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Basic negation as highest negation

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1. Introduction

For decades, the study of negation has been conducted in a formal, truth-conditional framework, perpetuating a centuries-old tradition (Horn 2001, Horn & Wansing 2025). In this framework, the meaning of a simple sentence is represented as a propositional variable (p), which stands for a proposition; in propositional logic, truth-functional negation (¬) converts a true proposition into a false one, and vice versa. And the truth-functional negation of a negated proposition is a true proposition:

(1) a. ¬p true iff p false; ¬p false iff p true
b. ¬ ¬p > p

Such observations situate negation in thought, specifically as pertaining to the relation between an individual's thought and the world. The implications for negation as a linguistic phenomenon are connected to the more general theoretical supposition that language is a "system for expressing thought" (Chomsky 2002: 76), specifically the thought of an individual who possesses the language faculty.

Opposed to this standpoint is the functional-communicative view (Fedorenko, Piantadosi & Gibson 2024), in which the spotlight is not on the single individual but on minimally a dyad of interacting language users who wield their linguistic competence as a dynamic tool that they deploy strategically to exert influence on one another within the framework of dialogic communication. This view underlies Dik's (1997a: 8) model of verbal interaction (Figure 1 below), which in turn provides the overall framework for Functional Discourse Grammar (FDG; Hengeveld & Mackenzie 2008). The model shows how the interactants, a Speaker and an Addressee, each have 'pragmatic information' at their disposal, defined as the totality of knowledge, beliefs, preconceptions, feelings, etc. that together constitute the mind of each interactant at the moment of interaction, modelled as P_S and P_A respectively. The Speaker forms an intention to enter into linguistic communication in an attempt to bridge the gap between her mind and that of her Addressee, exploiting their shared linguistic competence and awareness of their situation and anticipating the Addressee's attempt to interpret her words. To this end, the Speaker performs a Discourse Act, formulating and encoding her ideas in such a way that the resultant utterance (or 'linguistic expression') has a reasonable chance of effecting the desired change in P_A, the pragmatic information of the Addressee. The latter, in decoding the linguistic expression, then attempts to reconstruct what he takes to be the communicative intention of the Speaker. The Addressee trusts the latter, who has anticipated the Addressee's interpretive work, to have formulated and encoded their message in a manner that is honest, relevant and accessible (Grice 1967). This then leads the Addressee to adjust his P_A to take note of what he has reconstructed as the Speaker's intention.

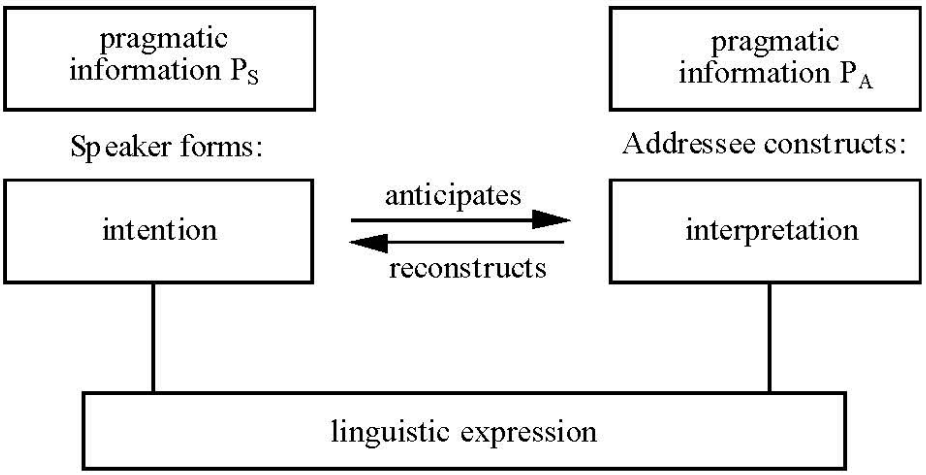

Figure 1: Dik's (1997a: 8) model of verbal interaction

The essential point of the functional-communicative view sketched here is that the linguistic expression is not a direct wording of the Speaker's thought ready to be unpacked by the Addressee but rather is strategically deployed with a view to stimulating the Addressee's interpretive abilities. This view of verbal interaction is close to Zwaan's (2004: 36) embodied approach in which "language is a set of cues [sent by the language producer, JLM] to the comprehender to construct an experiential (perception plus action) simulation of the described situation". Again, 'language' is not seen as a direct reflection of thought, but as providing 'cues' used by the addressee/comprehender to perform cognitive work, the construction of a simulation of the situation described by the speaker's words. What Zwaan adds to the Dikkian model is the notion that the comprehender vicariously experiences the situation depicted by the speaker. This furthermore aligns with Dor's (2017) notion of the speaker instructing the hearer's imagination when he enjoins us to "re-think language as a social entity, a communication technology, that resides between speakers, not simply in them; language is the only system that actually bridges the experiential gap, allowing interlocutors to imagine, within their own experiential worlds, experiences that could not be shared by the speakers".

What is common to the approaches reviewed here, then, is that the utterance is not a direct expression of thought, *pace* Chomsky, but rather a tool that stimulates the comprehender to reconstruct and to simulate or imagine what the speaker has in mind. This aligns with the insight fundamental to pragmatic approaches to language analysis that linguistic form underdetermines the richness of the experiences it represents. Zwaan (2004) cites examples such as those in (2):

(2) a. The ranger saw the eagle in the sky.
b. The ranger saw the eagle in the nest.

in which the comprehender will use his experience of the world and his imagination to interpret (2a) as implying that the eagle was flying and (2b) as implying that the eagle was sitting still, despite the complete parallelism between the syntax of the two examples,

modelling the two situations in response to the cues *sky* and *nest* respectively. In Zwaan's words (2004: 38):

> [T]he basic assumption is reading or hearing a word activates experiential representations of words (lexical, grammatical, phonological, motoric, tactile) as well as associated experiential representations of their referents—motor, perceptual, and emotional representations, and often combinations of these […] . These traces can be activated by verbal input and as such enable the reconstitution of experience. In this sense, comprehension is the **vicarious experience** [my emphasis, JLM] of the described events through the integration and sequencing of traces from actual experience cued by the linguistic input.

The embodied cognition framework that elaborates the functional-communicative approach to linguistic interaction may be seen as the latest in a series of developments that have occurred over recent decades. As Kaup & Dudschig (2020: 635) have put it, "there was a general shift from propositional accounts of meaning representation to situation-model or mental-model theory (in the 1980s; e.g. Van Dijk and Kintsch 1983; Johnson-Laird 1983 [in which propositions were maintained], JLM) and then to the experiential simulations view of comprehension that was proposed in the context of the embodied cognition framework (e.g. Barsalou 1999; Zwaan & Madden 2005)".

