# WHAT 'NOT' MIGHT MEAN.
# EXPLETIVE NEGATION IN ATTITUDE CONTEXTS

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**Abstract**: *This paper examines the syntax-semantics of expletive negation in Modern and Classical Greek, Latin, Spanish, French, Russian and Hebrew attitude complements. It shows that, contrary to what is standardly assumed, expletive negation is not necessarily licensed in Subjunctive complements. It is licensed by predicates allowing for more than one live doxastic alternative, it scopes above Tense, and it is in complementary distribution with epistemic modals. Based on novel data, I show that expletive negation is not semantically vacuous; I propose that it is a weak epistemic modal that marks the contextually provided ordered in terms of likelihood alternatives as equally likely.*

**Keywords**: *expletive negation, epistemic modals, attitude predicates, clausal complements*

## 1. Introduction

This paper examines the distribution and the meaning of Expletive Negation (hence EN) in sentential complements of attitude predicates[1]. EN refers to sentential negators and negative complementizers that do not reverse the polarity of a proposition and thus seem to be semantically vacuous (1).

(1) Temo   no   te   vaua   a   gustar   demasiado                    [Spanish]
    fear   EN   you  go.SBJ at   like     too-much
    'I am afraid in case/lest you're going to like it too much.' (Butt and Benjamin 2011)

The aim of this paper is to identify the necessary conditions under which EN is licensed and its semantic contribution. Section 2.1 examines the semantics of the predicates that license EN and shows that they all have existential force and select for complements of type <s,t>,t>, namely questions. Section 2.2 compares EN in Modern Greek (MG), Classical Greek (ClGr), Spanish, French, Latin, Hebrew and Russian clausal complements and shows that (i) EN is not licensed only in Subjunctive complements as has been assumed in the literature so far and (ii) that it not licensed in clauses with anaphoric tense by predicates

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[1] EN can be found in a wide array of environments: matrix (biased) questions, rhetorical questions, exclamatives, free relatives, degree comparatives, metalinguistic comparatives, *before*-clauses, *until* clauses, *unless*-clauses, *without*-adjuncts, conditionals. The possibility of providing a uniform account for all the environments that license EN is itself a question worth investigating, however, it lies beyond the scope of this paper.

with existential force (∃ or ¬∀). Section 3 provides some new evidence that EN is not semantically vacuous and proposes that EN has the meaning of a weak epistemic modal. Section 4 concludes this paper.

## 2. The distribution of EN

### 2.1. Predicates that license EN

EN is licensed in the complements of verbs denoting fear, hope, doubt, obstruction and interrogative complements (complements of rogative or negated veridical responsive predicates). For a long time the common property of predicates licensing EN was assumed to be negativity and/ or non-veridicality (Espinal 2000; Landau 2002; Wouden 1994). Yoon (2011) was the first to observe that negativity is not a necessary condition for EN-licensing since EN is grammatical in complements of Korean and Japanese *hope*, however, she draws a link between EN and non-veridicality. As I will show below, Classical and Modern Greek hope license EN too (Table 1) providing further evidence for dissociation between EN licensing and negativity, however, non-veridicality is not sufficient to explain the distribution of EN either. Based on existing semantic analyses of EN-selecting predicates, I will show that EN is licensed only by predicates that have existential force and select for complements of type <<s,t>,t>.

|  | MG | ClGr | Latin | Spanish | French | Hebrew | Russian |
|---|---|---|---|---|---|---|---|
| *fear*-complements | + | + | + | + | + |  | + |
| *hope*-complements | + | + | - | - | - |  | - |
| dubitatives | - | + | +* | + | +* |  | + |
| *hinder, resist, refuse, delay*** | - | + | +* | - | + | + | - |
| interrogative complements | + | + | + | - | - |  | - |

*EN is licensed on condition that the matrix predicate is negated.
**The negative verbs that license EN may vary across languages.

