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Functional Discourse Grammar

A brief outline

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1. Introduction

This volume brings together a number of papers using the theory of Functional Discourse Grammar (FDG) to analyse and explain a number of specific constructions or phenomena in a range of languages. In addition to applying the theory to the topics in question, however, these papers aim to contribute to the further development of the theory by modifying and extending it on the basis of new linguistic evidence, thus providing the latest state-of-the-art in FDG. The volume as a whole does more than this, as separately and together the papers collected here aim to demonstrate how FDG, with its unique architecture, can provide new insights into a number of issues and phenomena that are currently of interest to theoretical linguistics in general. We therefore hope that this volume will be useful to a wide circle of linguists, irrespective of their theoretical persuasion.

The seven chapters in this volume are all based on papers presented at the fourth biennial Conference on Functional Discourse Grammar, held at the University of Vienna in 2016. The fact that this was only the fourth biennial conference indicates that FDG is a relatively young theory; and indeed, it was presented as a complete model for the first time in Hengeveld & Mackenzie's (2008) landmark publication. The theory is, however, part of a much older tradition, having been gradually developed from Simon Dik's (1997a,b) Functional Grammar, and adopting its predecessor's underlying principles as well as its typological orientation.

In what follows, we will first discuss the basic assumptions underlying the theory of FDG, as well as the theory's position in the functional paradigm (Section 2). We will then present the distinctive features and overall organization of the theory (Section 3), before providing a broad indication of how the theory can be used to model two important linguistic phenomena: transparency (Section 4) and language change (Section 5). Finally, Section 6 will briefly introduce the seven chapters.

2. A general characterization of the model

Functional Discourse Grammar, like its predecessor Functional Grammar, is firmly rooted in the functional paradigm, in that it views language first and foremost as a means of communication, and regards the form of language as emerging from its communicative function. Within the functional paradigm, however, FDG takes a moderate stance in that it recognizes that, although shaped by use, and as such subject to constant change, “in synchronic terms the grammar of a language is indeed a system, which must be described and correlated with function in discourse” (Butler 2003: 30). FDG thus “seeks to reconcile the patent fact that languages are structured complexes with the equally patent fact that they are adapted to function as instruments of communication between human beings” (Hengeveld & Mackenzie 2008: ix; cf. Dik 1997a: 3); using Van Valin’s (1993) terminology, FDG can be characterized as a ‘structural-functional’ theory of language.

Like all functional approaches, what is at the heart of FDG is the relation between function and form. More specifically, FDG takes a “function-to-form” approach, taking as its input a speaker’s communicative intentions, which, through processes of Formulation and Encoding (see below), lead to a specific linguistic form. At the same time, however, FDG is “form-oriented”, in that it only seeks to account for those pragmatic and semantic phenomena that are reflected in the morphosyntactic and phonological form of an utterance (e.g. Hengeveld & Mackenzie 2008: 39). Finally, unlike most functional approaches, FDG makes use of a sophisticated formalism to allow for a concise and precise representation of both the functional and the formal properties of languages. Together, these characteristics provide FDG with its unique position in what Butler & González García (2014) describe as “Functional-Cognitive space”.

3. The Architecture of FDG

3.1 Distinctive features and overall organization

So how are these general characteristics reflected in the organization of the model? First of all, the “function-to-form” approach is mirrored in the model’s top-down organization, which starts with the speaker’s intention and then works its way down to articulation. In this way, “FDG takes the functional approach to language to its logical extreme”, as pragmatics is taken to govern semantics, pragmatics and semantics to govern morphosyntax, and pragmatics, semantics, and morphosyntax to govern phonology (Hengeveld & Mackenzie 2008: 13). The privileged role of pragmatics is further reflected in the fact that FDG takes the Discourse Act as

its basic unit of analysis. This means that FDG can accommodate not only regular clauses, but also units larger than the clause, such as complex sentences, and units smaller than the clause, such as holophrases.