How is negation to be understood in this framework and how can this be operationalized in FDG? Tian & Breheny (2016) provide psycho- and neurolinguistic evidence within the embodied cognition framework that negation occurs when the speaker, prior to communication, entertains two mutually incompatible simulations of reality. Let us consider a situation on a day with changeable weather in which a speaker wishes to communicate that the weather is currently dry (see Simulation 2 in (3)):

(3)

Simulation 1 Simulation 2

She first activates Simulation 1 because it aligns with what she has been presupposing or expects to be the case in the given interactive context and/or because it corresponds to what her interlocutor has previously told her, e.g. by saying, on the phone, *I heard it's raining with you*, or has asked her, e.g. by inquiring, when unable to see out the window, *Is it raining?* (cf. also Givón 2018: 100-102, the treatment in terms of 'mental spaces' in Verhagen 2005: 29-

30, and Bond 2012: 29-30's notion of an 'alternate' or 'counterfactual' reality). She then also entertains Simulation 2 because it corresponds to her own current perceptions or deductions.

In the FDG model, this can be operationalized by having the Conceptual Component, which logically precedes the Grammatical Component and triggers its operations, build a preverbal Message that takes account of the two rivalling simulations. Then, in the Grammatical Component, a formulation will be selected that reflects this double simulation in a manner that is likely to trigger appropriate comprehension and interpretation on the part of the addressee. The speaker's formulation – captured at the Interpersonal and Representational Levels of the grammar – will incorporate two elements: content corresponding to the simulation-to-be-denied, and an explicit indication of that denial. In FDG this will take the form of the application of a Neg(ative) operator (or equivalent) to a formulation strategy that without the operator would correspond more closely to Simulation 1.

2. Six negation strategies; hypotheses

It is generally agreed that there is no language without negation (Bond 2012: 25). Negating is a fundamental species-specific cognitive capacity that is manifested by infants well before they acquire the ability to speak fluently (Dimroth 2010, Cuccio 2011). The following developmental sequence is well established (cf. also Lyons 1977: 777): (a) refusal (e.g. of food or a plaything), possibly only gestural; (b) disappearance, non-existence, unfulfilled expectation (expressed as a one or two-word utterance); (c) full-fledged denial (based on a disparity between the child's and others' beliefs that betrays a 'theory of mind', and expressed in more complex utterances). Certainly by the third stage, the negative utterances are more complex than the corresponding affirmative ones, with complexity being manifested in additional morphosyntax. Miestamo (2005) refers to simple addition of a negative marker in adult syntax as 'symmetric negation', for example German *Ich weiß es* vs. *Ich weiß es nicht*, and where there are further structural differences he identifies 'asymmetric negation', as for example in the case of *do*-support in the semantically equivalent English *I know* vs. *I don't know*.

It has long been understood that there are various types of negation (De Clercq 2020). The classical distinction between sentence and constituent negation was implemented in early generative syntax (Klima 1964), and further syntactic distinctions have been drawn in such works as Zanuttini (1997)[1] and De Clercq (2013). A semantic approach is found in Lyons's (1977: 764-777) distinction of the neustic, the tropic and the phrastic, as respectively in [*I say* [*it is the case* [*that* …]]], and his claim that each of these can be independently negated, i.e. [*I do not say* [*it is the case* [*that* …]]], [*I say* [*it is not the case* [*that* …]]] and [*I say* [*it is the case* [*that … not …*]]]. This work had a major influence on Dik's

[1] Zanuttini's work is based on detailed inspection of Northern Italian dialects. She proposes four positions for the Negative Phrase (NegP) in syntax, which I believe can be brought into correspondence with the typology of negation proposed in FDG: (a) negation scoping over the Tense Phrase (TP) – equivalent to FDG (Neg ep_1); (b) negation scoping over adverbs such as *already* or *yet* – equivalent to FDG (Neg e_1); (c) negation scoping over perfective aspect – equivalent to FDG (Neg f_1); (d) negation equivalent to German *kein* – equivalent to FDG (Neg x_1).

Functional Grammar (1997b: Ch. 8), where distinctions are drawn among illocutionary negation, propositional negation, predicational negation (equivalent to Lyons's neustic, tropic and phrastic negation respectively), predicate negation (for cases like *unintelligent, non-playing* and *featherless*), and term negation, also known as zero quantification (as in *no books*, Dik 1997b: 169).

Hengeveld & Mackenzie (2018) consider whether similar distinctions apply at each of the multiple layers of Functional Discourse Grammar. They identify twelve positions at which the Neg operator (or an equivalent operator like Ant[onym]) can occur, 5 at the Interpersonal Level and 7 at the Representational Level, as summarized in Figure 2:

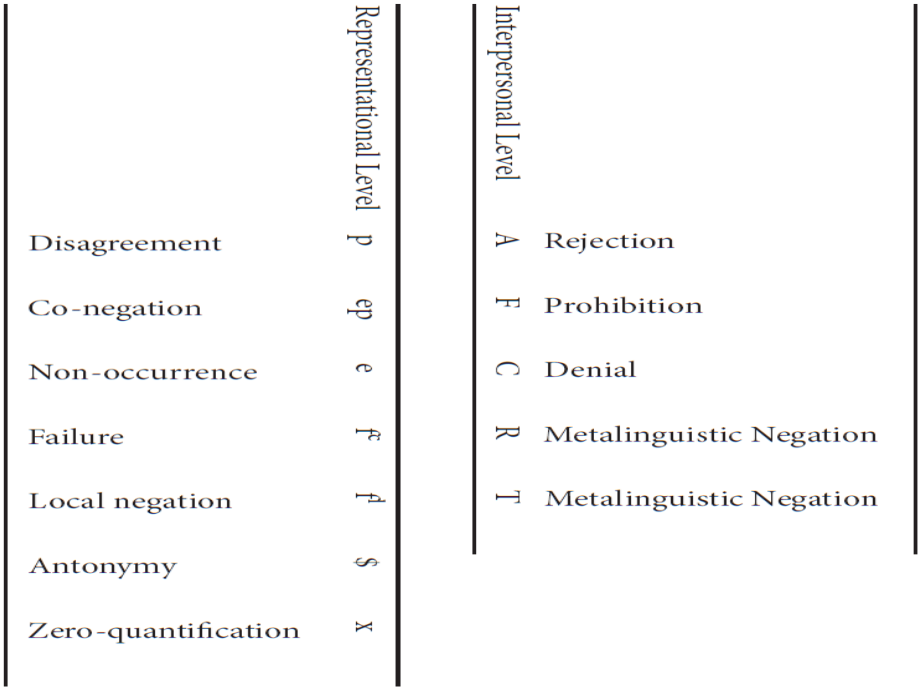

Figure 2. Twelve types of negation in Functional Discourse Grammar
(from Hengeveld & Mackenzie 2018: 43)

Many of these twelve types of negation[2] have special purposes, as for example the metalinguistic status of subact (R, T) negation, but six of them offer themselves for the communication of content corresponding to a simulation-to-be-denied with an explicit indication of that denial. I will refer to these as the six strategies (using the word 'strategy' in the sense of "a method for achieving something") because they represent six different ways of formulating one and the same message. Within the FDG formalism, they represent distinct pragmatic-semantic configurations but the speaker's experience and the experience they are liable to trigger in the comprehender, as outlined in Section 1, are ultimately identical. The distinctions made at the Interpersonal and Representational Levels are thus not reflections of different messages-to-be-communicated but tools in the service of the communication of experience.

The six strategies are shown in Table 1:

[2] The symbols in Figure 1 are interpreted, in line with standard practice in FDG, as follows. Interpersonal Level: A = Discourse Act; F = Illocution; C = Communicated Content; R = Referential Subact; T = Ascriptive Subact. Representational Level: p = Propositional Content; ep = Episode; e = State-of-Affairs; f^c = Configurational Property (in recent literature, 'Situational Property'); f^l = Lexical Property; $ = Lexical Primitive; x = Individual.