Table 1: EN Sentential Complements

### 2.1.1. Emotive Doxastics and Dubitatives

Emotive doxastics (*fear, hope*) is the first class of verbs that introduce EN. They are classified as such because of their hybrid nature: they present doxastic alternatives of an attitude holder like doxastics and they involve a preference component like desideratives/directives. Their hybrid nature is also reflected in epistemic modal licensing: emotive doxastics license possibility epistemics like doxastics but they do not license

necessity epistemics like subjunctive selecting predicates (Anand and Hacquard 2013 hence A&H 2013):

(2)    John fears that Mary is pregnant.
       Presupposes: John is not sure whether Mary is pregnant or not.
       Asserts: There is a world compatible with John's beliefs where Mary is pregnant. &
              John considers likely that Mary is pregnant. &
              Mary being pregnant is less desired than not being pregnant.

(3)    John hopes that Mary is pregnant.
       Presupposes: John is not sure whether Mary is pregnant or not.
       Asserts: There is a world compatible with John's beliefs where Mary is pregnant. &
              John considers likely where Mary is pregnant. &
              Mary being pregnant is more desired than not being pregnant.

This meaning of *fear* can be formally expressed as in (4) (based on A&H's (2013) semantic analysis):

(4)    $[\![$fears$_C$ that $\varphi]\!]^{c,w,S,g} =$

       $\lambda x$: $\varphi$-verifiers in S'$\neq\varnothing$ & $\varphi$-falsifiers in S'$\neq\varnothing$.          uncertainty condition
       If defined $=1$ iff

       $\exists w' \in S'$: $[\ [\![\varphi]\!]^{c.\ w',\ S',\ g} = 1] \wedge$                       doxastic assertion
       $\varphi$-verifiers$<_{DESa,w}$ $\varphi$-falsifiers                          preference assertion
       $\varphi$-verifiers$>_{LIKELYa,w}$ $\varphi$-falsifiers                         preference assertion[2]
       where S'$=$DOX$_{a,w}$ and

       $\varphi$-verifiers in S'$=\lambda$S''. S''$\subset$ S' & $\forall$S''' $\subset$ S'': $[\forall w'\in$S''': $[\ [\![\varphi]\!]^{\ c,w',S''',g}=1]] =$
       pow(S'$\cap$p)
       $\varphi$-falsifiers in S'$= \neg\varphi$-verifiers in S'

An emotive doxastic, therefore, introduces a bipartition of possible worlds into those that the embedded proposition $\varphi$ is true and those that $\varphi$ is false. It asserts that $\varphi$ can be true and that $\varphi$ is more likely to be true than false. Finally, verbs meaning fear and verbs meaning hope introduce a desirability scale where the embedded proposition being true is less or more desired respectively than being false (cf. (2) and (3) above).

The meaning of dubitatives is the same as the meaning of emotive doxastics but their preference component: they do not introduce a desirability scale but only a likelihood scale. This is exemplified in (5) and formalised in (6) below:

(5)    John doubts that Mary is pregnant.
       Presupposes: John is not sure whether Mary is pregnant or not.
       Asserts: John considers possible both that Mary is pregnant and that she is not. &
              John considers likely that Mary is not pregnant.

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[2] A&H (2013) propose the preference component of emotive doxastics consist only of the desirability ordering of $\varphi$-verifiers and -falsifiers. The addition of the likelihood scale is an iteration from their proposal.

(6) ⟦doubts$_C$ that $\varphi$⟧$^{c,w,S,g}$ =
$\lambda x$: $\varphi$-verifiers in S'$\neq\varnothing$ & $\varphi$-falsifiers in S'$\neq\varnothing$.                    uncertainty condition
If defined =1 iff
$\exists w' \in$ S': $[$ $[\varphi]^{c.\,w',\,S',\,g}$ = 1$]$ $\wedge$                    doxastic assertion
$\varphi$-verifiers$<_{\text{LIKELY}a,w}$ $\varphi$-falsifiers                    preference assertion
where S'=DOX$_{a,w}$ and
$\varphi$-verifiers in S'=$\lambda$S''. S''$\subset$ S' & $\forall$S''' $\subset$ S'': $[\forall w'\in$S''': $[$ $⟦\varphi⟧$ $^{c,w',S''',g}$=1]]$ = pow(S'$\cap$p)
$\varphi$-falsifiers in S'= $\neg\varphi$-verifiers in S'

## 2.1.2.   *Interrogative Predicates*

Veridical responsive predicates (e.g. *know, remember, tell, forget, be aware*) select for questions or declarative complements. They are implicatives with a *that*-complement, whereas with *whether* they are not:

(7)   O Janis    thimate      pos/ an/ *mi-pos  itan I  Maria pu    eklise tin porta. [MG]
the John   remembers  that  if   EN-that   was  the Maria that   closed the door.
John remembers that/ whether/ *lest Mary shut the door

(8)   John knows that Mary closed the door.
Presupposition: Mary closed the door.
Assertion: John believes that Mary closed the door.

