

THE LEXICAL-GRAMMATICAL DICHOTOMY IN FUNCTIONAL DISCOURSE GRAMMAR

Evelien KEIZER¹

- **ABSTRACT:** This paper deals with the lexical-grammatical distinction in Functional Discourse Grammar (FDG), addressing such issues as the nature of linguistic categorization (strict versus gradual) and the possibility of representing gradience in underlying representation. It will be shown that both FDG and its predecessor, Functional Grammar (FG), are ambivalent with regard to the lexical-grammatical distinction. On the one hand, both models seem to accept the possibility of strict categorization, making 'a rather sharp distinction between lexical (or content) elements and grammatical (or form) elements in the structure of linguistic expressions' (DIK, 1997, p.159), whereby lexical elements are captured by predicates and grammatical elements are analysed as operators or functions. At the same time, however, it is implicitly accepted that categorization is not always an all-or-nothing affair (e.g. DIK, 1997, p.194). The aim of the present paper is, first, to resolve this ambivalence by offering an inventory of criteria (pragmatic, semantic, morphosyntactic and phonological) for the classification of (English) linguistic elements as lexical or grammatical. Secondly, it is argued that, although both distinctions are useful and justifiable, there is no one-to-one relationship between the lexical-grammatical dichotomy and the distinction between predicates and operators/functions. Finally, a proposal is made for an FDG-representation of a particular group of linguistic elements (including pronouns, demonstratives, numerals and prepositions) which do not clearly belong to either category but combine lexical and grammatical features.
- **KEYWORDS:** Lexical-grammatical dichotomy; predicate-operator distinction; grammaticalization; linguistic categorization; linguistic prototypes.

1 Introduction

This paper will discuss a fundamental distinction in the theory of Functional Discourse Grammar (henceforth FDG): the lexical-grammatical distinction. Its main aim will be to find a way of defining and representing the categories in question which will be compatible both with the underlying principles and

¹ UvA – Universiteit van Amsterdam – Department of English – Spuistraat 210 – 1012 VT – Amsterdam – The Netherlands. E.mail address: m.e.keizer@uva.nl

general architecture of FDG and with the findings of grammaticalization studies. Particular attention will be paid to the question of how to deal with those linguistic elements that exhibit both lexical and grammatical features. This, of course, takes us back to the much older problem of the nature of linguistic classification – is it strict, with discrete boundaries between classes, or are distinctions fuzzy and boundaries non-discrete? And, if the latter, what are the consequences for a formalistic model like that of FDG?

Strict categorization – the classical or Aristotelian view – was the prevailing view until 1980s, and among certain groups of linguists it still is. It generally results in an attempt to relegate vagueness from linguistics, as illustrated by the following passage: “fuzziness is of interest, but since it has no effect on the behavior of grammatical entities such as words, it is *not* of concern to the linguist, but rather to the psychologist” (BOUCHARD, 1995, p.31).

To functionally or cognitively oriented linguists, such an approach is obviously unacceptable, and an alternative to the classical view has, in fact, been around for quite some time (witness the work of Jespersen (1924), Bolinger (1961), Quirk (1965), Crystal (1967) and Lyons (1968)). More recently cognitive linguists like Langacker (1987) and Lakoff (1987) have developed theories of grammar in which gradience and fuzziness play an essential role. In Langacker (1987, p.14), for instance, we read that:

Eventually the predilections of the analyst [for all-or-nothing, invariable linguistic categories] must give way to the actual complexity of the empirical data. Non-discrete aspects of language structure must be accommodated organically in the basic design of an adequate linguistic theory.

