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Negation in Functional Discourse Grammar

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The purpose of this chapter is to show that the model of Functional Discourse Grammar can be used to provide a detailed classification of expressions of negation by taking its hierarchical, layered structure as the point of departure. The chapter thus follows up on ideas first launched in Dik (1997) concerning the various layers of Functional Grammar at which polarity operators can apply. FDG has introduced a number of additional layers which can also host the negative operator to those recognized in FG, and it has furthermore introduced the distinction between the Representational (semantic) and Interpersonal (pragmatic) Levels. We will argue that operators with a negative value can be found at all layers of both the Interpersonal and the Representational Levels. We illustrate all these types and show how their scope properties and their formal manifestation and behaviour warrant their identification in the grammar.

1. Introduction

A salient characteristic of Functional Discourse Grammar (FDG; Hengeveld & Mackenzie 2008) is that grammatical description is seen as arising from two operations, Formulation and Encoding. Formulation delivers two levels of analysis, the Interpersonal and Representational Levels. These, in turn, are mapped onto two Encoding levels, the Morphosyntactic and Phonological Levels. Each of the four levels consists of a substantial number of nested layers in ways that will be detailed below. Each layer is structured as shown in (1):

$$(1) (\pi v_1: [\text{head}] (v_1): \sigma (v_1))_{\Phi}$$

The layer is identified by its variable, shown in (1) as 'v': the layer representing the Propositional Content, for example, is represented with the symbol 'p' occupying the v-position. The variable is preceded by π , which represents one or more operators applying at the layer. An operator indicates a specification of the respective layer that will be expressed grammatically rather than lexically; in the case of a Propositional Content, for example, subjective epistemic modality is shown as an operator on this

layer. There are four possibilities for filling the ‘head’, which takes the variable as its argument: (a) the head may be absent, in the case of anaphora, where there is no lexical material, as in (2a); (b) it may be empty, where it is necessary to provide a head for a modifier, as in (2b); (c) it may be lexical, as in (2c); or (d) it may be configurational, where it consists of one or more instances of the immediately lower layer, in this case the Episode, as in (2d). Lexical heads and modifiers are represented as Properties (f).

- (2) a. John thinks Sheila is ill but *that* isn’t true.
 (p_i)
 b. There’s an idea – a stupid *one* – that only rich people have nannies.
 $(p_i: ((f_i: (f_j: \text{stupid } (f_j)) (p_i))$
 c. That is a crazy *idea*.
 $(p_i: ((f_i: \text{idea } (f_i)): (f_j: \text{crazy } (f_j)) (p_i))$
 d. [Sue came back yesterday] but [John is still in London].
 $(p_i: [(ep_i) (ep_j)] (p_i))$

At the Formulation (but not the Encoding) Levels, the head may be further modified by lexical material, shown in (1) as σ ; each Modifier also takes the variable as its argument. An example is seen in (3):

- (3) Sheena probably stayed at home.
 $(\pi p_i: [-\text{Sheena stayed at home-}] (p_i): (f_i: \text{probable } (f_i)) (p_i))$

Finally, at all but the Phonological Level, a layer is marked for its function: its rhetorical or pragmatic function at the Interpersonal Level, its semantic function at the Representational Level, and its syntactic function at the Morphosyntactic Level. For example, a Propositional Content may take the semantic function Undergoer (U) with respect to the verb *believe*, as in (4):

- (4) The people believed that the Government was unjust.
 $(p_i: [(past ep_i: (e_i: (f_i: [(f_j: \text{believe } (f_j)) (x_i: \text{-the people- } (x_i))_A (p_j: [-\text{the Government was unjust-}] (p_j))_U (p_i))$

The layers (and the respective variables) recognized in FDG at the Formulation Levels are shown in Table 1.

Previous work in FDG has analysed various grammatical phenomena using at least part of the repertoire of layers shown in Table 1. Olbertz and Honselaar (2017) have considered how the grammaticalization of Dutch *moeten* ‘must’ can be traced as involving upward movement through several of the layers, while Hengeveld and Dall’Aglio Hattner (2015), considering a sample of 64 native languages of Brazil, have distinguished four types of evidentiality at the (e_1) , (ep_1) , (p_1) and (C_1) layers. The purpose of the present chapter is to consider how we may understand negation from this perspective, specifically determining whether the operator ‘neg’ can and should be located at different layers in the FDG repertoire.

Table 1. Formulation Levels and their layers in Functional Discourse Grammar

Interpersonal Level
Move (M_1)
Discourse Act (A_1)
Illocution (F_1)
Participants (P_1, P_2)
Communicated Content (C_1)
Subact of Reference (R_1)
Subact of Ascription (T_1)
Representational Level
Propositional Content (p_1)
Episode (ep_1)
State-of-Affairs (e_1)
Configurational Property (f^c_1)
Lexical Property (f^l_1)
Individual (x_1), Location (l_1), Time (t_1), Manner (m_1), Reason (r_1), Quantity (q_1)
Lexical Item ($\$$)

This chapter will divide into five further sections. Section 2 will consider existing proposals for the analysis of negation as applying at different layers (or at the rough equivalent to FDG layers in other approaches). Section 3 will go on to show that negation can apply at each of the layers of the Representational Level. Section 4 will show that negation applies at most layers of the Interpersonal Level, too. Section 5 then shows that cases of multiple negation can be readily interpreted in terms of the classification provided. In Section 6 we provide a conclusion.

2. Existing treatments of negation

By common assent, negation is one of the most complex phenomena in human language. As Horn and Wansing (2016) phrase it, with a delightfully self-referential double negation, “Negation is a *sine qua non* of every human language, yet is absent from otherwise complex systems of animal communication”. The present article does not aspire to cover negation in all its aspects¹ but rather focuses upon the relevance

1. Representative examples of the massive literature on negation are Horn (1985, 2001) for semantic, pragmatic and philosophical aspects, a diachronic tradition extending from Jespersen (1917) to Willis et al. (2013), a partially related synchronic tradition on negative concord from Labov (1972) to Van der Auwera & Van Alsenoy (2016), typological overviews by Bernini & Ramat (1996), Miestamo (2005) and Dahl (2010), and syntactic work from Klima (1964) through Haegeman (1995) to Zanuttini (1997) and Zeijlstra (2013).

of layering for understanding how it is organized in the languages of the world. By carefully considering the possibilities of negation at all layers at the Interpersonal and Representational Levels in FDG, we arrive at a fine-grained classification of types of negation that not only contributes to the typology of negation itself, but also validates the distinctions made in the hierarchical structure used in FDG. It also allows us to better understand cases of multiple negation, as will be shown in Section 5.