Table 1. Six types of negation in FDG

#	**Type of negation**	**Rough paraphrase**	**FDG analysis**
1	Denial	I (hereby) deny that it is raining	Illocutionary predicate DENY
			(F_I: DENY (F_I))
2	Non-truth	I affirm that it is not true that it is raining	Propositional negation
			(Neg p_1: […] (p_1))
3	Non-occurrence	I affirm that it is true that an event of raining is not taking place	Episode negation
			(Neg ep_1: […] (ep_1))
4	Non-event	I affirm that it is true that no event of raining is taking place	State-of-Affairs negation
			(Neg e_1: […] (e_1))
5	Negative configurational property	I affirm that it is true that an event of not raining is taking place	Configurational property negation
			(Neg f^c_1: […] (f^c_1))
6	Negative lexical property	I affirm that it is true that an event of non-raining is taking place	Lexical property negation
			(Neg f^l_1: […] (f^l_1))

Note that all the strategies at the Representational Level (#2-6) involve the operator Neg(ative). The one strategy at the Interpersonal Level (#1) involves an abstract predicate representing an illocutionary act of denial. These grammatical strategies are of course not exhaustive: the speaker can also have recourse to lexical strategies (*It's dry*) and to pragmatic strategies like irony (*Sure, it's raining!*).

Now, the assumption of this paper is that the user of a particular language will have a go-to strategy among these six, a default option. Let us call this strategy that language's 'basic negation'. This notion is close to 'standard negation' or 'canonical negation', as used in the literature. Payne writes (1985: 198): "By 'standard' negation we understand that type of negation that can apply to the most minimal and basic sentences. Such sentences are characteristically main clauses, and consist of a single predicate with as few noun phrases and adverbial modifiers as possible." Miestamo (2005) rather similarly characterizes 'standard negation' as a "productive and general" operation on clauses that are *verbal* (rather than, say, nominal), *declarative* (rather than any other illocution) and *main* (as opposed to subordinate or fragmentary). Bond (2012) develops a notion of 'canonical negation', enumerating 18 criteria (structural, semantic, and pragmatic), intended as independent of one another, that can determine whether a particular negative construction is canonical or not; no example satisfies all 18.

The notion of 'basic negation' presupposes that alongside their basic-negation strategy, languages may have other strategies that are employed in specific circumstances. In Dutch, for example, basic negation involves the insertion of the particle *niet*, as in (4b):

(4) a. *Ik* *lees* *het* *boek.*
1S read.PRS DEF book
'I am reading the book.'
b. *Ik* *lees* *het* *boek* *niet.*
1s read.PRS DEF book NEG
'I am not reading the book.'

However, this strategy does not apply where there is an indefinite argument in the clause, as in (5b), where the indefinite article attracts the negation and appears as *geen*:

(5) a. *Ik* *lees* *een* *boek.*
1s read.PRS INDF book
'I am reading a book.'
b. *Ik* *lees* *geen* *boek.*
1s read.PRS NEG.INDF book
'I am not reading a book, li it. I am reading no book.'

We will see below that various languages have multiple strategies for negation, but that there is always one that applies in the most basic circumstances.

The hypothesis that I am proposing is that a language's basic negation strategy is also its highest negation strategy in the sense that the basic negation strategy excludes the possibility of applying the negative operator to any higher layer (where higher = higher within the Representational Level and somewhere within the Interpersonal Level). Consider a language with State-of-Affairs (SoA) negation as its basic negation, as in (6):

(6) $(p_1: (ep_1: (\text{Neg } e_1: (f^c_1: [\ldots (f^l_1: \blacklozenge (f^l_1)) \ldots] (f^c_1)) (e_1)) (ep_1)) (p_1))$

Such a language, I hypothesize, cannot formulate negation at its Propositional Content (p_1) or Episode (ep_1) layers. The second hypothesis to be examined here is that negation at lower layers than the layer of basic negation is possible but may or may not follow the 'basic' strategy.

The hypotheses will be tested with regard to six European languages, five of them Indo-European and one Finno-Ugric, namely, in order of treatment, Scottish Gaelic (§3), Spanish (§4), English (§5), German (§6), Finnish (§7) and Czech (§8). Section 9 will evaluate the hypotheses and conclude the paper. The hypothesized basic negation for each of the six languages is shown in Table 2:

Table 2. Hypothesized basic negation types in six European languages

Language	**Negation type**	**Rough paraphrase**	**FDG analysis**
Scottish Gaelic	Denial	I deny that it is raining	Illocutionary predicate (F_1: DENY (F_1))
Spanish	Non-truth	I affirm that it is not true that it is raining	Propositional negation (Neg p_1: […] (p_1))
English	Non-occurrence	I affirm that it is true that an occurrence of raining is not taking place	Episode negation (Neg ep_1: […] (ep_1))
German	Non-event	I affirm that it is true that no event of raining is taking place	State-of-Affairs negation (Neg e_1: […] (e_1))
Finnish	Negative configurational property	I affirm that it is true that an event of not raining is taking place	Configurational property negation (Neg f^c_1: […] (f^c_1))
Czech	Negative lexical property	I affirm that it is true that an event of non-raining is taking place	Lexical property negation (Neg f^l_1: […] (f^l_1))

3. Scottish Gaelic

A striking characteristic of the Scottish Gaelic language is the close structural relation between illocution and negation. Specifically, there is a completely regular opposition between declarative-affirmative Discourse Acts and the three other types, as shown in (7):[3]

(7) a. *Bha* (P^l) *mi* *sgìth.*
COP.INDEP.PST 1S tired
'I was tired.'

b. *Cha* (P^l) *robh* (P^{l+1}) *mi* *sgìth.*
NEG.DECL COP.DEP.PST 1S tired
'I was not tired.'

c. *An* (P^l) *robh* (P^{l+1}) *thu* *sgìth?*
INT COP.DEP.PST 2S tired
'Were you tired?'

d. *Nach* (P^l) *robh* (P^{l+1}) *thu* *sgìth?*
NEG.INT COP.DEP.PST 2S tired
'Weren't you tired?'

In this VSO language, the polarity of the clause is signalled in P^l, the leftmost clausal position, fused with Declarative or Interrogative marking (Mackenzie 2009b: 898). In the affirmative declarative, the finite verb appears in P^l in its independent form (here *bha*), while in all other

[3] All data from Scottish Gaelic, Spanish, English and German are from personal knowledge; data from Finnish and Czech are drawn from published sources and/or DeepL.

cases it appears in the dependent form (here *robh*) in P^{I+1}. This means that the Speaker uses the first word of each main clause to indicate both its illocution and its polarity, either positive (7a and 7c) or negative (7b and 7d). The intimate relation between illocution and polarity suggests recognizing four types of Discourse Act here, to be called Affirmation, Denial, Interrogative and Check respectively, and analysing them as shown in Table 3, with a 2 x 2 cross-classification of polarity and illocutionary distinctions.