(9)   John knows whether Mary closed the door.
Assertion: John knows the correct answer to 'Did Mary close the door?'

They can also select EN complements if they are negated (10).

(10) Dhen thimate      pos/ an/ mi-pos  I   Maria eklise tin porta.    [MG]
NEG remember   that  if   EN-that the Maria  closed the door
(S)he does not remember that/if/whether Mary shut the door.

(11) a. ⟦know   that  $p$⟧$^w$= $\lambda Q.\in D_{<st,t>}$: $\exists p\in Q[p(w)$ =1]] $\wedge$ $\lambda x.\forall p$ $\in$ Q[p(w) =1 $\rightarrow$ DOX$_{x,w}\subseteq p$].
b. ⟦know whether $p$⟧$^w$= $\lambda Q.\in D_{<st,t>}$: $\lambda x.\forall p \in$ Q[p(w) =1 $\rightarrow$ DOX$_{x,w}\subseteq p$].
(based on Uegaki's (2012) semantic analysis of *know*)

In (11) D$_{<st,t>}$ is the domain of sets of propositions, Q a question (set of propositions) and *p* is a proposition.

Rogative predicates (e.g. *ask, wonder, investigate, examine*) select for questions or EN complements but not *that*-complements:

(12) Rotisa       ean/ mi-pos/ *pos/ *na hriazosun      tipota.        [MG]
Asked.1SG if/   EN-that/that/ SBJ  needed.2SG   anything
I asked whether you needed anything.

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As Uegaki (2012) argues both veridical responsive and rogative predicates select for questions ($<< s, t >, t >$). As he shows, the difference between the two lies in that rogative predicates carry a "non triviality presupposition" defined as (13) which triggers the incompatibility of a rogative predicate with a *that*-complement:

(13)  $⟦wonder⟧^w$: (Q)(x) is defined iff x can believe both of the following:
     a.  $\lambda w. \exists p \in Q[p(w)=1]$. In prose, there is a true proposition in Q.
     b.  $\lambda w. \exists p \in Q[p(w)=0]$. In prose, there is a false proposition in Q. (Uegaki 2012)

The non-triviality presupposition of rogative predicates is actually the same with the uncertainty condition defined by A&H (2013) for dubitatives and emotive doxastics.

The properties of the predicates discussed are summarized in Table 2.

| | Presupposition | Modal Force | Selected Complements | Scalar Assertion |
|---|---|---|---|---|
| **Proposition Selecting Predicates** e.g. *believe* | | $\forall$ | $<s,t>$ sets of propositions | No |
| **Responsive Predicates** e.g. *know* | | $\forall$ | $<<s,t>,t>$ functions from sets of propositions to truth values | No |
| **Rogative Predicates** e.g. *ask* | non-triviality presupposition (=uncertainty condition) | $\exists$ | | No |
| **Emotive Doxastics** e.g. *fear, hope* **Dubitatives** e.g. *doubt* | | | | Yes ($>_{DES}$ or $<_{DES}$), $>_{LIKELY}$ |
| **Negative Predicates** e.g. *refuse* | | | | Yes $<_{LIKELY}$ |
| **Desideratives** e.g. *want* | | | $<t>$ propositions | Yes ($>_{DES}$) |

Table 2: The semantics of predicate classes without EN.

## 2.2. Tense and mood properties of sentential complements with EN

### 2.2.1.   EN and Mood

So far, EN has been assumed to be licensed only in Subjunctive complements (Abels 2002, 2005; Yoon 2012). However, if we look into a bigger set of languages (Table 3

below), it is clear that EN is not licensed solely in Subjunctive complements: it can also be licensed in clausal complements with Indicative, Optative or Infinitival complements.