In order to represent all linguistic information relevant for the formation of a linguistic expression, FDG analyses Discourse Acts in terms of independent pragmatic, semantic, morphosyntactic and phonological modules, which interact to produce the appropriate linguistic forms (see below). Together, these four levels, and the primitives feeding into these levels, form the Grammatical Component of the model (the FDG proper). This component, however, does not operate in isolation, but forms part of an overall model of verbal communication. Thus, in accordance with the basic principles of the functional approach, the Grammatical Component interacts with a Contextual Component, containing non-linguistic information about the immediate discourse context that affects the form of a linguistic utterance (see also Connolly 2007, 2014; Cornish 2009; Alturo et al. 2014; Hengeveld & Mackenzie 2014). Finally, in order to capture the interaction between the production of a linguistic expression and the speaker's communicative intentions, the Grammatical Component also interacts with a conceptual component, which contains the prelinguistic conceptual information relevant for the production of a linguistic expression, and which forms the driving force behind the Grammatical Component (see e.g. Connolly 2017). A general outline of the model is given in Figure 1.

As we can see from Figure 1, the Grammatical Component consists of, on the one hand, several types of primitives (given in boxes), and, on the other hand, of four levels of analysis, capturing the discourse-pragmatic, semantic, morphosyntactic and phonological properties of a linguistic expression.

Primitives can be regarded as the building blocks needed for the construction of an utterance: they are ready-for-use elements that together make up the long-term linguistic knowledge of the speaker of a language. Primitives come in three kinds. First, there are the structuring primitives, frames and templates, which define the possible combinations of elements at each level. The second set of primitives consists of the relevant linguistic elements at each level: lexemes and grammatical morphemes. The third set of primitives contains operators, which represent grammatical information at each of the levels, e.g. identifiability of a referent at the Interpersonal Level, and number, tense and aspect at the Representational Level.

In constructing a linguistic utterance, the speaker first selects the appropriate primitives: first frames, then operators and modifiers. These subsequently feed into the operations of Formulation (for the two higher levels) and Encoding (for the two lower levels), which convert the input into representations at the four levels of analysis. Each of these representations consists of a number of hierarchically structured layers, each representing a particular kind of linguistic unit. The four levels and their internal structure will now be discussed in some detail.