Layering was already present in Functional Grammar (FG), the theory that preceded FDG. Dik (1997), in the second volume of his *magnum opus* on FG (1997: 169–187), claimed that the negative operator can apply at any of five layers. Dealing with them in descending order, from the hierarchically highest to the lowest, Dik first recognizes ‘Illocutionary negation’, “typically achieved by negating an explicit performative verb” (1997: 173), as in (5):

- (5) I do not promise to come.

The exact status of illocutionary negation will be discussed in Section 4.2 below, where it will be argued that (5) is in fact not an example of illocutionary negation.

Secondly, ‘Propositional negation’ (Dik 1997: 174–177) applies when the truth value of a proposition as a whole is explicitly at issue. It accordingly occurs in discursive contexts where the truth of a statement by one’s conversation partner is challenged, as in (6):

- (6) A. John is rich.
B. No, John is not rich. (“No, it is not true that John is rich.”)

According to Dik (1997: 175), propositional negation is signalled in English by nuclear stress on the negative particle *not*. But in our view the prosodic differences are rather the result of the contrast between (6A) and (6B). The crucial property of propositional negation is the fact that an entire proposition is being negated. We will return to this in Section 3.

The third type of negation distinguished by Dik is ‘Predicational or State-of-Affairs negation’ (1997: 177). This expresses the non-application of a State-of-Affairs, and is exemplified by (7) and (8):

- (7) John is not rich.
(8) It is better not to travel there by car.

In (7) the speaker is not challenging the Propositional Content of a statement by his/her partner, but informing them, in an Initiating Discourse Act, that the possible State-of-Affairs of John being rich is not real.

The fourth type is ‘Predicate negation’ (1997: 178–180) and has narrower scope, applying only to an individual predicate. Predicate negation shows up most clearly in

litotes constructions like *not unattractive*, as in (9), in which the negator *not* applies to the derived predicate *unattractive*:

- (9) John married a not unattractive girl. (Dik 1997: 179)

Finally, ‘Term negation’ or ‘Zero quantification’ (Dik 1997: 180–183) is seen as involving not a negative operator *neg* but a zero-quantifying operator \emptyset . In English this is expressed as *no*, as in (10):

- (10) I have no money left.

A recurrent observation in Dik’s treatment of negation, one that will also play a part in our own argument, is that a negated clause can be embedded inside a negated clause or that negation can occur more than once in a single clause. Consider the following examples:

- (11) a. I do not promise not to come.
 b. I do NOT have no money left!
 c. You cannot not accept.

In (11a), we see, in Dik’s terms, Illocutionary negation in the higher clause taking scope over Predicational negation in the lower clause; in (11b), Propositional negation with scope over Term negation within a single clause; and in (11c), Predicational negation with scope over Predicate negation within a single clause.

While agreeing in principle, if not in detail, with Dik’s (1997) approach to negation, we observe that he (unsurprisingly) makes many fewer distinctions than there are layers in FDG. However, it should be said that Dik makes more distinctions than are generally found in the more syntactically oriented literature on negation, which in the first instance did not go beyond distinguishing between ‘sentence negation’ and ‘constituent negation’ (Klima 1964).

More recent work in formal syntax has analysed negative markers as phrases (NegP), for example because many languages, such as French with its *ne ... pas*, require more than one word to express negation. The positioning of NegP in the syntactic tree has been regarded in the Principles & Parameters approach as parametric, i.e. subject to cross-linguistic variation: Ouhalla (1990) has NegP dominate either TP (Tense Phrase) or VP (Verb Phrase), arguing on syntactic grounds that the former characterizes French and the latter English. Zanuttini (1997), comparing northern Italian dialects, argues for as many as four syntactic positions, the highest for Italian *non*, the second-highest for Piedmontese *pa*, the third-highest for Piedmontese *nen* and the lowest for Milanese *no*. Within the cartographic approach to syntactic structure developed by Cinque (2002) and his co-workers, one of the most intriguing proposals, and one which will also prove relevant for our

own argument (see Section 3 below), is that of De Clercq (2013), who distinguishes four positions for negation: the highest is as a polarity marker, the second-highest as a focus marker, the third-highest as a degree marker and the lowest as a quantity marker, with corresponding scope over ever smaller portions of the underlying syntactic structure. Since more recent work in formal syntax, like that of De Clercq, has incorporated semantic and pragmatic notions such as polarity, degree, quantity and focus into its formalisms, the opportunities for cross-fertilization with FDG have increased.

In Role & Reference Grammar (RRG), whose representations combine syntactic and semantic analysis, Van Valin and LaPolla (1997: 45–46), in a passage that explicitly compares RRG and FG, draw a three-way distinction of Clausal (or External) Negation, Core (or Internal) Negation and Nuclear Negation. They exemplify the distinction with (12):

(12) John did not read a book.

Where the paraphrase is ‘It is not the case that John read a book’, the negation takes the entire Clause in its scope. Where the intended meaning is (for example) ‘John did not read a book, he read a magazine’, then the scope of the negation is said to be on an element of the core, namely *a book*.² Finally, in an example like *John read no books* (cf. Dik’s ‘zero quantification’ above), the negator *no* is analysed as having the narrowest type of scope.

This brief overview of other theories, FG, Generative Grammar (GG) and RRG, has shown that there is a consensus that negation, particularly with regard to questions of scope, is to be situated at different points in the analysis, whatever form it may take: semantic (and pragmatic) as in FG, syntactic as in GG or semantico-syntactic as in RRG. The idea has also arisen that different languages may diverge with regard to the relative placement of negation in the hierarchical structure. Another focus of attention has been multiple occurrences of negation markers in one and the same clause. These three themes will recur in our treatment of negation in FDG. Since negation has been studied outside the FDG framework with special attention to its ideational uses, we will begin our treatment in Section 3 at the Representational Level. Section 4, which is indebted to the study of negation as a pragmatic phenomenon (especially in the tradition of Horn 1985, 2001), will turn to the Interpersonal Level.

2. FDG, unlike RRG, does not regard this as a semantic distinction, but rather as a matter of pragmatics: while the semantic scope of *not* is for FDG the same in what Van Valin and LaPolla call Clausal and Core Negation, the pragmatic function of *a book* in the latter case differs at the Interpersonal Level, namely Contrast applied to the corresponding Subact of Reference.

3. The Representational Level

This section will argue that FDG needs to recognize negation (or its equivalent) at all layers of the Representational Level: p-negation at the Propositional Content layer, ep-negation at the Episode layer, e-negation at the State-of-Affairs layer, f^c-negation at the Configurational Property layer, f^l-negation at the Lexical Property layer, \$-negation on lexical items, and zero-quantification at the Individual, Location, Time etc. layers. Evidence for each type of negation will be provided in successive subsections.