If EN can be licensed in non-subjunctive complements, the question that arises is why EN is ungrammatical in (14-b). Note that non-veridicality cannot explain the distribution of EN in this case either: both (14-a) and (14-b) are non-veridical:

(14) [French]

    a. Je crains qu' il ne vienne.
       I fear that he EN come.SBJ.
       'I fear that he might come.'

    b. Je crains d'(*n<e>) apprendre une mauvaise nouvelle.
       I fear.1SG of EN learn.INF one bad news.
       I fear hearing some bad news.

|  | Emotive Doxastics | Dubitatives | Interrogatives | Negative Predicates |
|---|---|---|---|---|
| **Modern Greek** | Indicative Subjunctive | | Indicative | |
| **Classical Greek** | Indicative Subjunctive Optative Infinitive | Subjunctive Optative Infinitive | Indicative Subjunctive | Indicative Subjunctive Optative Infinitive |
| **Latin** | Subjunctive | Subjunctive | Subjunctive | Subjunctive |
| **French** | Subjunctive | Subjunctive | | Subjunctive |
| **Spanish** | Subjunctive | | | |
| **Hebrew** | | | | Infinitive |
| **Russian** | Subjunctive Infintive | Subjunctive | | |

Table 3: Mood distribution in EN complements

To sum up, there are two puzzles to explain regarding the distribution of EN. The first one refers to its crosslinguistic distribution, especially in infinitival complements: EN is grammatical with Classical Greek, Russian and Hebrew infinitives but not French or Spanish ones. (cf. Table 3). The second one is the distribution of EN within a language, e.g. French. If Subjunctive is not a condition for licensing EN the difference between Subjunctive and Infinitival complements remains unexplained.

### 2.2.2. EN is licensed in CPs with non-anaphoric Tense

In this section, I show that the dependency between EN and Subjunctive is actually an epiphenomenon of the fact that EN is not licensed in sentences with anaphoric tense. Semantic Tense of a clause can be (Iatridou 1988; Landau 2004 a.o. cf. Picallo 1984):
**Independent** or **free:** The embedded Tense can have any Tense specification, e.g. indicative clauses. In these clauses morphological tense corresponds to semantic tense.

**Dependent:** The embedded Tense alternations are constrained by the matrix predicate, e.g. some of the Balkan subjunctives. In these clauses morphological tense alternations reflect aspectual alternations.

**Anaphoric** or **empty**: The event of the embedded clause is not distinct from the event of the matrix predicate. In these clauses the morphological Tense of the embedded predicate is always [-Pst]. The absence of tense morphology in those sentences is due to the absence of a T(ense) projection in the embedded clause (Grano 2012).

In this study three criteria have been used for characterising the Tense of the embedded CPs:

1.  The availability of a matrix and an embedded temporal adverb with distinct reference:

(15) **Včera**     oni bojalis' kak by     im   **zavtra**  ne opzdat'          na poezd.
Yesterday they feared   how MOD them tomorrow NEG be.late.**INF**.PERF. on train.
'Yesterday they feared that they might miss the train.' (N. Radkevic p.c.)

2.  Licensing of an overt embedded subject:

(16) Ha-bikus       ha-acun mana       me-ha-mexirim laredet.
the-demand  the-huge  prevented from.C-**the-prices** to-fall.**INF**
'The huse demand prevented the prices from falling.'[3] (Landau 2002:469)

3.  Availability of morphological tense alternations[4]:

(17) [ClGr]
a. apistountes                   auton   me: he:ksein
disbelieve.PRS.PCPL.PL.ACC him.PR EN   come.**FUT.INF**
'disbelieving that he might come'       *Thuc.* 2.101
b. an tis …            apistoie: me: genesthai             ton   stolon tosouton  hoson
if  somebody disbelieve EN   be.**PST.PFV.INF.** the   navy  so.big       as
hoi poie:tai eire:kasi
the poets     have.told.PRS.PRF
'if somebody disbelieve that the navy was as big as the poets have said' *Thuc*. 1.10

Table 4 below, summarizes the tense properties of EN complements according to the aforementioned criteria. It is evident that EN is not licensed in sentences with anaphoric tense or, in other words, it is not licensed in complements that lack a Tense projection. This

