysis does not predict the empirical picture of pseudo-negation.

▲ This intuition regarding the modal nature of disjunction will be a key part of our analysis

6. Introducing InqU

▲ Inquisitive Semantics (Ciardelli, Groenendijk & Roelofsen 2013; Ciardelli, Groenendijk & Roelofsen 2018) regards sentences not as flat propositions, but rather as sets of possible ways to enhance the common ground. Therefore, instead of sets of worlds we are dealing with sets of sets of worlds, or sets of alternatives. Such an approach successfully captures not only the informative, but also the inquisitive meaning of the utterance.

Here we will be working with a version of Inquisitive Semantics that aims to capture the attentive content of a proposition (Ciardelli, Groenendijk & Roelofsen 2009; Ciardelli, Groenendijk & Roelofsen 2014). The authors label it as Unrestrictive Inquisitive Semantics (InqU).

▲ Let us assemble the toolkit piece-by-piece. Each particular way to enhance the common ground will be labelled as a *possibility*

(37) **Possibilities**
a. A possibility s is a set of possible worlds, i.e., $s \subseteq \omega$.
b. A proper possibility is a non-empty set of possible worlds.
c. For any sentence ϕ, $\Pi(\phi)$ will denote the set of proper possibilities for ϕ

▲ Propositions are able to both to resolve issues and define the paths to further enhance the common ground, so they are also modeled as *sets of possibilities*. The informative content of each proposition can be modeled as a join of its possibilities.

(38) **Propositions**
A proposition *P* is a non-empty set of possibilities.
The set of all propositions will be denoted by *P*

(39) **Informative content**
For any proposition *P*, *info*(P) := $\bigcup[P]$
A proposition *P* is true in a world *w* just in case $w \in info(P)$

▲ Since proposing to enhance the common ground with an empty set of worlds would lead to inconsistency, we also specifically define *proper possibilities*.

(40) **Proper possibilities**
a. A proper possibility is a non-empty set of possible worlds.
b. For any sentence ϕ, $\Pi(\phi)$ will denote the set of proper possibilities for ϕ

▲ When we aim to capture to inquisitive and informative content, we are interested in the maximal elements of P, or the weakest elements that contain enough information to settle a previous question or raise a new one. Such maximal elements are called the *alternatives* in *I* or *P*.

(41) Alternatives.

The maximal elements of a proposition P are called the alternatives in P

ALT(P) = {$\alpha \in$ P | there is no $\beta \in$ P such that $\alpha \subset \beta$}

▲ An inquisitive proposition is the one that contains at least two alternatives. An informative proposition is the one that does not cover the whole logical space. Note that the two are not mutually-exclusive and some propositions, e.g. assertive disjunctions, can be both informative and inquisitive, see an illustration in Figure 1. Hereon after I will be using a logical model made up of four worlds to illustrate the proposals.

(42) Informative and inquisitive propositions

A proposition P is informative iff *info*(P) $\neq$ W.

A proposition P is inquisitive iff *info*(P) $\notin$ P

(a) +informative −inquisitive   (b) −informative +inquisitive   (c) +informative +inquisitive   (d) −informative −inquisitive
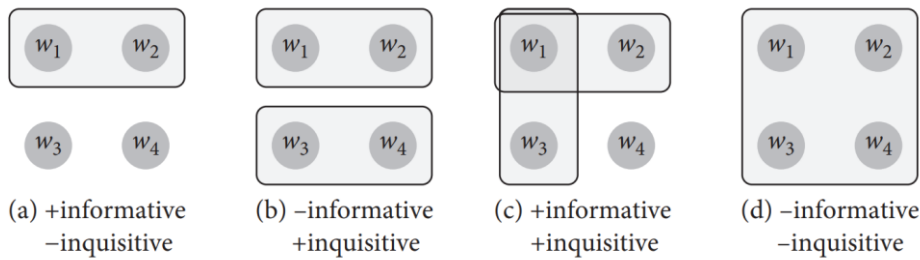
Figure 1.   A four-world logical space illustrating inquisitive and informative propositions (Ciardelli, Groenendijk & Roelofsen 2018)

(43) (a) Anna sneezed.
(b) Did Anna sneeze (or she didn't)?
(c) Anna sneezed or Khomahku sneezed? / Someone sneezed.
(d) Anna sneezed or she didn't.