Table 3. Four types of Discourse Act in Scottish Gaelic

Affirmation: $(A_1: [(F_1: \text{STATE } (F_1)) \ldots] (A_1))$	Question: $(A_1: [(F_1: \text{ASK } (F_1)) \ldots] (A_1))$
Denial: $(A_1: [(F_1: \text{DENY } (F_1)) \ldots] (A_1))$	Check: $(A_1: [(F_1: \text{CHECK } (F_1)) \ldots] (A_1))$

The identification of negation as a type of illocution has a certain status in the philosophy of language. Thus Dahlstrom (2010: 247) asserts emphatically: "NEGATION IS SOMETHING THAT WE DO" (his capitals); Ripley (2020: 58) more precisely writes "*DENIAL* is something we do; it is a speech act" (his capitals and italics) and that "negation is best understood by appeal to (among other things) denial" (2020: 63). In formal semantics, the notion of illocutionary negation is prominent in the work of Repp (2013), and in diachronic studies is studied in the work of Hackstein (2016). In functional linguistics, too, Givón (1979: 51) includes 'Negative' alongside the other 'speech acts' Imperative and Interrogative and argues (1979: 94) that negation is one of the "[nonfact] modalities" in language, thereby linking negation to interrogation (note that "doubt" and "question" are non-factual modalities for Hengeveld 2014). "Negation", Givón (1979: 132) writes (his emphasis):

> is a distinct speech-act in language, that is used largely to deny the supposed beliefs of hearers in the context where the corresponding affirmative has been assumed, rather than to impart new information in the context of the hearer's ignorance. Negatives are used to correct misguided beliefs on the background of assuming the hearer's *error*.

Thus (7b) above would be uttered where the speaker wishes to perform the act of denying what she supposes the hearer to believe, namely that she was tired. Similarly, (7d) serves to check – another kind of speech act – whether what she believes about the hearer (that she was tired) was true. Notice that this notion of a negative speech-act is distinct from "performative negation" (Searle 1969, Tsohatzidis 2001) or equivalently "negation of the neustic" (Lyons 1977: 770), as in *I don't promise to be there*, which Hengeveld & Mackenzie (2018: 20, 36-37) have argued not to involve negation of the illocution, but rather a declarative illocution equivalent to 'I declare that I am not promising to be there'.

The notion of negation as an illocutionary force is unproblematically assumed for Celtic languages in general (specifically Irish and Welsh) by McQuillan (2016: 22). The close relation between negative and illocutionary markers in various languages has frequently been commented upon, for example by Pineda-Bernuy (2014: 88) with regard to Cuzco Quechua *–chu* and to the negative origins of the Latin interrogative enclitic *=ne* (see also Heine & Kuteva 2002: 216-217 for data from other languages). However, there is a critique of Givón's "speech act of negation" to be found in Horn (2001: 3, 74-77), who identifies Frege (1919) as having "first stressed that negation cannot be reduced to denial", his crucial argument being that negation "may occur in unasserted contexts, such as the antecedent of a conditional" (Horn 2001: 74). Horn gives the example *If Paris is not the capital of France, my itinerary is in trouble* as not accepting a paraphrase with "I deny": **If I deny that Paris is*

the capital of France, my itinerary is in trouble. However, that argument rests on the supposition that *I deny* in a clause that starts with *If I deny* … is a performative illocution, while that seems not to be the case: **If I hereby deny …*; rather, it asks the hearer to imagine a situation in which the speaker denies the status of Paris as the capital of France.

This leads into the question how negation is expressed in Scottish Gaelic where no Illocution layer is present, namely under complement-taking predicates. Such predicates can be distinguished, following Hengeveld (2014), as in (8):

(8) a. *believe, know, doubt, wish* + (p_1)
b. *be certain, regret, be possible, act as if* + (ep_1)
c. *see, force, want, prevent* + (e_1)
d. c*ontinue* + (f^c_1)

The point of (8) is that the complements of the named predicates (and their equivalents in other languages) have as their highest layer the Representational Level layer indicated; thus the complement of *force*, for example, is a SoA (e_1), and so on. In addition, it is possible to negate a single (f^l_1).

In Scottish Gaelic two different strategies are used for the negation of clauses that do not involve a speech act of denial. The first of these applies to complements whose highest layer is a Propositional Content or Episode, as in the following examples, respectively:

(9) a. *Bha* *fios* *agam* *nach* *robh* *i*
COP.INDEP.PST knowledge at-1S NEG.COMP COP.DEP.PST 3SF
dileas *dhomh.*
faithful to-1S
'I knew she wasn't faithful to me.'

b. *Tha* *sinn* *duilich* *nach* *deach* *an* *duais*
COP.INDEP.PRS 1P sorry NEG.COMP AUX.DEP.PST DEF prize
a *bhuidheach-adh*.
PRTC LEN.award-VN
'We regret the prize was not awarded.'

In both (9a) and (9b), the complement clause is finite and introduced by a negative complementizer *nach* in the P^l position of that clause, with the finite verb in the dependent form that occurs in P^{l+1} (cf. the discussion of (7b-d) above). This strategy applies quite generally to (p_1) and (ep_1) complements.

The second strategy applies to the negation of all lower layers and involves non-finite complementation (the use of a verbal noun, where relevant with a preceding argument), introduced by the abessive preposition *gun* 'without' (see Mackenzie 2025). Here are examples of negated (e_1) and (f^c_1) complements and of (Neg f^l_1) respectively:

(10) a. *Thug* *i* *air* *gun* *an* *t-iasg* *ithe.*
take.INDEP.PST 3SF on.3SM without DEF fish eat.VN
'She forced him not to eat the fish, lit. She took on him without eating the fish.'

b. *Am* *bu* *chòir* *dhuinn* *leantainn* *air_adhart*
INT be.DEP.PST right to-1P follow forwards
gun *aontach-adh*?
without agree-VN
'Should we continue not to agree?, lit. Would it be right for us to follow forward without agreeing?'

c. *Chunnaic* *mi* *e* *gun* *stad* *aig* *na*
see.INDEP.PST 1S 3SM without stop.VN at DEF.P
solais *trafaic*.
light.P traffic.GEN
'I saw him not stop at the traffic lights.'

In (10a), the idiomatic causative expression *thoir air* + causee takes a negative (e_1) complement, i.e. the meaning is 'she caused him [not to…]' as opposed to 'she did not cause him [to …]'. In (10b) the idiomatic continuative expressed by *leantainn air adhart* takes a negative (f^c_1)-complement, i.e. the meaning is 'continue not to', as opposed to 'not continue to'. In (10c), the meaning is negation of the (f^l_1) only, i.e. the subject saw 'him' and the 'traffic lights' but also a failure to stop, a non-stopping.

We have seen that basic negation in Scottish Gaelic applies in main clauses but that two alternative strategies are deployed in complement clauses. As in main clauses, negation is marked in the P^l position of the complement clause/phrase, either by a negative complementizer (*nach*) or by a negative preposition (*gun*). The hypothesis that basic negation is highest negation is trivially true in this language; the subsidiary hypothesis that negation can occur at lower layers but may not adopt the strategy used for basic negation thus also applies in Scottish Gaelic. In terms of linearization, the P^l position of the marker of basic negation reflects its positioning as an abstract predicate high in the Interpersonal Level.