FDG's predecessor, Functional Grammar (FG; DIK, 1997), does not explicitly address the problem; in actual practice, it pursues a somewhat ambivalent course. On the one hand, it is implicitly accepted that classification is not an all-or-nothing affair. A case in point are the definitions given of the three major syntactic categories: a verbal predicate, for instance, is defined as 'a predicate which is *primarily* used in predicate function' (DIK, 1997, p.194). In other words, there is room for verbal predicates that deviate from the norm, but which can still be regarded as members of the category. At the same time, however, strict categorization has always formed the basis of the FG-formalism. With regard to the lexical-grammatical distinction, for instance, we read that

FG makes a rather sharp distinction between lexical (or content) elements and grammatical (or form) elements in the structure of linguistic expressions. Lexical elements are captured by the basic predicates listed in the lexicon. Grammatical elements reflect the

various operators and functions which at different levels can be applied to the underlying constructions... (DIK, 1997, p.159)

However, apart from the fact that lexical elements have semantic content, whereas grammatical elements do not, no criteria are given for determining the status of a linguistic element. Two crucial questions are, therefore, left unanswered: (1) what is the nature of the division between lexical and grammatical elements (discrete or non-discrete)?; (2) on the basis of which criteria are elements assigned to either category?

The need to answer these questions is particularly urgent at this moment, as in FDG certain categories or items are classified differently from standard FG (e.g. pronouns, prepositions and conjunctions). I will therefore start by providing an inventory of criteria that may serve as a basis for the classification of linguistic elements as lexical or grammatical. Next, I will offer some suggestions about where to place the boundary between these categories. Finally, I hope to show that not only straightforwardly lexical and grammatical elements, but also non-prototypical elements can be accommodated by the model of FDG. As it is my belief that the classification in question, and in particular the boundary between the main categories (lexical vs grammatical), are language specific, this paper will be concerned with English only.

2 Definitions, mechanisms and clines

2.1 Definitions and mechanisms

According to Bybee, Perkins and Pagliuca (1994, p.2), grammatical elements – or “grams” as they are sometimes called – may take the form of affixes, stem changes, reduplication, auxiliaries, particles or complex constructions such as English *be going to*. They are seen as descendants of lexical items, i.e. as the result of a process of grammaticalization. The literature abounds with definitions of grammaticalization, three of which are given in (1):

- (1) a. Grammaticalization concerns the evolution from lexical to grammatical forms and from grammatical to even more grammatical forms (HEINE; KUTEVA, 2002a, p.377; cf. HEINE; KUTEVA, 2002b, p.2; AUWERA, 2002, p.21)
- b. Grammaticalization is usually defined as the process by which a lexical item or a sequence of items becomes a grammatical morpheme, changing its distribution and function in the process (BYBEE, 2003, p.146)
- c. Grammaticalization begins with concrete, lexical forms and constructions and ideally ends in zero – that is, grammatical forms increasingly lose in semantic and

phonetic content and, in the end, they may be replaced by new forms (HEINE; KUTEVA, 2002b, p.4-5; cf. HEINE; REH, 1984).

What all definitions of grammaticalization have in common is that they describe grams as resulting from a process. So what exactly happens during this process?; i.e. what kind of changes take place when a lexical item develops into a grammatical item?

Heine and Kuteva (2002a, p.378) describe the changes taking place during the process of grammaticalization in terms of the three mechanisms given in (2):

- | | |
|-------------------------------------|-------------------------------|
| (2) desemantization ('bleaching') | loss of meaning |
| decategorialization ('downgrading') | loss of categorial properties |
| erosion ('phonetic reduction') | loss of phonetic substance |

These mechanisms can be illustrated by means of the phrase *be going to*, one of the best-described examples in grammaticalization studies:

▪ *Desemantization*

The verb *to go* loses the original meaning element of 'movement', which is gradually replaced by something more abstract: first intention, eventually future.

▪ *Decategorialization*

To go loses its verbal properties: it occurs only in progressive form (but without the 'progressive' meaning aspect); its distribution changes (into that of a modal)

▪ *Erosion*

From *going to* > *gonna*; a reduction both in number of syllables and in the quality of the sounds.