▲ $|\varphi|$ — interpreted in 'flat' semantics
$[\varphi]$ — interpreted within Restricted Inq, no attentive content
$[\![\varphi]\!]$ — interpreted within InqU

(44) Logical operations in InqU

a. $[\![\varphi]\!] := |\varphi|$

b. $[\![\neg\varphi]\!] := \overline{\bigcup[\varphi]}$

c. $[\![\varphi \wedge \psi]\!] :=$ PRO$\{\alpha \cap \beta: \alpha \in [\varphi]$ and $\beta \in [\psi]\}$ PRO selects proper propositions

d. $[\![\varphi \vee \psi]\!] :=$ PRO$([\varphi] \cup [\psi])$

Some notes on the architecture of pseudo-negation

▲ I take it as a given that the NegP is located in the immediate projection below TP. I assume that the polarity head Pol has two features: [±neg, ±pos].

A [+neg] feature is spelled-out as a negative verb *ni-* (NEG).

■ The [-neg, +pos] combination is an affirmative sentence.
■ The [+neg, -pos] combination is interpreted as regular negation with the linear order NEG V-CNG.
■ The [+neg, +pos] combination is interpreted as pseudo-negation with the V-CNG NEG order.

I suppose that the different orderings can be derived by assuming that the head with one of the feature values has a uF^M probe, where F refers to any category and ^{M} indicates that the probe requires the goal to move in its specifier. Maybe ellipsis? Would greatly appreciate some advice!

In short, here are the semantics I propose for the Pol heads.

(45) a. Pol[+neg, -pos] = $\lambda P_{<st,t>}.\ \neg P = \overline{\bigcup[P]}$ NEGATIVE STATEMENT (flattened)

b. Pol[-neg, +pos] = $\lambda P_{<st,t>}.\ P$ AFFIRMATIVE STATEMENT

c. Pol[+neg, +pos] = $\lambda P_{<st,t>}.\ [P] \cup [\neg P]$ PSEUDO-NEGATION (without attention)

▲ If we only make use of the inquisitive and informative content of the proposition and regard pseudo-negation as $p \vee \neg p$ disjunction, it clearly does not make any truth-conditional contribution, see Figures 2-3 below.

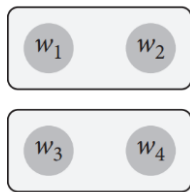(46) $!(P \vee \neg P) = \bigcup(\text{ALT}([P] \cup [\neg P])) = \top$

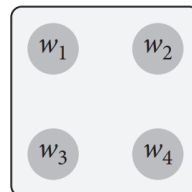*Figure 2.*   *Polar disjunction*   *Figure 3. Polar disjunction after a non-inquisitive closure[2]*

▲ Now, if pseudo-negation is both inquisitively and informatively vacuous, does it make any contribution to the discourse? I suggest that its contribution can be captured through the notion of *attention*. Consider the following passage from Giannakidou (2013) that captures the idea perfectly.

---

[2] For reasons of space, I will not discuss non-attentive !p and ?p closures in depth. In short, if our Inquisitive Semantics toolkit only aimed to capture the inquisitive and informative (but not attentive) content, the closures would be as in (i).

(i)   a. !P := $\bigcup[P]$
       b. ?P := ALT([P] $\cup$ [$\neg$P])

(47)   Ariadne might be a doctor.

(Giannakidou 2013): *"[…] a sentence ◇ϕ checks whether ϕ is compatible with the information state s of the speaker. If it is compatible, i.e. if s[ϕ] is not empty, the information state is left unchanged. If it is not compatible, the result is a defective information state, the empty set. In such an analysis, the existential modal is not just weak, it simply lacks truth conditional content; it only has dynamic content. In this analysis, then, ◇ϕ does not convey any information. So, here we have an assertive sentence that lacks informativity."*

▲ Under such an approach, existential epistemic modals are devoid of assertive content. However, they are not regarded as tautologies, since their contribution as modelled as highlighting the non-maximal possibilities in the proposition.

(48)   Attention
A proposition is attentive iff ⟦P⟧ contains a non-maximal possibility.