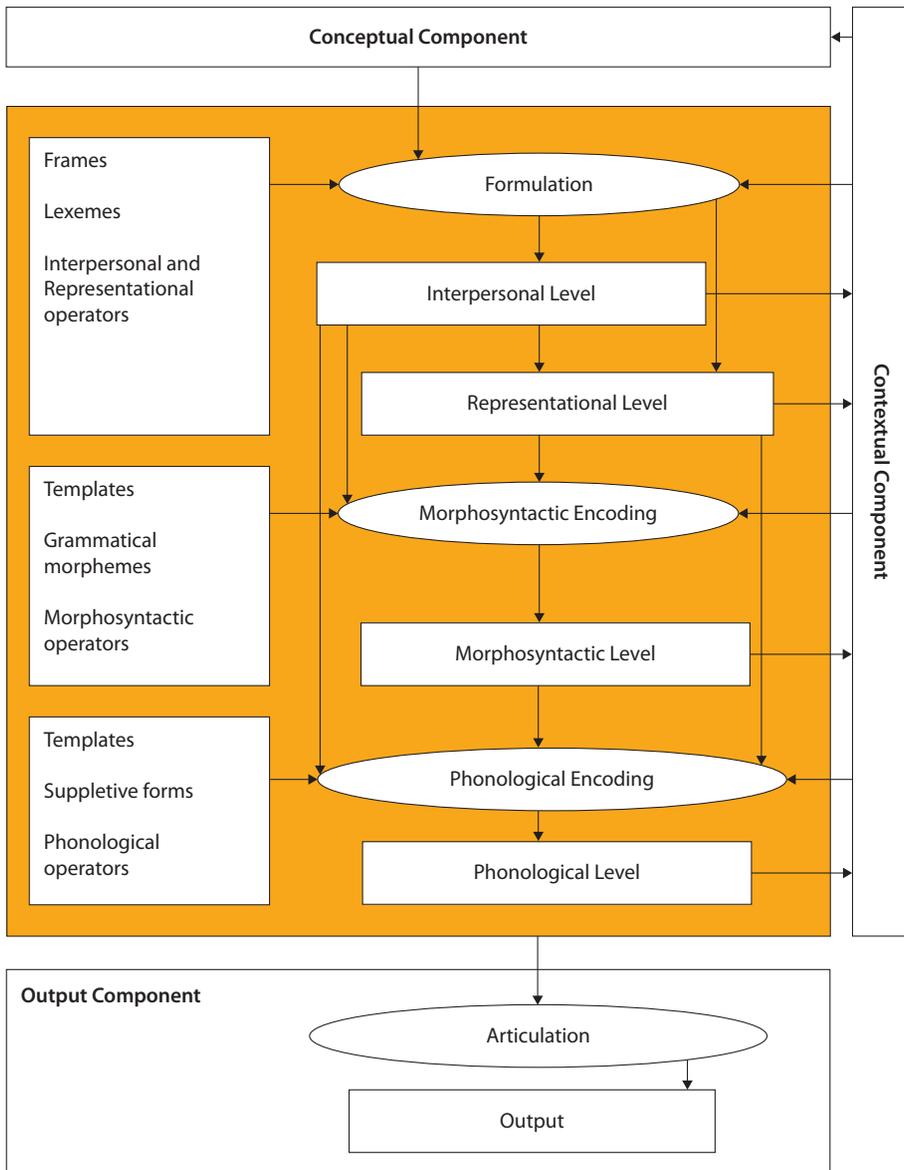


Figure 1. General layout of FDG (based on Hengeveld and Mackenzie 2008: 13)

3.2 Four levels of analysis

The highest level of representation is the Interpersonal Level (IL), which deals with “all the formal aspects of a linguistic unit that reflect its role in the interaction between the Speaker and the Addressee” (Hengeveld & Mackenzie 2008: 46). The most inclusive layer at this level is the Move, represented by the variable *M*, which describes the entire segment of discourse relevant at this level. The Move consists of one or more Discourse Acts (*A*), which together form its (complex) Head. Each Discourse Act in turn consists of an Illocution (*F*), the Speech Participants (P_S and P_A) and a Communicated Content (*C*). Finally, within the Communicated Content, one or more Subacts of Reference (*R*) and Ascription (*T*) are evoked by the Speaker. Each of these layers is provided with a slot for operators and modifiers.

By way of illustration, consider the sentence in (1):

- (1) a. The student supposedly threatened a teacher.
 b. (M_1 : (A_1 : [$(F_1$: DECL (F_1)) (P_{1S}) (P_{1A}) (C_1 : [(T_1) (+id R_{1Top}) (-id R_{1Foc})] (C_1 : supposedly (C_1))] (A_1)) (M_1))

In (1) we find a Move, consisting of a single Discourse Act, which in turn consists of a declarative Illocution, the two Speech Participants, and a Communicated Content. The Communicated Content consists of a Subact of Ascription, evoking the property ‘threaten’, and two Subacts of Reference, evoking the entities described as *the student* and *a teacher*. Both these Subacts are specified by an operator: ‘+id’ in the case of R_p , indicating that the Speaker assumes the entity in question to be identifiable for the Addressee (and triggering the use of the definite article), and ‘-id’ in the case of R_p , indicating that the Speaker assumes the entity in question to be unidentifiable for the Addressee, (and triggering the use of the indefinite article). Moreover, the first Subact of Reference is assigned the pragmatic function of Topic, indicating that the entity in question is related to the ongoing discourse, triggering placement in initial position; the second Subact of Reference is assigned the pragmatic function Focus, indicating that this Subact provides the new, or most salient, information within the Discourse Act, resulting in prosodic prominence. Finally, the Communicated Content is modified by the hearsay adverb *supposedly*, indicating that the speaker is relaying information obtained from someone else. This adverb is the only lexical element specified at the Interpersonal Level, because it has an interpersonal (Speaker-oriented) function, as opposed to the other lexical elements in example (1a), which have a descriptive function.

The Representational Level (RL) deals with the semantic aspects of a linguistic unit, i.e. those aspects of a linguistic expression that reflect the way in which language relates to the real or imagined world it describes. The units at this level represent the different linguistically relevant types (or orders) of entities in the extra-linguistic

world (Lyons 1977: 442–447; Hengeveld & Mackenzie 2008: 131). The highest layer at this level is that of the Propositional Content (p), which represents a mental construct which can be evaluated in terms of its truth. The Propositional Content consists of one or more Episodes (ep), i.e. sets of States-of-Affairs that are coherent units in terms of time, space and participants. Each State-of-Affairs (e) is, in turn, characterized by a Configurational Property (f^c), consisting typically of a Verbal Property (f) and one or more Individuals (x). These Individuals are typically headed by a Nominal Property.