It seems plausible, however, that the real source of grammaticalization is not the change in the semantics of an item or construction, but a change in use. Various authors have, indeed, recognized this; in Heine and Kuteva (2002b, p.5), for instance, grammaticalization is described as "rooted in cognition and pragmatics", while others stress that it is the result of 'pragmatic inferencing' (e.g. BYBEE; PERKINS; PAGLIUCA, 1994, p.25). This process can again be illustrated by means of *be going to*: if *be going to* is frequently used to talk about intentions, intention may become part of its meaning (BYBEE, 2003, p.156); subsequently there may be an inference from intention to futurity: if one intends to do something, this event will take place in the future (HOPPER; TRAUGOTT, 1993, p.3).

This means that a fourth mechanism needs to be distinguished, resulting in a loss of or change in the pragmatic or discourse function of an element. In the case of *be going to*, the verb *to go* gradually loses its ascriptive function; in terms of FDG, it can no longer be used to express an Subact of Ascription at the Interpersonal Level. Distinguishing a fourth, pragmatic, mechanism thus clearly suits the purposes of FDG, as now grammaticalization can be said to involve (potentially at least) changes at each of the four levels.

Now, one important characteristic of the whole process of grammaticalization is the fact that all these changes are gradual. Nevertheless, even in studies on grammaticalization the existence of distinct categories is continually implied. Heine and Kuteva (2002b, p.4), for instance, speak of items that are “already part of *the inventory of grammatical forms*” (italics added), which clearly suggests that such an inventory exists. In all other grammaticalization studies, too, elements are labelled lexical or grammatical, without any specification, however, of when a lexical item stops being lexical and enters the inventory of grammatical elements.

2.2 Clines and clusters

In grammaticalization studies the process of change is typically represented by means of clines, which are meant to capture the fact that “forms do not change abruptly from one category to another, but go through a series of gradual transitions” (HOPPER; TRAUGOTT, 1993, p.6). On one end of the cline we will find prototypical content items, such as full verbs, nouns and adjectives; on the other end, we find inflectional affixes. Although what lies in between these two categories is really a continuum, it is possible, according to Hopper and Traugott, to recognize certain “clusters” or “focal areas” (HOPPER; TRAUGOTT, 1993, p.4-5). Two of these transitional categories are given in (3):

- (3) *Grammatical words*: have relative phonological and syntactic independence (e.g. prepositions).
Clitics: are constrained to occurring next to an autonomous word, known as the host (e.g. 's in *it's me* or 'm in *I'm*).²

Although linguists may disagree about which items go where, most of them, Hopper and Traugott (1993, p.7) claim, agree that there is a “cline of grammaticality” of the type given in (4):

² Hopper and Traugott actually distinguish three in-between categories, the third one being that of derivational forms. However, as these do not form part of the same cline, I will ignore them here (though they are certainly an interesting group to consider).

(4) content item > grammatical word > clitic > inflectional affix

Hopper and Traugott's work exhibits the same ambivalence, however, that characterizes standard FG. On the one hand they stress that it is difficult, impossible even, to establish strict boundaries; on the other hand, they do refer to a lexical and a grammatical area on the cline (HOPPER; TRAUGOTT, 1993, p.7). It will be clear that a formal modal like FDG requires some kind of boundary: to give any underlying representations at all, we need a cut-off point between the two areas. To see if this is – at least to some extent – feasible, let us first consider some of the more concrete criteria put forward in the literature.

3 Criteria

3.1 Criteria from grammaticalization studies

Different studies in grammaticalization focus on different features to distinguish lexical items from grams. What follows is a brief summary of the various criteria applied.

Pragmatic:

- Loss of discourse/pragmatic function. In FDG: loss of ascriptive function³ and loss of the possibility of Focus assignment
- High frequency of use (BYBEE; PERKINS; PAGLIUCA, 1994, p.8, p.19; BYBEE, 2003, p.147)

Semantic:

- Semantic generalization/reduction (BYBEE; PERKINS; PAGLIUCA, 1994, p.6-7):
 - loss of most if not all of the specificities of lexical meaning
 - generalization of meaning; development of abstract or relational meaning (see also BYBEE, 2003, p.147, p.152)
 - a widening of the domain of applicability
- Growing semantic dependence on surrounding material (interpretation depends more and more on the meaning contained in the context)

³ In most cases the loss of ascriptive potential of a lexeme will lead to a loss of referential potential for the construction in which they appear; I will consider this as part of the same process and, as such, as one criterion.