3.1 P-negation

We adopt Dik's (1997) analysis of negation at the Propositional Content layer (see Section 2 above). In English and Dutch, p-negation applies when the truth value of a Propositional Content is explicitly at issue. It occurs in discursive contexts where the speaker is challenging the truth of a statement by his/her conversational partner; see example (6) above. Negation at this Layer will be represented as follows:

(13) (neg p₁: [...] (p₁))

Propositional negation is a good example of how semantic structure, as shown at the Representational Level, differs from conceptualization. Conceptually (and logically), there is no difference between (14a) and (14b); semantically, however, they are distinct, as is reflected in the positioning of the negator *not*.

- (14) a. It is not true that Mary is reading a poem.
 b. It is true that Mary is not reading a poem.

This distinction corresponds to that between p-negation and e(p)-negation³ respectively.

3.2 Ep-negation

Hengeveld and Mackenzie (2008: 157) define an Episode as a grouping of States-of-Affairs "that are thematically coherent, in the sense that they show unity or continuity of Time (t), Location (l), and Individuals (x)". The application of the neg operator to an Episode variable thus involves a single negation marker negating such a grouping of SoAs. Various scholars have observed that this occurs in different languages:

3. Where the distinction between ep-negation and e-negation is not in question we will use the contraction e(p)-negation.

(15) English

Mark didn't wash the dishes and Hoover the floor. (Bond 2011: 83)

In (15), the negative is syntactically associated with the tense auxiliary *did*, which scopes over the States-of-Affairs 'Mark wash the dishes' and 'Mark Hoover the floor'. The representation is accordingly as follows:

(16) $(p_i: (\text{neg past } ep_i: [(e_i) (e_j)] (ep_i)) (p_i))$ (= (19))

Episode negation is frequently encountered in languages that make use of converbs, where finiteness/tense is expressed only on the last of the verbs that occur in sequence. Consider the following example:

(17) Burushaski

Khíruman sis majít-ar n-úu-nin nimáaz
 some people mosque-DAT CVB-3PL.HUM.SBJ(go)-CVB prayer
ay-é-č=á-am.

NEG-do-DUR=AUX-3PL.HUM.SBJ (Tikkanen 1995: 511, in Bond 2011: 102)

- 'Having gone to the mosque some people do not pray' (but read)
- 'Some people do not pray after getting to the mosque.' (but after getting up)
- 'Some people do not go to the mosque and do not pray.'

Example (17) has three interpretations. In interpretations (17a) and (17b), the negative prefix *ay-* has scope only over the second State-of-Affairs in the Episode; these two interpretations do not differ at the Representational Level but at the Interpersonal Level, since there is a difference in the extent of the Focus: in the first interpretation, only *nimáaz ... -é-* is in Focus; in the second *majítar núunin nimáaz ... -é-* is in Focus. In interpretation (17c), however, the negation takes the entire Episode in its scope; this corresponds to a difference at the Representational Level:

(18) a. $(p_i: (ep_i: [(e_i) (\text{neg } e_j)] (ep_i)) (p_i))$ (= (17a/b))
 b. $(p_i: (\text{neg } ep_i: [(e_i) (e_j)] (ep_i)) (p_i))$ (= (17c))

Consider a comparable example from Turkish:

(19) Turkish

Ev-e gel-ip el-ler-in-i
 house-DAT come-NARR hand-PL-POSS.3SG-ACC
yıka-ma-d-ı.

wash-NEG-PST-3SG

(Johansson 1995: 126)

- 'He came home and didn't wash his hands.'
- 'He didn't come home and didn't wash his hands.'

This example is subject to two contextually determined interpretations (Zeynep Işıl Hitit, p.c.): in interpretation (19a), the negative suffix *-mE-* has only the second State-of-Affairs in its scope, while in interpretation (19b), it is again the entire Episode that is negated. The representations in (18) again apply, respectively.

Turkish thus has both ep-negation and e-negation. However, this language also manifests p-negation, but here a different strategy is used, namely a ‘negative copula’ *değil*. This copula behaves as a non-verbal predicate and takes the corresponding personal suffixes, as in (20):

- (20) *Öğretmen değil-im.*
 teacher NEG.COP-1SG
 ‘I am not a/the teacher; it is not the case that I am a/the teacher.’

This negative copula can also occur in double negative constructions as in (21), analysed as in (22):

- (21) Turkish
(Ben) bugün maç-a git-me-yecek değil-im.
 (1SG) today match-DAT go-NEG-FUT NEG.COP-1SG
 ‘I will not not go to the match today.’ (= ‘It is not true that I will not go to the match today.’)
 (Kornfilt 1997: 126)
- (22) (neg p_i: (fut ep_i: (neg e_i: (ep_i)) (p_i))

Example (21) is the first of a number of cases we will see of double negation being used to make an (often emphatic) affirmative statement.

There is another phenomenon that may help us distinguish between p-negation and e(p)-negation. This concerns the occurrence of Negative Polarity Items (NPIs), such as *any* in English. In general terms, these items only occur under the scope of negation; in FDG, where it is a matter of grammatical alternation, this distinction may be treated as a matter for resolution at the Morphosyntactic Level. In English, it appears that NPIs arise under the scope of ep-negation (and hierarchically lower forms of negation) but not under the scope of p-negation. Consider the following examples, with ep-negation in (23b):

- (23) a. He bought some books ($-smx_i$) and sold some ($-smx_i$) too.
 b. He didn’t buy any/*some books ($-smx_i$) or sell any/*some ($-smx_i$) either.

The expression of ($-smx$) (= non-specific multiple Individual) is, as shown in (23), dependent on the presence or absence of negative polarity at the ep-layer.⁴ (Notice the polarity also affects the nature of the coordination (*and/or*) and the form of the additive marker *too/either*.) P-negation, however, does not impose the use of NPIs:

4. Specificity itself is treated at the Interpersonal Level in FDG.

- (24) A. He bought some ($-smx_i$) books.
 B. No, he did NOT buy some ($-smx_j$) books.
 (“It is not true that he bought some books.”)

Notice that the use of *some* is allowed in (24B), while it is ungrammatical in (23b). This section thus has shown that there are compelling reasons for distinguishing between p-negation and ep-negation.

3.3 E-negation

The nature of e-negation is well captured by Bond (2013: 29): this kind of negation serves to “[...] model a binary contrast between a state of affairs in a grammatically framed alternate reality in relation to the state of affairs in the communicated reality such that some or all of the properties of the alternate reality are excluded from the set of possible properties of the communicated reality”. The underlined sections of the sentences in the following example show the scope of e-negation within an Episode:

- (25) a. Mark washed the dishes but didn't Hoover the floor.
 b. Mark didn't wash the dishes but Hoovered the floor.