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[3] The reader is referred to Landau's (2002) paper for diagnostics that show that *me* 'from' in (16) is not a preposition but a complementizer and that the DP following *me* 'from' is the subject of the infinitive.
[4] The availability of morphological tense alternations is a sufficient but not necessary condition for characterizing tense as free or dependent (non-anaphoric).

indicates that EN selects a TP and scopes above Tense, otherwise it would also be grammatical in clauses with anaphoric tense, namely clausal complements lacking a T-layer.

| | Emotive Doxastics | Dubitatives | Interrogatives | Negative Predicates |
|---|---|---|---|---|
| **Modern Greek** | Free | | Free | |
| **Classical Greek** | Free Dependent | Free | Free Dependent | Free |
| **Latin** | Dependent | Dependent | Dependent | Dependent |
| **French** | Dependent | Dependent | | Dependent |
| **Spanish** | Dependent | | | |
| **Hebrew** | | | | Free |
| **Russian** | Free | Free | | |

Table 4: Tense of EN complements

This link between EN and T can capture the strong correlation between EN and Subjunctive, while it explains why EN is compatible with Classical Greek, Russian and Hebrew infinitives but not Spanish or French ones.

To return to our French example, *craindre* ('fear') may select for Subjunctive or Infinitival complements. French Subjunctive complements are used in obviative environments and inflect for Tense in contrast to the obligatorily controlled infinitival complements. If we assume that EN is ungrammatical in sentential complements with anaphoric tense, as French infinitival complements are, then it follows that EN can only be licensed in the Subjunctive complements *craindre* ('fear') selects. We can dispense, therefore, with the condition for Subjunctive. On the other hand, Classical Greek, Hebrew and Russian infinitives have a T-projection and that is the reason why they are compatible with EN.

| | ClGr | Hebrew | Russian | Latin | French | Spanish |
|---|---|---|---|---|---|---|
| **Does the language have infinitival Cs?** | Yes | Yes | Yes | No | No | No |
| **Is the EN infinitive introduce by an overt C?** | No | Yes | Yes | N/A | N/A | N/A |
| **Categorial Status of EN infinitival clauses** | CP | CP | CP | N/A | N/A | N/A |
| **Categorial Status of infinitival clauses** | CP | TP | TP | CP/VP | CP | CP |
| **Can the infinitives license their own subject** | Yes | Yes | Yes | (Yes) | No | No |
| **Can the infinitves have their own tense domain?** | Yes | Yes | Yes | (Yes) | No | No |

Table 5: Comparative table of Infinitival complements

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## 3.  The meaning of EN

In this section, I demonstrate that EN is not semantically vacuous and I propose that EN is an epistemic modal[5] that marks the lack of evidence on the part of the attitude holder about the probability of the different alternatives, rendering them to equally probable.

### 3.1. Asymmetries between Declarative and EN-complements

### 3.1.1.  Epistemic modals are not licensed in EN-complements

Expletive Negation is in complementary distribution with epistemic modals. This is illustrated in the minimal pair in (18) below:

(18) a.  Fovame pos mpori na fighun ta pdhia simera.
         Fear.1SG that might SBJ leave the children today
         'I fear that children might leave today.'
     b.  *Fovame mi-pos mpori na   fighun  ta   pedhia    simera.
          Fear   EN-that might SBJ leave   the  children  today
          'I fear that children might leave.'

### 3.1.2.  Answering Questions: No doxastic assertion in EN-complements

In §2.1.1 I followed A&H (2013) who suggested that in a sentence like [α *fears that φ*] there is an assertion that in some of the doxastic worlds of the attitude holder φ is true. The felicity of a sentence as an answer to a question can function as a diagnostic whether an emotive doxastic introduces a doxastic assertion (19). An emotive doxastic with a *that*-complement is a felicitous answer while with a complement containing EN it is not:

(19) — Erhete       o Nikos? — Fovame        pos/ #mi-pos  erhete.
         come.3SG    the N.      Fear.1SG      that EN-that  come.3SG.
     — Is Nikos coming?       — fear.1SG that he is coming.