Consider example (2):

- (2) a. Yesterday an aggressive student threatened the teacher.
 b. (p_i: (past ep_i: (e_i: (f_i^c: [(f_i: threaten (f_i) (1x_i: (f_i: student (f_i) (x_i)): (f_k: aggressive (f_k) (x_i))_A (1x_j: (f_i: teacher (f_i) (x_j))_U] (f_i^c)) (e_i) (ep_i)): (t_i: yesterday (t_i) (ep_i)) (p_i))

This sentence consists of a Propositional Content p_i, containing a single Episode ep_i. This Episode contains a single States-of-Affairs e_i, headed by a Configurational Property f_i^c, consisting of the Verbal Property f_i (*threaten*) and two Individuals x_i and x_j, each restricted by a nominal head (*student* and *teacher*, respectively). The sentence contains two modifiers: the time modifier *yesterday*, modifying the Episode, and the adjectival modifier *aggressive*, modifying the first argument x_i. In addition, there are two types of operator: the past tense operator ‘past’ at the layer of the Episode, and the singularity operator ‘1’ specifying both Individuals. Finally, the two participants are assigned the semantic roles of Actor and Undergoer, respectively.

This is where the operation of Formulation ends; the next two levels are levels of Encoding, where no additional meaning components can be added. The first of the levels of Encoding, the Morphosyntactic Level (ML), accounts for all the linear properties of a linguistic unit, both with respect to the structure of sentences, clauses and phrases and with respect to the internal structure of complex words. The largest unit of analysis at this level is that of the Linguistic Expression (Le), which typically contains one or more Clauses (Cl). Clauses, in turn, may consist of one or more Phrases and Words, as well as of other Clauses. Phrases may contain one or more Words, as well as other Phrases or Clauses. Words, finally, consist of one or more Morphemes, which come in three types: Stems, i.e. Morphemes with lexical content that can be the sole element within a Word; Roots, i.e. Morphemes with lexical content that can only occur in combination with another Stem or Root; and Affixes, which lack lexical content and can only be used in combination with a Stem or Root. Phrases, Words, Stems and Roots are further categorized on the basis of the kind of head they have. Thus there are, for instance, Verbal Phrases (Vp), Nominal Phrases (Np) and Adjectival Phrases (Ap), as well as Verbal Words (Vw), Nominal Words

(Nw) and Adjectival Words (Aw). In addition, there are Grammatical Words (Gw), which typically correspond to operators at the levels of Formulation. Finally, it is at this level that the syntactic functions Subject and Object are assigned. A morpho-syntactic analysis of the sentence in (3a) is given in (3b):

- (3) a. The student threatened a teacher.
 b. (Le_i: (Cl_i: [(Np_i: [(Gw_i: the (Gw_i)) (Nw_i: (Ns_i: student (Ns_i)) (Nw_i))] (Np_i))_{Subj}
 (Vp_i: (Vw_i: [(Vs_i: threaten (Vs_i)) (Aff_i: past (Aff_i))] (Vw_i)) (Vp_i))
 (Np_j: [(Gw_j: a (Gw_j)) (Nw_j: (Ns_j: teacher (Ns_j)) (Nw_j))] (Np_j))_{Obj} (Cl_i) (Le_i))

Finally, the Phonological Level receives its input from the other three levels.¹ The largest phonological unit is the Utterance (v), which consists of one or more Intonational Phrases (IP), which, in turn, consist of one or more Phonological Phrases (PP). Each Phonological Phrase consists typically of one or more Phonological Words (PW), which can be further analysed in Feet (F) and Syllables (s). A simplified phonological representation of example (4a) is given in (4b). This representation contains one operator, 'f', indicating a falling intonation at the layer of the Intonational Phrase (triggered by the presence of a Declarative Illocution at the IL).

- (4) a. The teacher complained.
 b. (f IP_i: [(PP_i: / ðə'ti:tʃə / (PP_i)) (PP_j: / kəm'pleɪnd / (PP_j))] (IP_i))

3.3 Relations between the levels

It will be clear that languages are characterized by default relations between the layers postulated at the four levels. Discourse Acts, for instance, tend to correspond to Propositional Contents at the RL, Clauses at the ML and Intonational Phrases at the PL. Similarly, Subacts of Reference typically correspond to Individuals at the RL, Nominal Phrases at the ML and Phonological Phrases at the PL, while Subacts of Ascription tend to correspond to Verbal or Adjectival Properties at the RL, expressed as Verbal and Adjectival Words at the ML and Phonological Words at the PL.