In neither of these sentences could *n't* be understood as scoping over the entire Episode. The circumstances under which a conjunction of States-of-Affairs becomes eligible for the kind of ep-negation observed in (15) above, here repeated as (26a), are restricted. Firstly, one of the arguments must be shared:

- (26) a. Mark didn't wash the dishes and/or Hoover the floor. (= (15))
 b. Mark didn't wash, and/or Susan dry, the dishes.
 c. *Mark didn't wash the dishes and/or Susan Hoover the floor.

In (26a) the argument shared by both States-of-Affairs is Mark; in (26b) it is *the dishes*; in (26c), since there is no shared argument, the negation does not carry over to Susan Hoovering the floor. Secondly, unlike the Burushaski and Turkish examples with coverbs cited above, ep-negation in English does not apply if the final verb is negated; (27) cannot be interpreted as synonymous with (26a):

- (27) Mark washed the dishes and didn't Hoover the floor.

Notice, finally, that a verb such as *want* can take a negated Episode as its argument, as in (28a); in this case, the second infinitive cannot take its own infinitive-marker *to*. However, if only the first of the States-of-Affairs is to be negated, the affirmative polarity of the non-first State-of-Affairs is marked by the presence of the infinitive-marker *to*:

- (28) a. I wanted Mark not to wash the dishes and Hoover the floor.
 b. I wanted Mark not to wash the dishes and to Hoover the floor.

Only (28b) allows addition of *instead*.

E-negation corresponds to Dik's 'predicational negation'. Semantically speaking, the neg operator scopes over the entire State-of-Affairs but in practice it is often the case that not all elements of the State-of-Affairs are central to the negation. This is because the Subacts that make up the Communicated Content (at the Interpersonal Level) divide into Focus and Background Subacts and only those in Focus are interpreted as falling under the scope of negation. Thus all of the following examples, in which the underlined constituents are Subacts with the pragmatic function Focus, will be regarded as involving e-negation:

- (29) a. The Sun does not revolve around the Earth (but the Earth around the Sun).
 b. Phobos and Deimos do not revolve around the Earth (but around Mars).
 c. The Moon does not revolve around Mars, but Phobos and Deimos (do).

However, in context none of the examples is interpreted as a blanket negation. In (29a) the Focus elements (the Sun, the Earth) are central to the negation, while 'revolving' (which does happen) is not; in (29b) and (29c) it is (the Earth) and (the Moon) respectively that are in Focus; all non-Focus elements are in the Background, i.e. they correspond to presupposed information in the Conceptual Component. If we abstract from the Focus-Background opposition, however, we can see that semantically speaking the negation does apply to the entire State-of-Affairs in each case: for example the entire situation of the Sun revolving around the Earth does not correspond to reality.

E-negation in English is also recognizable from its triggering (where appropriate) an affirmative tag question:

- (30) The Sun does not/doesn't revolve around the Earth, does it?

Tag questions are not found after p-negation, since tag questions serve interactionally to elicit the addressee's agreement, while p-negated statements serve to correct the addressee's assumptions. Thus, under the intended reading, (31B) is inappropriate:

- (31) A. The Sun revolves around the Earth.
 B. *The Sun does NOT revolve around the Earth, does it?

Let us now turn to negation of the head of one type of State-of-Affairs, the Configurational Property.

3.4 F^c -negation

The Configurational Property (f^c) differs from the Lexical Property in forming a configuration, i.e. a set of representational layers that corresponds to one of the predicate frames recognized in the grammar. The general format of the Configurational Property is shown in (32), where the material between square brackets constitutes the configuration (cf. Hengeveld & Mackenzie 2008: 182):

$$(32) (\pi f^c_1; [(v_1) \dots (v_n)_\varphi] (f^c_1); \sigma (f^c_1)_\varphi)$$

Mackenzie (2009) argues that the English verb *fail*, followed by a *to*-infinitive, has a semantically bleached sense in which any sense of a conscious but unsuccessful attempt is absent, leaving only the sense of negation, as in (33):

- (33) a. It failed to rain for two years.
b. The train failed to arrive on time.

He further argues that bleached *fail to* is an expression of the operator ‘neg’ as applied to the Configurational Property, i.e. ($\text{neg } f^c$). He offers four arguments for this analysis.

Firstly, *fail to* occurs in the complement of ‘aspectual’ verbs that are known to take a Configurational Property as their complement, as in (34):

- (34) a. His wife continued to fail to conceive.
b. His legs began to fail to hold him up.

Secondly, depictive secondary predications (cf. also Mackenzie 2013: 52) are included within the scope of the e-negation, as in (35a). Note, however, that they do not lie within the scope of f^c -negation, as shown in (35b):

- (35) a. The negotiators did not leave the meeting satisfied.
b. *The negotiators failed to leave the meeting satisfied.

Thirdly, given that the Progressive operator (corresponding to the *be ... ing* construction) applies at the Configurational Property, if *fail to* were an operator at the State-of-Affairs layer we would expect (36a) to be grammatical. In fact the correct form is (36b), which arises from both bleached *fail to* and the progressive operator applying to the (f^c) variable:

- (36) a. *The child fails to be impressing the teacher.
b. The child is failing to impress the teacher.

Finally, Mackenzie (2009) observes that bleached *fail to* often occurs in double negative constructions, as in (37a):

- (37) a. This book will not fail to leave a mark on English culture.
 b. *This book will fail to not leave a mark on English culture.

In this type of construction the negation operator is to be found twice, once at the State-of-Affairs layer, expressed in (37a) as *not*, and also at the Configurational Property layer, expressed as *fail to*. Notice from the ungrammaticality of (37b) that, as is to be expected from its hierarchically lower position, in (37a) the negator *fail to* occurs closer to the central predicate *leave* than the negator *not*.

45 of the 1011 languages surveyed in Dryer (2005) use what we may characterize as a negative verb or negative auxiliary, some of which may have derived from verbs like *fail*. One such language is Bemba. Givón (2001: 268) traces the origin of the negative prefix *bulaa-* in Bemba from the compounding of two verbs, the main predicate and a verb with the sense 'avoid' or 'lack':

- (38) a. *uku-bula*
 INF-avoid
 'to avoid'
 b. *uku-boomba*
 INF-work
 'to work'
 c. *n-a-bula* *uku-boomba*
 1SG-PST-AVOID INF-work
 'I avoided working.'
 d. *uku-bulaa-boomba*
 INF-AVOID-WORK (OR INF-NEG-WORK)
 'to avoid work; not to work'
 e. *n-a-bulaa-boomba*
 1SG-PST-NEG-WORK
 'I didn't work, I failed to work.'