Morphosyntactic:

- Grams are members of a closed class (e.g. BYBEE; PERKINS; PAGLIUCA, 1994, p.2, p.8, p.19; HEINE; KUTEVA, 2002a, p.378)
- Grams are members of a regular syntactic paradigm (“paradigmatization”, LEHMANN, 1985; see also LEHMANN, 1989, p.16; 2002, p.1)
- Grams exhibit specific syntactic behaviour; they are characterized by:
 - a fixed position of occurrence (e.g. LEHMANN, 1985; BYBEE; PERKINS; PAGLIUCA, 1994, p.7);
 - co-occurrence restrictions:
 - grams cannot be modified by lexical elements (e.g. BYBEE; PERKINS; PAGLIUCA, 1994, p.7)
 - grams cannot co-occur with members of the same class (e.g. *ibid*)
 - a tendency to become obligatory, even when redundant in the given context (“obligatorification”, LEHMANN, 1985, see also e.g. BYBEE; PERKINS; PAGLIUCA, 1994, p.8, p.19)

Phonology/Phonetics:

- Phonetic reduction (e.g. BYBEE; PERKINS; PAGLIUCA, 1994, p.6; see also BYBEE 2003, p.146, LEHMANN 1985);
- Reduction in length (e.g. BYBEE; PERKINS; PAGLIUCA, 1994, p.19);
- Fusion with other morphemes; ultimately leading to affixation (e.g. LEHMANN, 1985, BYBEE; PERKINS; PAGLIUCA, 1994, p.6);
- Lack of stress (e.g. BYBEE; PERKINS; PAGLIUCA, 1994, p.7).

3.2 FDG: predicate formation

Some of these criteria have been employed within FG and FDG; in particular, the possibility of modification, the absence of semantic meaning and, to a lesser extent, phonetic reduction and mutual exclusivity (e.g. MACKENZIE, 1992 and KEIZER, 2008 (Forthcoming) for prepositions; HENGEVELD and WANDERS, 2007 for conjunctions). There is, however, another criterion that can be claimed to be relevant within an FDG context: the possibility of predicate formation. After all, it is only lexical elements (predicates) that can be input to a predicate formation rule (e.g. DIK, 1997, p.349): such rules typically apply to verbal, nominal and adjectival predicates, whereas elements like articles, pronouns and conjunctions do not normally serve as input. I will therefore add this feature to our list of criteria.

4 Reliability of the criteria

We now seem to have a nice set of criteria for establishing the lexical or grammatical status of a linguistic element, all of which seem to work fine – at least for the clearest cases, i.e. full content words on the one hand and affixes on the other. But how reliable are these criteria really? And are they all independent criteria, or are some characteristics perhaps brought about by others? I will illustrate the kind of problems involved by looking at some of the criteria mentioned.

4.1 Semantic reduction

One of the problems with the criterion of semantic reduction is that even highly grammaticalized forms may retain traces of the meaning of the original item or construction (BYBEE; PERKINS; PAGLIUCA, 1994, p.15, p.17); examples are the complex conjunction like *in case* and the complex preposition like *on top of*. Similarly, it could be argued that certain lexical items are at least as empty of meaning as some grammatical elements: the adverb *possibly*, for instance, does not seem to have more semantic content than the modal *may*.

4.2 Closed class

First of all, this criterion implies that the lexical-grammatical criterion applies to classes and not to individual members. In other words: a class is either lexical or grammatical – this then must hold for all its members. As it turns out, however, this position is difficult to maintain for all classes. Lehmann (2002), for instance, notes that minor word classes, such as adpositions and conjunctions, are not necessarily grammatical but that some of their members will be more grammatical and others more lexical. He further adds that not every newly created (complex) preposition automatically becomes a grammatical element. First, the original construction will lexicalize, yielding a new lexical item. This lexicalized item may grammaticalize and eventually enter the ‘grammatical inventory’.