▲ Due to that InqU regards non-maximal possibilities as contentful, sentence that would be otherwise tautological contain attentive content in InqU. Let us construct an example in a logical space made up of four worlds.

The proposition P = {{w_1, w_3}, {w_1, w_2, w_3, w_4}}

-    not inquisitive
-    not informative
-    attentive
(P includes a non-maximal possibility Π(P) – [P] = {w1, w3})

▲ Under Ciardelli, Groenendijk & Roelofsen's account, epistemic possibility ◇ϕ does not provide any information, but it highlights the non-maximal possibility of *p* being true in a subset of the context set. Their semantics of epistemic possibility are given in (49). Figure 4 provides an illustration for attentive sentences including ◇ϕ.

(49)   ⟦◇ϕ⟧ = Π(ϕ) ∪ {ω}

(a) $◇p = ⊤ ∨ p$ (b) $p ∧ ◇q$ (c) $◇p ∨ ◇¬p$
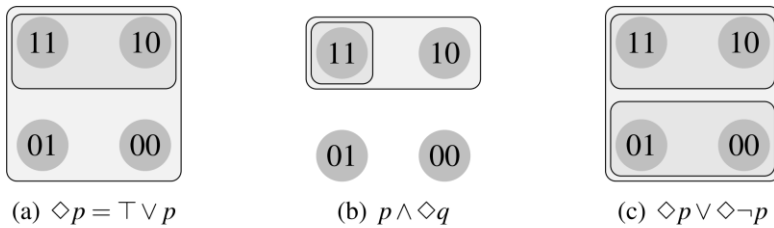
Figure 4.   Attentive sentences

▲ The attentive issue-cancelling (!) and info-cancelling (?) operators are defined in (51). Note that they preserve non-maximal states that stand for attention.

(50)   ?φ = φ ∨ ¬φ
        !φ = φ ∨ ¬¬φ

▲ Now, we can apply an attentive closure to pseudo-negation instead of a non-attentive one. The result is shown below.

(51) $[\![!(P \vee \neg P)]\!] = [\![\,P \vee \neg P \vee \neg\neg(P \vee \neg P)]\!] = \text{PRO}([P] \cup [\neg P] \cup \top)$
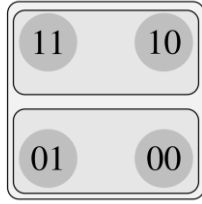

Figure 5.   Pseudo-negation after a non-inquisitive closure in InqU

▲ Now, pseudo-negation highlights the non-maximal possibilities of p being true and $\neg p$ being true, hence it is essentially equal to $\Diamond p \wedge \Diamond \neg p$.

7. A problem with the analysis

▲ Another way to express epistemic modality in Forest Nenets is by a conditional form -pˀ (COND), which also marks disjunctive clauses.

(52) wera-ŋ to-paʔaj   dʼatapta-n-ŋa-maʔ
      V.-GEN come-COND   meet-FUT-GFS-1PL
      'If Vera came, we will meet her'

(53) kińa-xama-m dʼata-ŋa-t   wera ŋæ-p-ta   ṕeta   ŋæ-p-ta
      who-SCAL-ACC meet-GFS-1SG V.   be-COND-POSS.3SG P.   be-COND-POSS.3SG
      'I met someone, it was Vera or Petya'

(54) wera-(*ŋ) to-p-ta   ŋaj   ńi-p-ta
      V.-(*GEN) come-COND-POSS.3SG ADD   NEG-COND-POSS.3SG
      'Did Vera come or not?'
      Consultant's commentary: 'you are not asking anyone, just thinking'

▲ Similarly to pseudo-negation, COND can be used in polar interrogative complements, see (55), and interrogative complements with wh-words, see (56). It can also be interpreted as an epistemic modal or even an optative.