In (38c), we may assume that the verb *bula* takes an (f^c) complement; in (38d), in parallel with English *fail to*, it has grammaticalized as an operator and in (38e) is seen as a prefix in a finite verb.

Double negation in English can also be achieved by means of a double occurrence of the negator *not*; the negator closer to the predicate corresponds to (f^c)-negation:

- (39) You cannot not attend your sister's wedding.
 (... (neg poss e_i ; (neg f^c_i ; ... (f^c_i)) (e_i)) ...)

The interaction of modal and negative operators shown in this example is also apparent in the following data from French (personal knowledge); note, too, how in the English glosses the difference is reflected in the realization of Poss as *can* or *may*:

- (40) a. *Jean ne peut pas aimer ça.*
 John NEG can.3SG NEG like.INF that
 'John cannot like that; it's not possible for John to like that.'
 (neg poss e_i : (f_i^c ; ... (f_i^c)) (e_i))
- b. *Jean peut ne pas aimer ça.*
 Jean can.3SG NEG NEG like.INF that
 'John may not like that; it's possible that John will not like that.'
 (poss e_i : (neg f_i^c ; ... (f_i^c)) (e_i))
- c. *Jean ne peut pas ne pas aimer ça.*
 John NEG can.3SG NEG NEG NEG like.INF that
 'John cannot not like that; it's not possible for John not to like that.'
 (neg poss e_i : (neg f_i^c ; ... (f_i^c)) (e_i))

3.5 f^l -negation

Whereas f^c -negation, as we saw in 3.4, applies to a Configurational Property, f^l -negation applies to a single Lexical Property. In English, f^l -negation can apply to nouns or adjectives but not to verbs. In the case of adjectives, it is expressed by the negator *not* or the prefix *non-*, which is specialized in this function; with nouns, it can only be expressed as *non-*:

- (41) a. a non-happy ending
 b. a not happy ending, a not very happy ending⁵
- (42) a. a non-issue
 b. *a not issue

Both types of f -negation differ from e -negation in not triggering an affirmative checking tag:

- (43) a. The story did not come to a happy ending, did it? (e -negation)
 b. The story failed to come to a happy ending, didn't it? (f^c -negation)
 c. The story came to a not (very) happy ending, didn't it? (f^l -negation)⁶
 d. The story came to a non-happy ending, didn't it? (f^l -negation)

5. It seems more idiomatic to insert *very* in this kind of negation. The question then is whether *not* here negates *very* or *very happy*.

6. See Horn (2001: 517) for a distinction between *Kim isn't happy (is she?)* as 'inflected negation' (roughly equivalent to our $e(p)$ -negation) and *Kim is not happy* or *Kim's not happy (isn't she?)* as 'particle negation' (roughly equivalent to our f^l -negation).

A lexical item may be simple or may arise from compounding. In Japanese, certain V-V compounds allow negation to apply either to the entire compound or to one of the component Lexical Properties:

- (44) Japanese (Fukushima 2016)
- a. *Hanako ga odori-tukare-nakat-ta.*
 Hanako NOM dance-get.tired-NEG-PST
 ‘Hanako did not dance and did not get tired.’
 (neg f_i : (f_j : ($\$_i$ |tukar) (f_j): (f_k : ($\$_j$ |odor) (f_k)) (f_j)) (f_i))
- b. ‘Hanako danced and did not get tired.’
 (f_i : (neg f_j : ($\$_i$ |tukar) (f_j): (f_k : ($\$_j$ |odor) (f_k)) (f_j)) (f_i))
- c. ‘Hanako did not dance and got tired.’
 (f_i : (f_j : ($\$_i$ |tukar) (f_j): (neg f_k : ($\$_j$ |odor) (f_k)) (f_j)) (f_i))
- (45) a. *Taroo ga gake-o mi-oros-anakat-ta.*
 Taroo NOM cliff-ACC look-lower-NEG-PST
 ‘Taroo did not look down the cliff.’
 (neg f_i : (f_j : ($\$_i$ |mi) (f_j): (f_k : ($\$_j$ |oros) (f_k)) (f_j)) (f_i))
- b. ‘Taroo looked but not down the cliff.’
 (f_i : (f_j : ($\$_i$ |mi) (f_j): (neg f_k : ($\$_j$ |oros) (f_k)) (f_j)) (f_i))
- (46) *Umi ga hikari-kagayai-nakat-ta.*
 ocean NOM shine-glitter-NEG-PST
 ‘The ocean did not shine and glitter.’
 (neg f_i : [(f_j : ($\$_i$ |hikar) (f_j)) (f_k : ($\$_j$ |kagaya) (f_k))] (f_i))

According to Fukushima (2016), *odori-tukare-nakat-ta* in (44) exemplifies a right-headed compound, i.e. the semantic head of the compound (f_j : ($\$_i$ |tukar) (f_j)) is placed to the right of the modifying element. Right-headed compounds are formed rather freely and when negated allow three interpretations: negation of the entire compound, as in (44a); negation of the head only, as in (44b); negation of the modifier only, as in (44c). Left-headed compounds are formed much less freely and when negated allow two interpretations: negation of the entire compound, as in (45a) or negation of the modifier only, as in (45b); *dvandva* or headless compounds, exemplified in (46), are so rare as to be listable and allow only negation of the entire compound (Kazuhiko Fukushima p.c.).

f^1 -negation can occur in the scope of higher-layer negation, as in (47):

- (47) I will not marry a non-smoker.

3.6 \$-negation

Various forms of lexical derivation yield lexical items, represented here by means of the symbol '\$' (see Smit & van Staden 2007), that in various senses negate the input to the derivation. This is captured by the derivational operator *antn* 'antonymous'.

(48) (antn \$_m|fair) > (\$_n|un-fair)

Among the prefixes involved in \$-negation in English are *un-*, *dis-*, *in-* (and various morphophonologically conditioned variants of this prefix), and *a-*. Another use of the first two of these prefixes, distinct from negation but related to it semantically, is to indicate reverse movement on verbs, as with *un-* and *dis-* in *undress* and *disengage*, otherwise expressed by the prefix *de-* (as in *demilitarize*). Clearly, the effect of these prefixed derivations is very close to ^fl-negation, but as Lieber (2005: 392) points out, ^fl-negation is more 'objective'. Compare (49a) and (49b):

(49) a. a non-professional linguist⁷
b. an unprofessional linguist

While (49a) could be used to describe a person active in linguistics who has not made it their profession, (49b) can only identify a (professional) linguist whose behaviour is not becoming of someone with that profession.