4.3 Modifiability

Here we are faced with two problems. The first concerns the scope of the modifier, which may be difficult to establish (see KEIZER, 2008, Forthcoming). In a phrase like *straight towards the house*, does *straight* modify the preposition (*towards*), or the PP *towards the house*? In some cases we intuitively prefer one interpretation rather than the other: in *precisely in the middle*, most speakers probably feel that *precisely* modifies the PP, whereas in the phrase *in three days before the conference*, *three days* is more likely to be interpreted as modifying just the element *before*. Intuition alone, however, is not enough.

The second problem has to do with the reduction of a construction. Lehmann (2002, p.1) observes that not only grammaticalization but also lexicalization (the creation of a lexical item out of syntactic construction, such as a phrase) may involve semantic reduction. In other words, from the fact that in a complex conjunction like *in the event that* the noun *event* is no longer modifiable, we cannot deduce that the phrase as a whole must be a grammatical element (HENGEVELD; WANDERS, 2007) – this is simply the result of lexicalization. In what follows, the criterion ‘not modifiable’ will therefore be applied to the construction as a whole, not to any of its component elements.

4.4 Independence of criteria

A further complicating factor concerns the fact that the criteria mentioned are often related to each other (e.g. HEINE; KUTEVA, 2002a, p.378). Thus, in Bybee, Perkins and Pagliuca (1994, p.19) we read that “since the more generalized a gram is, the wider its domain of applicability, we should expect that the more generalized a gram is, the higher its incidence of use.” Higher incidence of use may subsequently lead to phonetic reduction (BYBEE; PERKINS; PAGLIUCA, 1994, p.20). As it turns out, however, semantic reduction does not necessarily lead to higher frequency, nor does it always entail phonetic reduction. I will therefore continue to regard them as separate criteria.

Moreover, phonetic reduction can also be claimed to be brought about by lack of stress, which in turn may result from a lack of salience. In other words, it is because certain elements are not (or no longer) used to express salient information that they are never stressed, which in turn leads to phonetic reduction. The clearest examples of this process are bound morphemes. Note, however, that even bound morphemes can be stressed, provided they have syllabic status (*waiTED*, not *waiTING*). In this respect, the recently introduced distinction in FDG between Focus, Emphasis and Contrast becomes relevant. Thus, what distinguishes grams from lexical elements is that they cannot be assigned the pragmatic functions of Focus and Emphasis; they are, however, still available for Contrast – and may therefore still be stressed. In what follows, I will therefore replace the criterion of stress by the criterion of Focus/Emphasis assignment.

5 Applications and boundaries

On the basis of the criteria described so far, and taking into consideration some of the reservations just mentioned, I have tested the degree of lexicality/grammaticality of a number of linguistic elements. The results are given in the matrix in Table 1, which has been drawn up in the spirit of work by Quirk (1965), Crystal (1967), Ross (1973), Quirk et al. (1985) etc. Note that some of these

elements are classes, others individual members; individual members have been selected in those cases where it has been suggested that a particular class may include both lexical and grammatical members (such as prepositions and conjunctions). The criteria have been formulated in such a way that the more pluses, the more grammatical the element in question.