4. Spanish

In Spanish, the go-to strategy for negation involves the negative particle *no*. My claim is that *no* realizes the Neg operator at the Propositional Content layer, i.e. (11):

(11) (Neg p_1: (ep_1: (e_1: (f^c_1: […(f^l_1: ◆ (f^l_1)) …] (f^c_1)) (e_1)) (ep_1)) (p_1))

No generally occupies a peripheral position within the clause (P^l), as in (12):

(12) *No* *está* *llov-iendo*.
NEG be.3S rain-PTCP
'It is not raining.'

However, a Topic can usurp the P^l, pushing *no* into P^{l+1}, as in (13):

(13) *María* *no* *ha* *hecho* *su* *tarea.*
Mary NEG AUX.3S do.PTCP 3S.POSS homework
'Mary has not done her homework.'

Notice that this is not an option for Scottish Gaelic, which does not recognize Topic in its grammar (Mackenzie 2009b, Bartlett 2023); there the negative marker must remain in P^{l}.

Among the reasons for ascribing basic status to Propositional Content negation are the following. Firstly, *no* is used as a negative operator on an anaphoric (p_1), as in (14):

(14) *Creo* *que* *no.*
believe.PRS.1S COMP NEG
'I don't think so.'

However, it is not available as a negative operator on an anaphoric (e_1), see (15):

(15) **Observo* *que* *no.*
observe.PRS.1S COMP NEG
'I observe that (it's) not (happening).'

Secondly, the principal checking tags in Spanish are ¿*no*? and ¿*verdad*? (as well as *¿vale?* 'is it valid?' and *¿okey?* 'OK?'), which are equivalent in meaning and use. The use of ¿*verdad*? ('truth') points to *no* being oriented to the Propositional Content (which is where truth conditions apply). Parallel remarks apply to *sí*, which is used as a 'verum focus' marker, i.e. indicating focalized positive polarity; cf. also *Sí que vino* 'S/he did come.'

As Bosque & Gutiérrez-Rexach (2009: 633) point out, the traditional analysis of *no* as an adverb of circumstance (which in FDG terms would place it at the State-of-Affairs level) is clearly wrong: it expresses in their words "lisa y llanamente […] falsedad" ('purely and simply falsity', my translation, JLM).

In complement clauses whose highest layer is the Propositional Content, *no* appears immediately after the P^{l}-occupying complementizer (*que*) in P^{l+1} position or in P^{l+2} if there is an explicit Topic:

(16) *Sabía* *que* *(ella)* *no* *me* *era* *fiel.*
know.PST.IMPF.1S COMP 3SF NEG 1S.DAT COP.PST.IMPF.3S faithful
'I knew she wasn't faithful to me.'

No is also used in complement clauses whose highest layer is an Episode or an SoA, as in (17a), with a finite (ep_1) and (17b), with a non-finite (e_1):

(17) a. *Lament-amos* *que* *el* *premio* *no* *haya*
regret-1P.PRS COMP DEF prize NEG AUX.PRS.SBJV
sido *entreg-ado*.
AUX.PTCP award-PTCP
'We regret that the prize was not awarded.'

b. *Ella* *lo* *oblig-ó* *a* *no* *com-er*
3SF.NOM 3SM.ACC force-PST-3S PART NEG eat-INF
los *marisco-s.*
DEF.PL shellfish-P
'She forced him not to eat the shellfish.'

Where the highest layer of the negated complement clause is a Configurational Property (f^{c}_{1}), an abessive construction is available[4] (cf. Mackenzie 2025) with the preposition *sin* 'without':

(18) *¿Segui-re-mos* *sin* *estar* *de* *acuerdo?*
carry_on-FUT-1P without be-INF PREP agreement
'Shall we continue not to agree?; lit. 'Shall we carry on without being in agreement?'

Finally, an individual lexical item can also be negated by *no*, as in (19), to be understood as equivalent to (10c), i.e. a failure to stop (cf. Fábregas & González Rodríguez 2017: 513-514):

(19) *Le* *vi* *no* *deten-er-se* *en* *el* *semáforo.*
3S.DAT see.PST.1P NEG stop-INF-REFL PREP DEF traffic_light
'I saw him not stop at the traffic lights.'

Given that illocution and polarity are expressed quite separately, basically by intonation and *no*/*sí* respectively, Spanish has nothing comparable to Scottish Gaelic's illocutionary negation. Rather, the basic strategy involves negation of the Propositional Content. This aligns with the hypothesis that the basic negation layer disqualifies any higher layer. The second hypothesis, that lower layers may deviate from the basic strategy, is also true to the extent that Spanish has a distinct strategy for the negation of the Configurational Property, while the basic strategy continues to apply at the other lower layers.

5. English

In English, basic negation takes the form of inflection of the finite auxiliary (Zwicky & Pullum 1983) with the suffix *n't*. The suffix is very often syllabic, as in *isn't* /ˈɪzn̩t/ and *doesn't* /ˈdʌzn̩t/, but not always, cf. the monosyllabic *won't* /wəʊnt/ and *can't* /kɑːnt/ (cf. Bauer, Lieber & Plag 2013: 86-87). The resultant auxiliary word, unless pre-empted by a hierarchically higher element, appears in P^{M} in declaratives and in P^{I} in polar interrogatives:

(20) a. *It* (P^{I}) *isn't* (P^{M}) *raining* (P^{M+1}).
b. *Isn't* (P^{I}) *it* (P^{M}) *raining* (P^{M+1})?

N't is not, as the spelling might suggest, a cliticized form of *not*, which becomes clear from (21b), in which *n't* has been replaced by *not*:

(21) a. *It is not raining*.
b. **Is not it raining*?
c. *Is it not raining?*

[4] As Kees Hengeveld has reminded me, in line with the other layers negation with *no* is also a possibility here:

(i) *¿Segui-re-mos* *no* *est-ando* *de* *acuerdo?*
carry_on-FUT-1PL NEG be-PTCP PREP agreement

The forms in (21) are associated with special contexts, notably the strong prescriptive preference in (formal) writing for the use of *not* rather than *n't* and the association in speech of *not* with emphasis (*No, it's NOT raining*). In addition, McCawley (1999: 177) finds such clauses as (21c) to be of "lowered acceptability" (with relation to (20b)). These are reasons not to regard *not* as representing basic negation.

The negative finite auxiliary indicates the absolute tense of the clause and thus is associated with the Episode. As also proposed by Hengeveld & Mackenzie (2018: 23-24), it is such "a grouping of SoAs" that is jointly negated by this auxiliary; the Episode may consist of one SoA or several (see Bond 2011). Where there are more than one, the SoAs in question are often presented disjunctively (i.e. coordinated by *or*), despite the additive coordination of the SoAs under negation:[5]

(22) *It isn't raining or even looking like it might rain*.