\$-negation shares with ^fl- and ^fc-negation (cf. (43b–d)) that it does not trigger an affirmative checking tag in English:

(50) The story came to an unhappy ending, didn't it/*did it?

\$-negation may occur in the scope of ^fl-negation; the result is often characterized as litotes, as in (51):

(51) He gave a not implausible explanation of his behaviour.
(neg ^fl: (antn \$_i|plausible) (^fl_i))

In Czech (Grygar-Rechziegel 1988), the same marker (the prefix *ne-* on the verb) is used for e(p)-negation, for ^fl-negation and for \$-negation alike. Consider (52) to (53):

(52) *ne-souhlas*
'disagreement, non-agreement'

(53) *ne-profesionální*
'non-professional, unprofessional'

7. De Clercq (2013: 32) refers to this kind of negation as 'degree negation' since negation indicates the ultimate degree of absence: cf. *professional* – *semi-professional* – *non-professional*.

- (54) *Ne-mám rád houb-y.*
 NEG-have.1SG glad mushroom-ACC.PL
 'I don't like mushrooms.'

A sentence like (55) could therefore be interpreted as be analysed as 'He did not agree with me' (e(p)-negation), 'He "non-agreed" with me' (f^l-negation) or 'He disagreed with me' (\$-negation):

- (55) *Ne-souhlasí-l se mnou.*
 NEG-agree-3SG.M.PST.PTCP REFL 1SG.INSTR
 'He did not agree/non-agreed/disagreed with me.'

Whereas in English \$-negation applies only to predicates with a positive meaning (*fair, happy*, etc.), in Czech there is no such restriction, given that *ne-* can also express f^l-negation, cf. *ne-malý* 'big, considerable, lit. not-small', cf. English **unsmall* (cf. De Clercq & Vanden Wyngaerd 2017).

3.7 Zero-quantification

Following Dik's (1997) lead (see Section 2 above), we analyse *no* in such examples as the following as involving zero-quantification, i.e. the application of an operator with the value 'zero' to the Individual, Location, Time, etc. in question:

- (56) a. *No man* is an island. $(\emptyset x_i: (f_i: (\$_i | \text{man}) (f_i)) (x_i))$
 b. I'm going *nowhere*. $(\emptyset l_i)$
 c. *No moment* was wasted. $(\emptyset t_i: (f_i: (\$_i | \text{moment}) (f_i)) (t_i))$
 d. *No reason* was given. $(\emptyset r_i: (f_i: (\$_i | \text{reason}) (f_i)) [\dots] (r_i))$
 e. *No amount* of persuasion helped. $(\emptyset q_i: (f_i: (\$_i | \text{amount}) (f_i)) [\dots] (q_i))$

In these cases the negative element is roughly equivalent to the numeral *zero*: it quantifies over the semantic category involved. This is reflected in the fact that in coordination a sentence containing a zero-quantifier does not behave like a negative one:

- (57) a. I live nowhere and so does he/and he does as well.
 b. *I live nowhere and nor does he/and he doesn't either;

Dutch has a zero-quantifying determiner *geen* 'no', shown in (58):

- (58) Dutch (personal knowledge)
Ik heb twee dochter-s maar geen zoon-s.
 1SG have-PRS.1SG 2 daughter-PL but 0 son-PL
 'I have two daughters but no sons.'

However, in cases of e(p)-negation, where there is an indefinite argument in the Configurational Property, Dutch requires that argument to be marked with the Determiner *geen* too, rather than using the normal expression of e(p)-negation, the adverb *niet*:

- (59) Dutch (personal knowledge)
- a. *Ik heb het geld niet.*
 1SG have.PRS.1SG DEF money NEG
 'I don't have the money.'
- b. *Ik heb geen geld.* (**Ik heb geld niet.*)
 1SG have.PRS.1SG 0 money
 'I don't have any money.'

The fact that (59b) does not involve zero-quantification is apparent from examples like (60), where *niet* (and not *geen*) is used in the second (truncated) clause:

- (60) *Ik heb geen geld en mijn vrouw ook niet/*geen.*
 1SG have.PRS.1SG 0 money and my wife also NEG/0
 'I don't have any money, nor does my wife.'

Furthermore, the negation in (59b) must have higher scope than just the Individual, as it licenses NPIs, such as *hoeven* 'need' in (61):

- (61) *Ik hoef geen geld te hebben.*
 1SG need.PRS.1SG 0 money CJ have
 'I don't need to have any money.'

So we must conclude that not all expressions of negation that are realized on the noun phrase are cases of zero-quantification; they can equally well be the expression of e(p)-negation. The extent to which languages apply this strategy differs widely, with languages like Dutch, employing this option frequently, representing one extreme, and languages like Scottish Gaelic (personal knowledge), illustrated in (62), not allowing this option at all, representing the other extreme.

- (62) *Chan eil airgead agam.*
 NEG COP.PRS.DEP money at.1SG
 'I have no money.' (lit. 'I don't have any money.')

A further difference between zero-quantification and e(p)-negation is observable in the relation between the Representational and Interpersonal Levels. Whereas e(p)-negation is associated with Focus or Contrast in the Communicated Content, this is not necessarily true of zero-quantification. Consider the following contrast (Horn & Wansing 2016):

- (63) a. In no clothes does Robin look good.
 b. In no clothes Robin looks good.

In (63a), *in no clothes* is Focus, appearing in clause initial position and triggering subject-verb inversion. In (63b), however, *in no clothes* is neither Focus nor Contrast; the Focus is on *good*.

Finally, zero-quantification can occur within the scope of higher-layer negation:

- (64) We never do things for no reason.

3.8 Summary

We have observed the possibility of negation occurring at each of the layers of the Representational Level. At all but the lowest layers, negation takes the form of the operator ‘neg’. Only at the lowest layers does negation show up as zero-quantification (an option not present in all languages) or as derivation (in the case of negative lexical items). An overview of the various types of negation is shown in Table 2, which makes proposals for naming the different types.

Table 2. Types of negation at the Representational Level

Representational Level	p	ep	e	f ^c	f ^l	\$	x, l, t, r, q
	Disagreement	Co-negation	Non-occurrence	Failure	Local negation	Antonymy	Zero-quantification

4. Negation at the Interpersonal Level

The various layers at the Interpersonal Level, too, allow negative operators. Negative operators at this level do not express negative meaning in the narrow sense. The layers of the Interpersonal Level are actional in nature, and concern the actions that the current speaker is carrying out at the moment of speaking. A speaker cannot at the same time carry out an action and negate that he/she is doing so, so the negative categories at this level express other shades of negativity that will be dealt with layer by layer below.