(55) masa dʼaλḿi-ŋa   čuki dʼaλa-ŋ waša tuλ-mi   ŋæ-p-ta
      M.   be.ignorant-GFS this day-GEN V.   come-PT.PST be-COND-POSS.3SG
      ŋaj   ńiʔ-mi   ŋæ-p-ta   tuλ
      ADD   NEG-PT.PST be-COND-POSS.3SG   arrive.CNG
      'Masha doesn't know whether Vasya came today (or not)'

(56) mań xomańi-m ŋamt-ŋa-ta-š   kasa-ńu-dʼum kuńana   mæ-p-ta
      I   Kh.-ACC   ask-GFS-1SG-PST man-child-SEL where.LOC   be-COND-POSS.3SG
      'I asked Khomani where is her son'

(57) [I know that Vera lives in a red house and I see two red houses. I point to one of them:]
      čukixana   dʼiλʼi-p-ta
      here.LOC   live-COND-POSS.3SG.SG

'Maybe, she lives here' (Glavatskih 2023)

(58) d'a-m   ta-pna-nt
    flour-ACC   bring-COND-OBL.POSS.2SG
    'You bring flour, then'

▲ So far, the data about COND seem to support my idea that Forest Nenets has a robust disjunction-to-epistemics grammaticalization path or a semantic shift pattern. However, consider a following contrast.

(59) a. ṕet'a četaŋ końu-pa-ta   ŋaj   mansλa-pna-n-ta
       P.   now   sleep-COND-POSS.3SG ADD   work-COND-GEN-POSS.3SG
       'Maybe Petya is sleeping now, maybe he is working'

    b. #ṕet'a četaŋ końu-ʔ   ńi   ŋaj   mansλa-ʔ   ńi
       P.   now   sleep-CNG NEG   ADD   work-CNG   NEG
       Intended: same as (59a)

▲ Pseudo-negation behaves like a necessity model. It is not yet clear whether the pattern in (59) shows that pseudo-negation is a necessity modal or the infelicity in (59b) is a result of a prosodic or pragmatic mismatch.

If we take the data in (59) it is, my contrast is more suited for conditionals than for the pseudo-negation. The strengthening that we get with pseudo-negation must be explained via some sort of pragmatic strengthening mechanism and those have not yet been applied to Inquisitive Semantics (as least as I am aware).

Recap

■ Pseudo-negation is in many respects similar to HighNeg questions (doesn't license NPIs, doesn't require an answer, has positive epistemic bias)

■ But a range of properties of pseudo-negation are hard to account for under the HighNeg approach, e.g. it can occur in embedded environments where it loses the epistemic modal meaning and it is also infelicitous in contexts of negative evidence

■ I've suggested that pseudo-negation can be analyzed as $p \lor \neg p$ disjunction and it's contribution is thus akin to modal possibility, as it highlights the p scenario as a possibility without narrowing down the context set.

■ I've also shown that preliminary empirical tests show that pseudo-negation is, in fact, a necessity modal. Further investigation is needed to confirm that the conjunction test for modal strength with pseudo-negation is not cancelled out by its prosodic properties.

8. Glosses

> — subject-object agreement;

ACC — accusative;

APPR —approximative;

AUD – auditive evidential;

CAR – caritive;

CVB — converb;

GEN — genitive;

GFS — General Finite Stem [Burkova 2022];

CONNEG – connegative;
DU – dual number;
EVID – indirect evidentiality;
FUT – future tense;
LOC – locative case;
NEG — negation;
PL — plural number;
POSS — possessive;

PST – past tense;
PT.IPFV – imperfective participle;
PT.PST – perfective participle;
REFL — reflexive conjugation;
SEL – selective marker;
SG — singular number;
SIM — similative.