The reason for distinguishing different levels is that there are also non-default relations. For instance, as already pointed out, Discourse Acts need not be expressed as Clauses, but may consist of a single Word, e.g. *Congratulations*, or Phrase, e.g. *by bus*. Nor do all Subacts of Ascription correspond to Verbal or Adjectival Properties at the RL, and Verbal and Adjectival Words at the ML: non-referential Nominal Phrases (e.g. predicatively-used NPs like *a teacher* in *My brother is a teacher*), corresponding

1. This is not always the case: distinctions made at the Interpersonal Level, for instance, may be directly expressed at the Phonological Level, as in the case of interjections and vocatives.

to Individuals at the RL, are nevertheless analysed as Subacts of Ascription at the IL, since they are used to ascribe a property rather than to evoke a referent.

In these cases the relations between the levels, although of a non-default nature, hold between single elements at all of the four levels. This, however, is not always the case: one-to-many and many-to-one relations also exist. These will be discussed in the next section.

4. Transparency

Transparency is generally defined as a one-to-one relation between meaning and form (e.g. Langacker 1977: 110; Carstairs-McCarthy 1987: 13; Dik (1988) uses Haiman's (1980) notion of isomorphism). Different types of transparency have been distinguished, depending on which domain, or level, of description they apply to. Semantic transparency, for instance, is often defined in terms of semantic compositionality, i.e. the degree to which the overall meaning of a phrase or clause is predictable from the meanings of its component parts; non-compositional expressions like idioms, for instance, are regarded as being non-transparent. Morphosyntactically, non-transparency may manifest itself in the form of redundancy; in the case of phrasal agreement, for instance, a semantic feature (e.g. number) is coded twice. Finally, phonological non-transparency can be found in contractions and reduced forms, as in the fusion of Spanish *de* 'of, from' with the masculine singular article *el* into the single element *del*. A further example is verbal inflection, where person, number, tense, aspect and mood features may be fused in one suffix, as in the verb *agrediu* in the following example from Portuguese.

- (5) *O estudante agrediu o professor.*
 the.M student attack.IND.PST.PFV.3SG the.M teacher
 'The student attacked the teacher.'

As shown in a number of publications (Hengeveld 2011a; Leufkens 2013, 2015; Gomes Camacho & Goreti Pezatti 2017; Hengeveld & Leufkens 2018), the organization of FDG makes it possible to define transparency relations more precisely, by capturing them in terms of the way in which units at the four levels of representation correspond to each other. In other words, an expression is transparent when each of the units it contains corresponds to exactly one layer at each level of representation, i.e. when there is a one-to-one relation between units at each of the four levels. This means that non-transparency (or opacity) may indeed result from a lack of one-to-one relationships between meaning and form, i.e. between Formulation and Encoding, but may also result from mismatches within Formulation, i.e. between

the Interpersonal and Representational Levels, and within Encoding, i.e. between the Morphosyntactic and Phonological Levels.

In addition, different categories of non-transparency can be distinguished by looking more closely at the nature of the mismatch between two levels (Leufkens 2015: 16–20). Apart from redundancy and fusion, which we mentioned above, there is, for instance, discontinuity, i.e. cases where a single unit at a higher level is expressed as two subcomponents at a lower level. This is what we find in the case of raising, where an argument of an embedded State-of-Affairs at RL is expressed as the subject of a clause corresponding to the matrix State-of-Affairs. An example is given in (6b), where the Actor argument of the State-of-Affairs ‘the student threatened a teacher’ is realized as the subject of the matrix verb *seem*; the embedded State-of-Affairs, in other words, is syntactically realized as two incomplete components.

- (6) a. It seems that *the student* has threatened a teacher.
 b. *The student* seems to have threatened a teacher.

Finally, note that the non-raised construction in (6a) displays another type of non-transparency, namely that of ‘form-based-form’, whereby an element at a lower level does not correspond to any higher-level unit (a null-to-one relation). This type of non-transparency is found in the case of dummy-elements, like *it* in (6a), which is inserted at the ML to fill the obligatory subject position, but which does not correspond to any unit at the IL or RL.