4.1 A-negation: Rejection

Hengeveld and Mackenzie (2008: 148–149) make a distinction between propositional and actional *yes* and *no*. Propositional *yes* and *no* fill in the truth value of a Propositional Content that is being questioned:

- (65) A. Did John go home?
B. No (he didn't)/Yes (he did).

Actional *yes* and *no* challenge Discourse Acts executed by the interlocutor. Examples are given in (66)–(67):

- (66) A. Go home!
B. No!/Forget it!/Get lost! (I don't accept your order.)
- (67) A. Go home!
B. Okay! (I accept your order.)

The rejection in (66B) challenges the imperative speech act in (66A). Speaker B considers that speaker A is not in a position to tell him/her what to do. (67B), on the other hand, is an acceptance of (67A).

As (66B) shows, there are various options for realizing the rejecting Act. A rejecting Act is different from a negated Propositional Content, in that several of these options are not available for propositional *no*:

- (68) A. Did Peter go home?
B. No!/*Forget it!/*Get lost!

Similarly, *okay* in (67B) can only be used as actional *yes*, not as propositional *yes*:

- (69) A. Did Peter go home?
B. *Okay!

Actional *no* is thus a rejecting Act, which may be represented as in (70) (see Hengeveld & Mackenzie 2008: 149):

- (70) (A₁: no (A₁))

4.2 F-negation: Prohibition & co.

Lyons (1977), Searle and Vanderveken (1985) and Dik (1997) all consider the following examples to be cases of illocutionary negation:

- (71) I do not order you to go.
(72) I do not promise you to come.

A problem with this analysis is that (71)–(72) are not performative, while their positive counterparts are. This can be demonstrated through the standard test in which the adverb *hereby* is added to the expression:

- (73) a. I hereby order you to go.
 b. *I hereby do not order you to go.
- (74) a. I hereby promise you to come.
 b. *I hereby do not promise you to come.

The ungrammaticality of (73b) and (74b) shows that these are not performative utterances, hence the negation on these sentences cannot be illocutionary negation. These utterances rather contain a negated State-of-Affairs (cf. Section 3.3).

There are, however, illocutions with a negative value. The most common ones are the prohibitive illocution and the dishortative illocution. These are illustrated in (75) and (76):

- (75) Tauya
Yate-zatene!
 go-PROH.SG
 ‘Don’t go.’ (MacDonald 1990: 213)
- (76) Kamaiura
T=a-ha-uma=n.
 HORT=1SG-GO-NEG.HORT=HORT
 ‘Let me not go.’ (Seki 2000: 333)

The illocutionary markers in (75) and (76) are dedicated expressions of the prohibitive and dishortative illocutions, that is, they are not composed of the corresponding imperative or hortative marker combined with a regular negative marker. In this sense they may be interpreted as negative illocutions, not as negated illocutions.

Negative illocutions like these may be represented as in (77)–(78), where abstract illocutionary predicates occupy the head position of the illocution (F) (see Hengeveld & Mackenzie 2008: 70–76):

- (77) (F_I: PROH (F_I))
 (78) (F_I: DISHORT (F_I))

4.3 C-negation: Denial

In FDG a Communicated Content (C) is a message that is communicated by a speaker in a Discourse Act, as opposed to a Propositional Content (p), which is a unit of thought that is not necessarily communicated but can be talked about. Given this difference, a Communicated Content is a unit at the Interpersonal Level, while a Propositional Content is a unit at the Representational Level.

A Communicated Content cannot be negated as such, as once it is produced it exists, but an interlocutor can deny its appropriateness. An example of this is given in (79):

- (79) A: You hate me!
B: It's not that I hate you, it's just that I think you are a bit annoying.
B': ??It's not true that I hate you, it's just true that I think you are a bit annoying.
B'': I DON'T (hate you).
B''': I don't "hate you".

In (79B) the message expressed in (79A) is denied, and an alternative for it is offered. This differs from the negation of a Propositional Content, discussed in Section 3.1, where the truth of a proposition is at stake. As (79B') shows, a paraphrase in terms of truth values is inappropriate using the same construction. To express propositional negation in this context, (79B'') has to be used. An alternative way of expressing the first part of (79B) is (79B'''), where the speaker accompanies the utterance with a gesture reminiscent of quotation marks written in the air.

In (79B) denial is expressed periphrastically using the expression *it is not that*. In similar contexts double negation can serve the same purpose, as illustrated in (80B):

- (80) A. I have the feeling you don't like me.
B. I don't not like you.

A further frequent construction used to express this kind of negation is illustrated in (81):⁸

- (81) Not that I regret any of it!

In this construction the copula present in (79B) is suppressed, which may be taken as a sign of fixation of the construction.

8. See e.g. Schmid (2013) for constructions of this type.

In Spanish, denial constructions exhibit the special property that they are expressed through a construction with the subjunctive, which is used here to express that the information given is presupposed. An example is (82):⁹

- (82) *No es que me hayan engañado*
 NEG COP.IND.PRS.3SG CONJ 1SG.ACC AUX.SBJV.PRS.3SG deceive-PST.PTCP
a mí, es que han
 ACC.DEF 1SG.OBL COP.IND.PRS.3SG CONJ AUX.IND.PRS.3SG
engañado a todo el mundo.
 deceive-PST.PTCP ACC.DEF all DEF world
 ‘It’s not that they have deceived ME, it’s that they have deceived EVERYBODY.’

This contrasts with propositional negation, which does not trigger the subjunctive, as illustrated in (83):

- (83) A. *Te han engañado.*
 2SG.ACC AUX.IND.PRS.3SG deceive-PST.PTCP
 ‘They have deceived you’
 B. *No, no me han engañado.*
 NEG NEG 1SG.ACC AUX.IND.PRS.3SG deceive-PST.PTCP
 ‘No, they have NOT deceived me.’

Denial may be represented as an operator at the layer of the (denied) Communicated Content, as in (84):

- (84) $(A_1: [(F_1: \text{DECL } (F_1)) (P_1)_s (P_1) (\text{neg } C_1: [- \text{ I don't like you } -] (C_1))] (A_1))$

4.4 T-negation: Metalinguistic negation

An Ascriptive Subact T captures an act of predication executed by a speaker. The appropriateness of a Subact of Ascription can always be questioned or denied. In the latter case, we speak of T-negation, called metalinguistic negation in Horn (1985). Examples illustrating this type of negation are illustrated in (85) and (86):

- (85) He is not “happy”, he is ecstatic.
 (86) She is not “pretty”, she is gorgeous.