As further evidence of Episode negation in English, consider the following example from Siegel (1987: 53):

(23) *Ward can't eat caviar and his guest eat dried beans.*

In this example, the negation, the present tense and the objective epistemic modality all scope over the two States-of-Affairs, since the meaning is 'It is not possible that [Ward eat caviar & Ward's guest eat dried beans]', where the two SoAs are understood as showing unity of time, location and individuals: the speaker is clearly horrified at the conjunction of luxury and deprivation in one household. All three operators (Neg, Pres, Poss) are situated at the Episode layer, as shown in outline in (24):

(24) $(p_i$: (Neg Past Poss ep_i: $[(e_i)$ $(e_j)]$ $(ep_i))$ $(p_i))$

Basic negation in English, then, is situated at the Episode layer and takes the form of the affix *-n't*. This has implications for Hengeveld & Mackenzie's (2018: 20, 23) previously proposed analysis of negation as applying to the Propositional Content in English, i.e. at the layer above the Episode, which they, following Dik (1997b: 174-177), regard as occurring in such mini-dialogues as (25):

(25) A. John is rich.
B. No, John is not rich.

where (25B) is analyzed as equivalent to "No, it is not true that John is rich". However, if basic negation lies at the Episode layer, the true equivalence is with "It is true that John isn't rich" or, more idiomatically representing the Topic-Comment structure, "The truth is that

[5] Cf. Huddleston (1988: 200): "A disjunction within the scope of a negative is normally interpreted inclusively, so that the negative denies the possibility of both disjuncts being true, as well as that of either one alone being true; in this interpretation *He hadn't seen Tom or Bill* is equivalent to *He hadn't seen Tom and he hadn't seen Bill,* a negated inclusive disjunction is logically equivalent to a conjunction of negatives". This is known as De Morgan's Second Law.

John isn't rich". There are also implications for the analysis of *no* in (25B), which can now be analysed as (p_i: (Neg ep_i) (p_i)) (and not as (p_1: –no– (p_1)), as proposed by Hengeveld & Mackenzie 2008: 149).

As for non-finite occurrences of negation in English, these occur at lower layers (e_1, f^c_1 and f^l_1) and are expressed by *not* (since *-n't* requires a finite verb). Let us consider the following outlines of the Representational Level structure of the portions within square brackets with negation at various layers:

(26) a. (p_1) *They believed* [*that their luck wouldn't run out*].
((p$_1$: (Neg ep$_1$: (e$_1$: (f$^c_1$: [… (f$^l_1$: ◆ (f$^l_1$)) …] (f$^c_1$)) (e$_1$)) (ep$_1$)) (p$_1$))

b. (ep_1) *It is certain* [*that the ship didn't sail*].
(Neg ep$_1$: (e$_1$: (f$^c_1$: [… (f$^l_1$: ◆ (f$^l_1$)) …] (f$^c_1$)) (e$_1$)) (ep$_1$))

c. (e_1) *She forced him* [*not to eat the shellfish*].
(Neg e$_1$: (f$^c_1$: [… (f$^l_1$: ◆ (f$^l_1$)) …] (f$^c_1$)) (e$_1$)

d. (f^c_1) *Shall we continue* [*not to agree*]?
(Neg f$^c_1$: [… (f$^l_1$: ◆ (f$^l_1$)) …] (f$^c_1$))

e. (f^l_1) *I saw him* [*not stop*] *at the traffic lights.*
(Neg f$^l_1$: ◆ (f$^l_1$))

In terms of the hypothesis that the basic negation (suffixation with *-n't*) is the highest negation in English, this appears to be borne out by the data. The second hypothesis, that negation at lower layers may take another form, is verified by the use of *not* at those layers.

6. German

Basic negation in German involves insertion of the non-clitic negative marker *nicht* and represents a good example of 'symmetric negation' (Miestamo 2005), in that the corresponding affirmative is achieved by simply omitting *nicht* (see §2 above). This strategy is uncontroversially the basic one in German. When it has its widest scope, its position is in the clause-final domain and it appears in P^F unless other elements have a prior claim to that position, for example a finite verb in a subordinate clause or a non-finite verb in a main clause. Where the clause-final domain is occupied by a Focus element within the scope of negation, *nicht* precedes it (for the full complexity of the placement of *nicht*, see Batoux 2007):

(27) a. *Ich* *ess-e* *das* *Brot* *nicht* (P^F).
1S eat-PRS.1S DEF bread NEG
'I am not eating the bread.'

b. *Du* *sieh-st,* *dass* *ich* *das* *Brot* *nicht* (P^{F-1}) *ess-e* (P^F).
2S see-PRS.2S COMP 1S DEF bread NEG eat-PRS.1S
'You see that I am not eating the bread.'

c. *Ich* *will* *das* *Brot* *nicht* (P^{F-1}) *ess-en* (P^F).
1S want.PRS DEF bread NEG eat-INF
'I don't want to eat the bread.'

d. *Das* *Brot* *ist* [*nicht* *lecker*]$_{Foc}$
DEF bread be-PRS.3S NEG tasty.
'The bread is not tasty.'

Now, whereas the English *-n't* scopes over an entire Episode, German *nicht* is restricted in its scope to an individual SoA. Compare (28) with the translationally equivalent (22):

(28) *Es* *regn-et* *nicht* *und* *(es)* *sieh-t* *nicht*
EMPTY.SBJ rain-PRS.3S NEG and EMPTY.SBJ look.-PRS.3S NEG
einmal aus, *als* *könnte* *es* *regn-en*.
even PART as.if could-3S EMPTY.SBJ rain-INF
'It isn't raining or even looking like it might rain.'

Each SoA has to be independently negated, as shown in (29):

(29) (p_1: (ep_1: [(Neg e_1: (f^c_1: […(f^l_1: ◆ (f^l_1)) …] (f^c_1)) (e_1)) (Neg e_2: (f^c_2: […(f^l_2: ◆ (f^l_2)) …] (f^c_2)) (e_2))] (ep_1)) (p_1))

As for complement clauses, negation can occur at the SoA level (the basic strategy) or at either of the two lower layers, all marked by the same form *nicht*:

(30) a. (p_1) *Sie glaubten,* [*dass ihr Glück nicht enden würde*]. 'They believed their luck wouldn't run out')
(p_1: (ep_1: (Neg e_1: (f^c_1: […(f^l_1: ◆ (f^l_1)) …] (f^c_1)) (e_1)) (ep_1)) (p_1))

b. (ep_1) *Sicher ist,* [*dass das Schiff nicht ausgelaufen ist*]. ('It is certain that the ship didn't sail')
(ep_1: (Neg e_1: (f^c_1: […(f^l_1: ◆ (f^l_1)) …] (f^c_1)) (e_1)) (ep_1))

c. (e_1) *Sie zwang ihn,* [*die Schalentiere nicht zu essen*]. ('She forced him not to eat the shellfish')
(Neg e_1: (f^c_1: […(f^l_1: ◆ (f^l_1)) …] (f^c_1)) (e_1)

d. (f^c_1) *Sollen wir* [*uns weiterhin nicht einigen?*] ('Shall we continue not to agree?')
(p_1: (ep_1: (e_1: (Neg f^c_1: […(f^l_1: ◆ (f^l_1)) …] (f^c_1): weiterhin (f^c_1)) (e_1)) (ep_1)) (p_1))

e. (f^l_1) *Ich sah ihn an der Ampel* [*nicht anhalten*]. 'I saw him [not stop] at the traffic lights'
(Neg f^l_1: ◆ (f^l_1))

German thus also aligns with the hypotheses: basic negation is situated at the SoA layer, so that the negation operator is not found at higher layers; as for lower layers, the negation marker takes the same form as basic negation.