This indicates that the clause with EN does not have a doxastic assertion as the one with the *that*-complement does. Additionally, the answer with EN does not seem to make any statement about the likelihood of Nikos's coming. Both possibilities (φ and ¬φ) are equally likely. The meaning of a sentence with EN is illustrated in (20) below:

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[5] The semantic contribution as well as the syntactic position of EN could also indicate that EN is an evidential marker. In this paper, I adopt Matthewson's (2012) thesis that all evidentials contribute epistemic modal semantics, and all epistemic modals contribute evidential semantics. I leave to future research an investigation of whether a finer distinction between epistemic modals and evidentials is necessary to account for the whole array of EN constructions.

(20) $[\![\text{fears}_C \text{ EN-that } \varphi ]\!]^{c,w,S,g} =$

  $\lambda x$: $\varphi$-verifiers in S'$\neq\varnothing$ & $\varphi$-falsifiers in S'$\neq\varnothing$.     uncertainty condition

  If defined $=1$ iff

  $\varphi$-verifiers$<_{\text{DESa,w}}$ $\varphi$-falsifiers       preference assertion

  **$\varphi$-verifiers$\geq_{\text{LIKELYa,w}}$ $\varphi$-falsifiers**       **preference assertion**

  where S'$=\text{DOX}_{\text{a,w}}$ and

  $\varphi$-verifiers   in   S'$=\lambda$S''.S''$\subset$S'&$\forall$S'''$\subset$S'':[$\forall$w'$\in$S''':[ $[\![\varphi]\!]^{c,w',S''',g}=1$]]   $=$ pow(S'$\cap$p)

  $\varphi$-falsifiers in S'$= \neg\varphi$-verifiers in S'

The sentence with EN, therefore, is infelicitous because it is less informative than the sentence without it; it triggers a scalar implicature that the embedded proposition being true is equally likely to being false (21):

(21) Scalar Implicature of EN:

  $\varphi$-verifiers $=_{\text{Prob}_{xw}}$ $\varphi$-falsifiers.

### 3.1.3. Scope of matrix negation

Another piece of evidence that EN is not semantically vacuous comes from the scope of matrix negation in sentences with emotive doxastics. Matrix negation can scope over the doxastic component of the emotive doxastic regardless the sentence contains EN or not (22-a). However, it can scope over the desirability scale only if the embedded clause has EN (22-b):

(22) a. Dhen fovame ✓pos/ ✓mi-pos kseri tin alithia. Ime sighuros pos ehi mavra
   NEG fear.1SG that/ EN-that know the truth. am sure that has black
   mesanihta.
   midnight.
   'I do not fear that/ whether he knows the truth. I am sure he is totally ignorant.'
  b. Dhen fovame #pos/ ✓mi-pos kseri tin alithia. Vasika to elpizo kiolas.
   NEG fear that/ EN-that knows the truth basically it.CL hope even
   'I do not fear that he might know the truth. In fact, I even hope it.'

This asymmetry is actually predicted if we adopt the proposal that EN acts on the probability scale introduced by the emotive doxastic. In the non-EN cases, matrix negation actually acts on the probability assertion of the matrix predicate and reverses the ordering of the alternatives. In the EN sentences, (21) may be inferred. In that case the matrix negation can target the second preference assertion and reverse the desirability ordering.

Table 6 below summarizes the properties of the predicates with complements with EN.

|  | Presupposition | Modal Force | Selected Complements | Scalar Assertion |
|---|---|---|---|---|
| **Responsive Predicates** e.g. *know* |  | ¬∀ | $<<s,t>,t>$ functions from sets of propositions to truth values | No |
| **Rogative Predicates** e.g. *ask* | non-triviality presupposition (=uncertainty condition) | ∃ | | No |
| **Emotive Doxastics** e.g. *fear*, *hope* **Dubitatives** e.g. *doubt* | | | | Yes ($>_{DES}$ or $<_{DES}$), $\geq_{LIKELY}$ |
| **Negative Predicates** e.g. *refuse* | | | | Yes $\leq_{LIKELY}$ |

Table 6: The semantics of predicates selecting EN

## 3.2. Extensions: Greek Counterfactuals and Root Questions

### 3.2.1. Greek Conditionals

In §3.1 I proposed that EN acts on a contextually available likelihood scale and asserts that according to the attitude holder the embedded proposition being true is equally likely as it being false. Further evidence about the status of EN as an epistemic modal comes from another environment, namely counterfactuals.