As various studies have shown, languages differ with regard to both the kind and the number of non-transparent features they contain (Kusters 2003; Hengeveld 2011a; Leufkens 2015); as a result, some languages may be characterized as more transparent than others. The FDG approach to transparency makes it possible to order transparent and opaque features into an implicational transparency hierarchy, and, consequently, to rank languages on a transparency scale.

5. Language change

Systematic changes in the use of a particular constructions in a language can lead to changes in the grammatical system of that language. First, whether inspired by functional need or as a result of language internal factors, new patterns emerge in discourse, leading to non-default relations in the grammar. Subsequently, the grammar may adapt itself to the new situation, establishing a new, conventionalized relation between function and form. As is well-known, these processes may concern both the lexicon and the grammar of a language. Without going into much detail, what follows gives an impression of how these processes can be captured in FDG.

The process of grammaticalization, which is generally assumed to be unidirectional, can be defined as the emergence of a new operator (from a lexeme or phrase). Once grammaticalized, the item in question can develop further, moving in an outward direction to the next layer (e.g. Hengeveld 2011b; Dall’Aglio Hatther & Hengeveld 2016; Giomi 2017; Olbertz & Honselaar 2017). A good example is the development of English *will* (Bybee, Pagliuca & Perkins (1991); see also Hengeveld 2011b), which starts as a lexical verb, then first changes into an indicator of obligation and intention, subsequently into a posterior marker, from there into a future marker, and finally into a marker of supposition (a form of inference, as in *Peter will be home by now*). Table 1 shows how this development can be charted at the Representational Level.

Table 1. The development of English *will* in FDG

inference	future	posteriority	obligation / intention	lexical verb (OE <i>willan</i>)
evidentiality	absolute tense	relative tense	participant-oriented modality	verbal property
p	ep	e	f ^c	f

In this process, the change of function does not necessarily go hand in hand with the change of form. This means that we may have intermediate stages in which a lexical item fulfils a grammatical function without its form being fully grammaticalized (e.g. Boye & Harder 2012; Traugott & Trousdale 2013; Hengeveld, Narrog & Olbertz 2017). This is accounted for in Functional Discourse Grammar by assuming the existence of lexical operators (Keizer 2007; Olbertz 2016). The relation between the ongoing process of grammaticalization of meaning and form in FDG is discussed in Hengeveld (2017).

On the lexical side, the clearest case of language change is that of lexicalization proper, i.e. a new lexeme arising from a fixed phrase. Well-known English examples are complex prepositions formed on the basis of prepositional phrases (*in front of*, *on top of*). Other examples include various kinds of fixed expressions, both representational (e.g. *bed-and-breakfast*) and interpersonal (*thank you*). Once lexicalized, such items may eventually turn into grammatical items, as in the case of the Spanish *dizque*, originally meaning ‘he/she says that’, which developed from a lexical construction into an adverb and then into a particle (Olbertz 2007).

Lexicalization is also responsible for the creation of idioms, i.e. the emergence of a new frame (or combination of frames) which may be fully or partially fixed (i.e. instantiated; Keizer 2016). Other forms of lexicalization correspond to ‘constructionalization’, i.e. the creation of partially fixed frames used for the formation

of partitive constructions (Keizer 2017) and binominal noun phrases of the type *that fool of a doctor* or *a whale of a problem* (Ten Wolde 2018).

A further aspect of lexical change is semantic change, often referred to as ‘subjectification’ (e.g. Traugott 1995; Traugott & Dasher 2002), a process that involves the movement of a modifier to a higher layer at the same level, or from the Representational Level to the Interpersonal Level. In the latter case, we are dealing with an instance of pragmaticalization; an English example would be the development of representational (e.g. manner) adverbs into interpersonal (e.g. illocutionary) ones.

6. This volume

The opening chapter of this volume uses the full range of layers at the two Formulation levels in Functional Discourse Grammar (the Interpersonal and the Representational Levels) to deal with one particular phenomenon; as such it serves both as an exemplification and as a further justification of the layers distinguished at these levels. The remaining chapters deal with various aspects involving the first three levels, and are ordered in accordance with the dynamic structure of Functional Discourse Grammar, i.e. in a top-down fashion: two chapters dealing with aspects of the Interpersonal Level are followed by two chapters on the Representational Level, a chapter discussing the interface between the Representational Level and the Morphosyntactic Level, and a chapter dealing with the Morphosyntactic Level.