7. Finnish

In Vilkuna's words (2015: 458), "Finnish standard negation … is expressed by a verbal complex in which a negative auxiliary appears as the finite element, carrying person/number marking, and the lexical verb is in a non-finite form". In the non-past tense, this form is generally known as the connegative; the past tense involves the past active participle form of the lexical verb:

(31) a. *E-i* *sada.*
NEGAUX-3S rain.CONNEG
'It does not rain, it is not raining.'
b. *E-i* *sata-nut.*
NEGAUX-3S rain-ACT.PTCP2
'It did not rain, it was not raining.'

The auxiliary has grammatical status and realizes a Neg operator at the Configurational Property layer, much as proposed by Mackenzie (2009a) for *fail to* in English:

(32) (p_1: (Nonpast/Past ep_1: (e_1: (Neg f^c_1: [… (f^l_1: ◆ (f^l_1)) …] (f^c_1)) (e_1)) (ep_1)) (p_1))

As in other languages, the Absolute tense distinction is carried at the Episode layer but is expressed by the non-finite form of the lexical verb.

The negative auxiliary *e-* always precedes the non-finite lexical verb. As the carrier of Tense, the lexical verb occupies P^M position and *ei* occupies a relative position preceding it, namely (P^{M-n}):

(33) *Anna-lla* (P^l) *ei* (P^{M-3}) *ehka* (P^{M-2}) *nykyään*(P^{M-1}) *ole* (P^M) *koira-a.*
Anna-ADE NEGAUX.3S maybe nowadays be.CONNEG dog-PARTV
'Anna maybe does not have a dog nowadays.'

Within an Episode that contains two (or more) SoAs, each of the corresponding Configurational Properties has to be negated individually (White 2006: 324, 330):

(34) a. *Hän* *ei* *soitta-nut* *ei-kä* *kirjoitta-nut.*
3S NEGAUX.3S ring-ACT.PTCP2 NEG-CONJ write-ACT.PTCP2
'S/he did not ring or write.'
b. *Jaana* *ei* *voi-nut* *tulla* *ei-kä* *Pasi-kaan.*
Jaana NEGAUX.3S can-ACT.PTCP2 come NEG-CONJ P-neither
'Jaana could not come, nor Pasi either.'

As observed by Fang (2025), Finnish uses echo answers to respond to polar interrogatives, echoing the negative auxiliary:

(35) *Osti-ko* *hän* *perun-oita?* *Ei.*
buy.PST.3S-INT 3S potato-PARTV.PL NEGAUX.3S
'Did s/he buy potatoes? No.'

This suggests the following representation for the answer in (35): (p_1: (ep_1: (e_1: (Neg f^c_1) (e_1)) (ep_1)) (p_1)).

As for complement clauses in Finnish, those with (p_1) and (ep_1) as their highest layer situate the negation at the (f^c_1) layer:

(36) a. *Tiesin,* [*että hän ei ollut uskollinen minulle*] ('I knew that s/he was not faithful to me')
(p_1: (ep_1: (e_1: (Neg f^c_1: [… (f^l_1: ◆ (f^l_1)) …] (f^c_1)) (e_1)) (ep_1)) (p_1))
b. *On vormaa,* [*että laiva ei purjehtinut*] ('It is certain that the ship didn't sail')
(ep_1: (e_1: (Neg f^c_1: [… (f^l_1: ◆ (f^l_1)) …] (f^c_1)) (e_1)) (ep_1))

Those with (e_1) and (f^c_1) as their highest layer, however, do not have finite complements but have recourse to the abessive case, i.e. the case with the meaning 'without' (cf. the use of Scottish Gaelic *gun* 'without' discussed in §3, and Mackenzie 2025 on privatives in FDG):

(37) a. *Hän* *pakotti* *hänet* [*olemaan* *syö-mä-ttä* *äyriäisiä*].
3S.NOM force.PST.3S 3S.ACC be.ACT.INF3.ILL eat-NMLZ-ABE shellfish.PARTV.PL
'S/he forced him not to eat the shellfish, lit. S/he forced him into being without eating the shellfish.'
(e_1: (f^c_1: […(f^l_1: ◆ (f^l_1)) …] (f^c_1)) (e_1))$_{\text{Abessive}}$
b. *Hän* *alkoi* *olla* [*välittä-mä-ttä* *elämä-stä*].
3S.NOM start-PST.3S be-INF care-NMLZ-ABE life-ELA
('S/he began not to care about life, lit. S/he began to be without caring about life.')
(f^c_1: […(f^l_1: ◆ (f^l_1)) …] (f^c_1))$_{\text{Abessive}}$

Finally, complements with negation of the lexical predicate of the type seen in the preceding sections, (Neg f^l_1: ◆ (f^l_1)), appear not to exist in Finnish. 'I saw him/her [not stop] at the traffic lights' can thus only be formulated as follows, with a finite complement clause:

(38) *Näin,* *kun* *hän* *ei* *pysähty-nyt* *liikennevaloi-ssa*.
see.PST.1S how 3S NEGAUX.3S stop-ACT.PTCP2 traffic_lights.INE
'I saw how he/she did not stop at the traffic lights.'
(e_1: (f^c_1: […(f^l_1: ◆ (f^l_1)) …] (f^c_1)) (e_1))

Here, too, then, the hypothesis is borne out that, with basic negation being situated at the (f^c_1)-layer, negation where higher layers are present, specifically (p_1) and (ep_1), involves (Neg f^c_1: ◆ (f^c_1)). Interestingly, complement clauses at the higher (e_1) layer and at the (f^c_1) layer itself are non-finite and therefore have recourse to nominalization and application of the abessive case. As for the one remaining lower layer, no evidence can be found for the

construction in question, so that Finnish remains neutral with regard to the secondary hypothesis.

8. Czech

Basic negation in Czech involves prefixation of *ne-* to the verb stem, including verbs with modal meanings and copulas. Only in the imperfective future is *ne-* prefixed to the future auxiliary, but to no other auxiliaries if present. The same prefix is used for clear cases of negation of a lexical property and can attach to words of any lexeme class; compare (39a) with (39b); (39c) shows double negation of the copula and the predicate:

(39) a. *Ja* *ne-jsem* *st'ástný*.
1S NEG-be.1S happy
'I am not happy.'
b. *Ja* *jsem* *ne-st'ástný*.
1S be.1S NEG-happy
'I am unhappy.'
c. *Ja* *ne-jsem* *ne-st'ástný*.
1S NEG-be.1S NEG-happy
'I am not unhappy.'

Czech has word-initial stress, and the *ne-* attracts this stress. As such, its ordering position is P^{I} within the morphosyntactic Word. The process is so general that Czech lexicographers wonder whether lexemes like *nest'ástný* should be included in dictionaries (Kováříková, Chlumská & Cvrček 2012); see also Jiroušková (2009).