9. References

- AnderBois, Scott. 2019. Chapter 3 Negation, Alternatives, and Negative Polar Questions in American English. In, 118–171. Leiden, The Netherlands: Brill. https://doi.org/10.1163/9789004378308_004.
- Buring, Daniel & Christine Gunlogson. 2000. Aren't positive and negative polar questions the same?
- Burkova, Svetlana. 2022. Nenets. In Marianne Bakró-Nagy, Johanna Laakso & Elena Skribnik (eds.), *The Oxford Guide to the Uralic Languages.* Oxford University Press.
- Ciardelli, Ivano, Jeroen Groenendijk & Floris Roelofsen. 2009. Attention!'Might'in inquisitive semantics. In *Semantics and linguistic theory*, 91–108.
- Ciardelli, Ivano, Jeroen Groenendijk & Floris Roelofsen. 2013. Inquisitive Semantics: A New Notion of Meaning. *Language and Linguistics Compass* 7(9). 459–476. https://doi.org/10.1111/lnc3.12037.
- Ciardelli, Ivano, Jeroen Groenendijk & Floris Roelofsen. 2014. Information, Issues, and Attention. In Daniel Gutzmann, Jan Köpping & Cécile Meier (eds.), *Approaches to Meaning*, 128–166. BRILL. https://doi.org/10.1163/9789004279377_007.
- Ciardelli, Ivano, Jeroen Groenendijk & Floris Roelofsen. 2018. *Inquisitive semantics.* Oxford University Press.
- Domaneschi, Filippo, Maribel Romero & Bettina Braun. 2017. Bias in polar questions: Evidence from English and German production experiments.
- Giannakidou, Anastasia. 1998. Polarity sensitivity as (non) veridical dependency. John Benjamins Publishing Company.
- Giannakidou, Anastasia. 2013. Inquisitive assertions and nonveridicality. *The dynamic, inquisitive, and visionary life of φ* 115–126.
- Giannakidou, Anastasia & Alda Mari. 2018. The semantic roots of positive polarity: epistemic modal verbs and adverbs in English, Greek and Italian. *Linguistics and Philosophy* 41(6). 623–664. https://doi.org/10.1007/s10988-018-9235-1.
- Giannakidou, Anastasia & Alda Mari. 2021. *Truth and Veridicality in Grammar and Thought: Mood, Modality, and Propositional Attitudes.* University of Chicago Press. https://doi.org/10.7208/chicago/9780226763484.001.0001.
- Glavatskih, Sofia. 2023. A bit on epistemic modality in Forest Nenets [Nemnogo o vyrajenii epistemicheskoj modalnosti v lesnom nenetskom jasyke]. Handout. Harampur village, ms.
- Gusev, Valentin. 2020. 'Razve on dorogi ne znaet': k grammatikalizacii ritoricheskih voprosov v severnosamodijskih yazykah [Doesn't he know the way: on grammaticalization of rhetorical questions in Northern Samoyedic languages]. *Acta Linguistica Petropolitana.* Федеральное государственное бюджетное учреждение науки «Институт … 3(XVI). 53–94.

- Kang, Arum & Suwon Yoon. 2020. From inquisitive disjunction to nonveridical equilibrium: Modalized questions in Korean. *Linguistics* 58(1). 207–244. https://doi.org/10.1515/ling-2019-0038.
- Larrivée, Pierre & Alda Mari. 2022. Interpreting high negation in Negative Interrogatives: the role of the Other. *Linguistics Vanguard* 8(s2). 219–226. https://doi.org/10.1515/lingvan-2020-0115.
- Miličević, Nataša. 2007. *On negation in yes-no questions in Serbo-Croatian.* UiL OTS Working Papers 2006. 29–47.
- Pisarenko, Denis. 2023. Indefinite pronouns in Forest Nenets [Neopredelyonnye mestoimeniya v lesnom neneckom yazyke]. Handout. Kharampur, ms.
- Potseluev, Vsevolod. 2023. Negation in Forest Nenets [Otritsanije v lesnom nentskom]. Handout. Harampur village, ms.
- Romero, Maribel & Chung-Hye Han. 2004. On Negative Yes/No Questions. *Linguistics and Philosophy* 27(5). 609–658. https://doi.org/10.1023/B:LING.0000033850.15705.94.
- Šimík, Radek. to appear. Polar question semantics and bias: Lessons from Slavic/Czech. In Berit Gehrke & Radek Šimík (eds.), *Topics in the semantics of Slavic languages*. Berlin: Language Science Press.
- Sudo, Yasutada. 2013. Biased polar questions in English and Japanese. In Daniel Gutzmann & Hans-Martin Gärtner (eds.), *Beyond Expressives: Explorations in Use-Conditional Meaning*, 275–295. BRILL. https://doi.org/10.1163/9789004183988_009.
- Todorović, Neda. 2024. What are we asking with a polar question in Serbian? *Journal of Slavic Linguistics* 32(3). 1–26. https://doi.org/10.1353/jsl.2024.a950580.
- Zimmermann, Thomas Ede. 2000. Free Choice Disjunction and Epistemic Possibility. *Natural Language Semantics* 8(4). 255–290. https://doi.org/10.1023/A:1011255819284.