Example (85) is appropriate in a context in which the previous speaker has ascribed the property *happy* to the subject. This speaker is then corrected by the current

9. <https://www.huffingtonpost.es/2018/02/01/pablo-iglesias-va-a-ser-difcil-que-leonor-sea-jefe-del-estado_a_23350035/>

speaker who characterizes this ascription as inappropriate and provides an alternative. The same reasoning applies to (86). Metalinguistic negation may have the same surface morphosyntactic manifestation as e(p)-negation, but behaves quite differently. Example (86) above can only be interpreted as metalinguistic negation, while (87) can only be e(p)-negation:

(87) She is not pretty, and this has bothered her all her life.

Metalinguistic negation can be combined with other types of negation, for instance with antonymy, as in (88):

(88) She is not “unhappy”, she is depressed.

Metalinguistic negation of this type may be represented as an operator at the layer of Ascriptive Subact, as in (89):

(89) $(C_1; [(neg T_1)...] (C_1))$

4.5 R-negation: Metalinguistic negation

A Referential Subact (R) captures an act of reference executed by the speaker. As in the case of Ascriptive Subacts, the appropriateness of the reference can be questioned or denied. The following example illustrates this:

(90) He is not “Mr Bergoglio”, he is His Holiness the Pope.

Example (90) is an identificational construction, which in FDG is treated as a construction based on two Subacts of Reference (Hengeveld & Mackenzie 2008: 193). In (90) one Subact of Reference ‘Mr Bergoglio’ is replaced by a more appropriate one ‘His Holiness the Pope’. This case is thus entirely parallel to the cases in 4.4, the only difference being that the appropriateness of a Subact of Reference is denied in (90), while the appropriateness of a Subact of Ascription is denied in (85)–(86). The similarity is also visible when we compare (90) to a parallel case of e(p)-negation:

(91) He is not Mr Bergoglio, Mr Bergoglio has moved to another place.

Another example of this type of negation is given in Huddleston & Pullum (2002: 788):

(92) She didn’t have lunch with “your old man”; she had lunch with your father.

Metalinguistic negation of this type may be represented as an operator at the layer of the Referential Subact, as in (93):

(93) $(C_1; [(neg R_1)...] (C_1))$

4.6 Negation at IL – Summary

In this section we have shown that negation, when this notion is taken in a wide sense, occurs at each of the layers of the Interpersonal Level, just as it did at the Representational Level. An overview of the various types of negation is shown in Table 3, which also provides distinct labels for each category.

Table 3. Types of negation at the Interpersonal Level

	Rejection	Prohibition	Denial	Metalinguistic Negation	Metalinguistic Negation
Interpersonal Level	A	F	C	R	T

5. Double occurrences of negation

Double occurrences of negation in the same sentence may be the result of negative concord or may be instances of true double negation. In the latter case, there is a double occurrence of neg operators at the Interpersonal and Representational Levels. In the preceding sections, we have observed several such cases. The pragmatic and/or semantic effect of double negation is often to cancel the negativity (*duplex negatio affirmat*) and is frequently exploited for interpersonal purposes. As Horn (2001: 360) remarks, one reason for calling someone, for example, *not unattractive* rather than *attractive* is to convey “a strong negative proposition while observing the amenities of civilized social interchange”. What the hearer understands in practice is that the speaker finds the person in question rather plain.

Here are the instances of double negation we have remarked on:

i. Negative Communicated Content – Negative Episode or State-of-Affairs

(94) A. I have the feeling you don't like me.

B. I don't not like you.

(neg C_1 : (... [(p_1 : (neg e_1 : [(e_1) ... (e_1)] (e_{p_1})) (p_1))] ... (C_1))

(neg C_1 : (... [(p_1 : (e_{p_1} : (neg e_1) (e_{p_1})) (p_1))] ... (C_1))

ii. Negative Ascriptive Subact – Derived Negative Lexical Item

(95) She is not UNHAPPY, she is DEPRESSED.

(neg T_1 : (... (antn $\$_n$ | \blacklozenge) ... (T_1))

iii. Negative Propositional Content – Negative Episode or State-of-Affairs

(96) Turkish

(Ben) bugün maç-a git-me-yecek değil-im.

(1SG) today match-DAT go-NEG-FUT NEG.COP-1SG

'I will not not go to the match today.' (= 'It is not true that I will not go to the match today.') (Kornfilt 1997: 126)

(neg p_1 : (neg ep_1 : [(e_1) ... (e_1)] (ep_1)) (p_1))(neg p_1 : (ep_1 : (neg e_1) (ep_1)) (p_1))

iv. Negative State-of-Affairs – Negative Configurational Property

(97) This book will not fail to leave a mark on English culture.

(... (neg e_1 : (neg f_1 : ... (f_1)) (e_1) ...)

v. Negative State-of-Affairs or Configurational Property – Negative Lexical Property

(98) I will not marry a non-smoker.

(... (neg e_1 : (f_1 : [... (neg f_1) ...] (f_1)) (e_1) ...)(... (e_1 : (neg f_1 : [... (neg f_1) ...] (f_1)) (e_1) ...)

vi. Negative Lexical Property – Derived Negative Lexical Item

(99) He gave a not implausible explanation of his behaviour.

(neg f_1 : (antn $\$_n$ | \blacklozenge) (f_1))

vii. Any higher Layer – Zero-quantification

(100) We never do things for no reason.

(neg v_1 : ... (f_1 : [... (\emptyset { x_1 , l_1 , t_1 , m_1 , r_1 , q_1 } ...] (f_1)) ... (v_1))

This is just a selection of the logically possible combinations of negation at different layers, but it serves to show that an approach is called for in which negation is seen as a phenomenon that applies at all interpersonal and representational layers identified.

In principle, triple or indeed multiple negation should be possible. In this vein, we propose (101a), inspired by De Clercq (2013: 33), for discussion, for which we may suggest (101b) as an analysis:

(101) a. It's not that she isn't NOT unhappy.

b. (neg C_1 : [... (neg e_i : (f_i : [(neg f_i : (antn $\$_n$ | happy)) (f_i)) ($1x_i$)_U] (f_i)) (e_i) ...] (C_1))

6. Conclusion

By way of conclusion, Table 4 now summarizes all types of negation described above.

Table 4. Types of negation in FDG

Interpersonal Level	Rejection A	Prohibition F	Denial C	Metalinguistic Negation R	Metalinguistic Negation T		
Representational Level	p	ep	e	f ^c	f ^l	§	x
	Disagreement	Co-negation	Non-occurrence	Failure	Local negation	Antonymy	Zero-quantification

We hope to have shown in this chapter that there is evidence for the existence of all of these types of negation, and that their existence helps to explain multiple occurrences of negation in single utterances. At the same time, the chapter has given further support to the distinctions made between levels and layers in FDG, as negation has been found to be relevant in different ways to all of these.

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