In coordinated constructions, where English shows evidence of Episode negation, each verb has to be individually negated, as in German and Finnish:

(40) *Ne-pozdravil-a* *mě,* *ani* *se* *na* *mne* *ne-podíval-a.*
NEG-greet.PTCP-F 1S.ACC nor REFL on 1S.GEN NEG-look.PTCP-F
She didn't greet (me) or look at me.' (Janda & Townsend 2000: 89)

In gapping constructions, however, the prefix can stand by itself, stressed:

(41) *Jan* *jí* *ryby,* *jeho* *společníci* *ne.*
Jan eats fish his companions NEG
'Jan eats fish, his mates not.' (Bernini & Ramat 1996: 93)

and *ne* is also used as a negative answer (*No.*) to a polar interrogative. The status of *ne-* as a prefix is consequently somewhat controversial: the fact that it attracts the stress in the Phonological Word militates against clitic status; the independent uses of *ne* argue against prefix status. The problem is quite general in Slavic languages: as Vakareliyska (2021: 2) explains, "in the Slavic languages, the same negation marker *ne* (Po *nie*, US / LS *nje-*; hereafter generally "*ne*"), which is derived from the Proto-Indo-European negation marker **ne*, is used in both sentential and lexical negation, blurring the boundary between syntactic

and morphological negation and leaving unclear whether the negation marker is an affix or a free morpheme".

Since *ne-* is the only negation marker in Czech, it is trivially also its basic negation. In complement clauses, the negation of the predicate serves to express negation of the entire clause:

(42) a. *Věděl_jsem, že mi* [*ne-byla*] *věrná*.
I_knew COMP to.me NEG-was faithful
'I knew that she was not faithful to me.'
((p$_1$: (ep$_1$: (e$_1$: (f$^c_1$: [… (neg f$^l_1$: ◆ (f$^l_1$)) …] (f$^c_1$)) (e$_1$)) (ep$_1$)) (p$_1$))

b. *Je jisté, že loď* [*ne-vyplula*].
it_is certain COMP ship NEG-left
'It is certain that the ship didn't sail.'
(ep$_1$: (e$_1$: (f$^c_1$: [… (Neg f$^l_1$: ◆ (f$^l_1$)) …] (f$^c_1$)) (e$_1$)) (ep$_1$))

c. *Přinutila ho, aby* [*ne-jedl*] *měkkýše.*
she_forced him COMP NEG-he_ate shellfish
'She forced him not to eat the shellfish.'
(e$_1$: (f$^c_1$: [… (Neg f$^l_1$: ◆ (f$^l_1$)) …] (f$^c_1$)) (e$_1$))

d. *Začal se* [*ne-zajímat*] *o život*.
he_began REFL NEG-care PREP life
'He began not to care about life.'
(f$^c_1$: [… (Neg f$^l_1$: ◆ (f$^l_1$)) …] (f$^c_1$))

e. *Viděl_jsem ho* [*ne-zastavit*] *na semaforech*.
I_saw him NEG-stop PREP traffic_lights
'I saw him not stop at the traffic lights.'
(Neg f$^l_1$: ◆ (f$^l_1$))

As for the hypotheses, the fact that Czech assigns the Neg operator at the lowest of the available layers excludes the possibility of any of the formulation options seen for the preceding five languages, in line with the first hypothesis; as for the second hypothesis, it is not applicable, as there is no lower layer among the six listed in Table 1.

9. Conclusions

We have seen that when it comes to the cognitive operation of negation, the six languages examined differ in the grammatical strategies employed to express it and they do so in a structured manner, reflecting hierarchical distinctions made in Functional Discourse Grammar. We have also noticed that the morphosyntactic positioning of the negation marker reflects the hierarchical location of the Negative operator: in general terms, the lower the location, the closer the negative marker is to the core of the clause. The morphosyntactic positions are summarized in Table 4.

Table 4. Morphosyntactic position of the negative marker in each language studied

Language	**Basic negation layer**	**Morphosyntactic position**
Scottish Gaelic	Illocution	Clause position P^{I}
Spanish	Propositional content	Clause position P^{I} or P^{I+n}
English	Episode	Clause position P^{M}
German	State-of-Affairs	Clause position P^{F-n}
Finnish	Configurational property	Clause position P^{M-n}
Czech	Lexical property	Word position P^{I} in Vw_1

The take-away point is that although the six languages adopt distinct strategies, in communicative terms they are equivalent. Formulation is a toolbox, not a representation of meaning, and contains many tools that can get the negation job done.

As for the hypothesis that a language's basic negation is also its highest negation, this is borne out by the analysis. Basic negation is always associated with one of the six layers identified in Table 1. If higher layers are present (for example a Propositional Content layer where basic negation is at the State-of-Affairs layer), the Neg operator cannot apply at any of those higher layers. This is what is meant by the statement that a language's basic negation is also its highest negation. As for the second hypothesis, lower layers are always present (except where the Neg operator is situated at the Lexical property layer), and negation at any of these lower layers is not basic negation; the form taken by the negative marker at lower layers may be the same as or different from the marker of basic negation. The hypotheses are therefore confirmed.

Table 5 gives an overview of the negation forms found in the six languages examined in this paper. The marker of basic negation is shown in bold.

Table 5. Negative markers in the six languages examined

	Sc. Gaelic	Spanish	English	German	Finnish	Czech
Illocution	***cha(n)***	—	—	—	—	—
Prop. Cont.	*nach*	***no***	—	—	—	—
Episode	*nach*	*no*	***-n't***	—	—	—
SoA	*gun*	*no*	*not*	***nicht***	—	—
Config Prop	*gun*	*sin*	*not*	*nicht*	***e-***	—
Lexical Prop	*gun*	*no*	*not*	*nicht*	*e-*	***ne-***

The argument in this paper has revealed a characteristic of negation that sets it apart from all other operators that may occur at different layers. Modality operators, for example, are found at various layers, but they have a different meaning at each: subjective epistemic modality at the p_1-layer, objective epistemic modality at the ep_1-layer, event-oriented modality at the e_1-layer, and participant-oriented modality at the f^{c}_1-layer. Similarly, the difference between absolute and relative tense, again a meaning opposition, is represented in FDG with distinct operators at the ep_1- and e_1-layers respectively. What distinguishes

negation from these and other categories is that the corresponding operator (or abstract predicate) can be situated at any of several different layers, with resultant differences in scope but with no difference in meaning. The positioning of negation is determined on a language-by-language basis, with each option having the same communicative effect as all the other options. This is attributable to the fact that negation operates as one side of a simple on-off (i.e. affirmative-negative) opposition. Affirmation is characterized by the absence of any mark of negation; as soon as such a mark appears, at any layer, the prerequisite for affirmation is violated and the result is negation.

Abbreviations used in glosses

1	first person	INDF	indefinite
2	second person	INE	inessive
ACC	accusative	INF	infinitive
ACT	active	INT	interrogative
ADE	adessive	LEN	lenition
AUX	auxiliary	M	masculine
COMP	complementizer	NEG	negative
CONJ	conjunction	NEGAUX	negative auxiliary
CONNEG	connegative	NMLZ	nominalization
COP	copula	NOM	nominative
DAT	dative	P	plural
DECL	declarative	PART	particle
DEF	definite	PARTV	partitive
DEP	dependent form	POSS	possessive
ELA	elative	PREP	preposition
EMPTY.SBJ	empty subject	PRS	present (tense)
F	feminine	PST	past (tense)
FUT	future (tense)	PTCP	participle
GEN	genitive	REFL	reflexive
ILL	illative	S	singular
IMPF	imperfect	SBJV	subjunctive
INDEP	independent form	VN	verbal noun

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