‘Negation in Functional Discourse Grammar’, written by Kees Hengeveld and Lachlan Mackenzie, discusses negation from a typological point of view. Starting from Dik’s (1997b: 169–187) claim that in Functional Grammar negation can have scope over the speech act (roughly corresponding to the Discourse Act in FDG) and four semantic units, the authors argue that negation can occur at each and every layer of the Interpersonal and the Representational Levels (twelve in all), either as an operator or as a modifier. The chapter thus not only provides evidence for the relevance of all these layers, but also accounts for multiple occurrences of negative elements in a single utterance.

Evelien Keizer discusses the way in which FDG handles interpersonal (parenthetical) adverbs in English. Using the adverb *frankly* as case study, she shows that FDG, with its top-down, hierarchical organization, allows us to account for all the functional and formal features of its interpersonal (illocutionary) use, as well as for the interaction between these features, in a unified manner. In addition, the author shows how FDG deals with the distinction between prosodically integrated and non-integrated uses of one and the same adverb: whereas the former are analysed as modifiers within a Discourse Act, the latter form a separate Discourse Act.

The chapter ‘External possessor constructions and Cree relational inflection compared’ by Chantal Cenerini pursues an idea presented in Van de Velde (2013), which proposes an FDG account of Dutch external possessor constructions in which non-argumental dative noun-phrases are regarded as topical or affected referents with which the speaker empathizes. Cenerini argues that, although the relational inflection in Cree is not restricted to cases of possession, and, unlike in Germanic languages, is limited only to third person referents and is realized as a verbal suffix rather than a dative, both constructions are motivated by similar pragmatic factors, and both can be appropriately analysed as Subacts at the Interpersonal Level.

In the chapter entitled ‘On objective and subjective epistemic modality again’, Hella Olbertz and Marize Dall’Aglia Hattner take up the issue, discussed in Hengeveld (1988), of the distinction between objective and subjective modality – a matter that has remained controversial ever since. After providing a detailed description of the behaviour of the basic modal auxiliaries expressing various degrees of possibility and necessity in Portuguese and Spanish, the authors conclude that there is evidence for the linguistic reality of the objective-subjective dichotomy in the field of epistemic modality, with objective epistemic modality operating at the layer of the Episode, and subjective epistemic modality at the layer of the Propositional Contents.

Elnora Ten Wolde discusses the changes that take place in the premodification patterns of evaluative binominal noun phrases such as *a beast of a man* as this construction changes into a simple evaluative modifier such as *a beastuva day*. She compares two functional approaches to this phenomenon of language change: the zone-based account proposed by Ghesquière (e.g. 2014) and the hierarchical FDG approach. She concludes that, although the zone-based account can appropriately describe the different premodification patterns, it fails to provide a satisfactory explanation for why these changes took place. By distinguishing interpersonal from representational modifiers, and by distinguishing operators and modifiers at different layers of analysis, FDG can not only capture the changes that have taken place, but also the motivation behind these changes. The author concludes that an integration of the two models may prove to be productive.

In ‘Subject expression in Brazilian Portuguese’, Taísa Peres Oliveira describes the tendency of Brazilian Portuguese, originally a null-subject language, to use personal pronouns for subject reference. This happens above all in the third person singular form, which she considers to be a verbal form unmarked for person and number. In addition to third person singular reference, this unmarked form can be used for 2nd person formal and informal address and for 1st person plural reference. Using Hengeveld’s (2011a) definition of transparency in terms of one-to-one relations between units at the four levels of analysis, the author argues that by using subject pronouns Brazilian Portuguese is developing into a more transparent language.

The last contribution to this volume is dedicated to the identification of polysynthesis. In ‘Measuring polysynthesis: A Functional Discourse Grammar approach’ Inge Genee takes the two FDG parameters of transparency and synthesis as a starting point and, on the basis of recent typological work within and outside FDG, presents a quantitative approach to the typology of polysynthesis. The result is a refinement of the FDG treatment of morphological typology based on five parameters: (i) lexical density, (ii) anisomorphism between Formulation and Encoding levels; (iii) anisomorphism within the Morphosyntactic Level; (iv) alignment restrictions and (v) optionality. This chapter contributes both to FDG and linguistic typology in general.

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