Iatridou (2000 fn.4) points that a future morpheme (or *might*) is necessary in the consequent of a counterfactual in many (but not all) languages. On the other hand, Roussou (2000), while discussing the structural position and meaning of *tha* ('will' MG) points out that *tha* (will) is not a Tense particle but a modal as it has an exclusively epistemic reading if combined with a [+Past,+Perf] predicate and it forms a counterfactual if combined with a [+Past,-Perf] predicate. So taking into account Roussou's proposal we can revise Iatridou's observation and state that an epistemic modal (*will* or *might*) is necessary to form Greek (and English) counterfactuals. If the proposal that EN is an epistemic modal is correct, then we expect EN to be licensed in the consequent of counterfactuals. Indeed, this prediction is borne out:

(23) An epine     afto to   siropi mi-pos   ghinotan   kala.
     If drank.Pst.Imp. that the   syrup, NEG-that be.Pst.Imp   well
     'If he had drank that syrup s/he might recover.'

Notice that (23) conveys that recovering would be possible if the subject had drunk that syrup. The minimally different (24) indicates that in all the worlds that the subject drank the syrup they recover:

(24) An epine          afto to siropi tha ghinotan     kala.
      If drank.Pst.Imp. that the syrup, will be.Pst.Imp well
      'If he had drank that syrup s/he would recover.'

The same effect is also found in other types of conditionals:

(25) An pji            afto to   siropi tha/ mi-pos ghini       kala.
      If drink.Prs.Pfv. that the   syrup, will/ EN-that be.Prs.Pfv well
      With *tha:* 'If he drinks that syrup s/he will recover.'
      With EN: 'If he drinks that syrup, s/he might recover.'

### 3.2.2.     Greek Biased Questions (Roussou 2015)

Roussou (2015) extends the analysis of EN as an epistemic modal put forward in this paper to another environment that licenses EN, namely root questions. She argues that expletive *mi-pos* (NEG-*that*) in Greek is a discourse modal particle. It is licensed in clausal complements and matrix questions because both contexts provide an alternative set of possible worlds. She shows that *mipos* contributes an epistemic modality reading in root questions as demonstrated in this paper for clausal complements, and she argues that *mi-pos* (EN-that) in root questions provides the speaker's view ('*I wonder*') on the speech event in relation to epistemic modality.

## 4.     Summary and Conclusions

In this paper, I examined the distribution and semantic contribution of EN in complements of attitude predicates. Through a comparison of Modern Greek, Classical Greek, Spanish, French, Latin, Russian and Hebrew sentential complements with EN I showed that EN does not correlate with mood but with Tense and that it scopes above T. I also examined the predicates that license EN and I showed that what they have in common is that they allow for a set of more than one live doxastic possibility. Through this cross-linguistic comparison I put forward two necessary conditions for EN licensing in attitude complements: the attitude predicate must select for a clause with non-anaphoric tense and it must assert or presuppose that there is a bipartition of the doxastic alternatives of the epistemic subject. This proposal significantly restricts the environments EN is licensed, even though it does not identify what are the sufficient conditions for EN licensing.

Therefore, it explains why EN is ungrammatical in French and Spanish infinitives; however, it cannot shed light on why EN is ungrammatical in attitude complements of other languages like Italian or English.

As far as the meaning of EN is concerned I demonstrated through asymmetries with other minimally different declarative complements that EN is not semantically vacuous and I proposed that it denotes the attitude holder's lack of evidence regarding the probability of the different alternatives, rendering them equally likely. In light of this analysis, EN acts as a weak epistemic modal. This analysis is supported by the fact that EN scopes above Tense (it is well established that epistemic modals also scope above Tense (Abusch 1997; Cinque 1999; Hacquard 2006; Iatridou 1990; Picallo 1990; Stowell 2004)), its complementary distribution with other epistemic modals, its incompatibility with predicates that do not

allow for more than one doxastic possibility like *believe*, its infelicity in answers and its interaction with matrix negation. I also showed how this analysis can be extended to other EN licensing environments like conditionals and matrix questions.

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