Table 1 – The lexical-grammatical squish for English free morphemes

Criterion \ Class/Element	No ascriptive function	Mutually exclusive	Fixed position	Not modifiable	No predicate formation	Closed class	Increased frequency	Little or no Semantic content ⁴	Phonetically reduced	Syntactic paradigm	No Focus/Emphasis	Fusion ⁵	
<i>lets</i>	+	+	+	+	+	+?	+	+	+	+	+	-	11+/1-:10+
<i>that</i> (compl.)	+	+	+	+	+	+?	+	+	+	+?	+	-	11+/1-: 10+
Articles	+	+	+	+	+	+	+	+	+	+?	-	-	10+/2-: 8+
<i>of</i> (prep./nom.)	+	+	+	+	+	±	+	+	±	+?	+	-	9+/1-: 8+
Modals	+	+	+	+	+	+?	+	+	+	-	-	±	9+/2-: 7+
Demonstratives	+	+	±	+	+	+	dna	±	-	+	-	-	6+/3-: 3+
Pronouns	+	+	-	±	+	+	dna	±	±	+	-	±	5+/2-: 3+
<i>in case</i> (conj)	+	+	+	+	dna	±	±	±	+	-	-	-	5+/3-: 2+
Numerals	+	+	+	-?	-	+	dna	±	-	-	-	-	4+/6-: 2-
<i>in the event that</i> (conj)	+	+	+	+	dna	±	-	-	-	-	-?	-	4+/6-:2-
<i>sort-of/kind-of</i>	+	-?	-	+	dna	-	+	±	±	-	-	-	3+/6-:3-
<i>through</i> (prep.)	±	+	±	±	+?	±	dna	-	-	-	-	-	2+/5-:3-
<i>under</i> (prep.)	+	±	+	?	± ⁶	±	dna	-	-	-	-	-	2+/5-:3-

⁴ The term semantic reduction presumes the development of an element from a more lexical element. For some items, such as demonstratives or numerals or basic prepositions, this has not been established. The criterion to be applied below will therefore be the degree of semantic content rather than the degree of semantic reduction.

⁵ Note that, as applied here, fusion does not relate to the component parts of a grammaticalized phrase, but to the integration of the grammaticalized item as a whole with some other morpheme.

⁶ *Under* is quite readily available for predicate formation as a prefix. Question is whether we regard the prefix *under* and the preposition *under* as separate elements.

Let us consider some of these items in some more detail.

Lets

This is a prototypical case of grammaticalization, well described in the literature. It has a lexical source, all four mechanisms are at work, and virtually all the criteria are fulfilled:

- loss of interactive function:
 - *let* is no longer used to ascribe a property
 - *us* is no longer used to refer
 - neither can be assigned Focus or Emphatic function
- desemanticization:
 - *let* has lost its original meaning of permission
 - *us* has lost its semantic features of first person plural
- decategorialization:
 - *let* has lost its verbal properties: the form has become invariable (always imperative form without fulfilling an imperative function)
 - *us* has lost its pronominal properties: it is no longer the objective form; i.e. no alternation between forms (*we/us*)
- phonetic reduction:
 - *let us*: phrase > word. Even further reduced to /les/
 - *us*: word > affix > phoneme (HOPPER; TRAUGOTT, 1993, p.10-14)

Finally, the phrase as a whole has procured a new function: that of an illocution marker, indicating adhortative.

Sort-of

Sort-of can be regarded as a case of incipient grammaticalization. So far, it exhibits features of lexicalization more than grammaticalization, but it may grammaticalize over time (see HOPPER, 1991). The development of *sort-of* in its modifying use is well described:⁷

- loss of interactive function: *sort* loses its ascriptive function; it can no longer be used to evoke an entity.
- desemanticization: *sort* loses its meaning of (particular) type; *of* loses its relational function

⁷ It has been argued that in constructions like *these sort of skills*, where *sort-of* does not have a qualifying function (it not 'something like a skill' that is referred to, but 'a set of skills of a particular type'), but where the determiner nevertheless exhibits number agreement with the second noun, the sequence *these sort of* can plausibly be analysed as belonging to the class of postdeterminers (cf. DENISON, 1998; DENISON, 2005; DENISON; KEIZER, Forthcoming; KEIZER, 2008, Forthcoming).

- decategorialization: *sort* loses its nominal properties, becomes invariable (no plural); *of* no longer takes an NP-complement
- phonetic reduction: *of* combines with *sort* to become a phoneme: *sorda* (optional).

The phrase as a whole has developed a new function: it qualifies the predicate, typically functioning as a hedge.

However, when we look at Table 1 we see that *sort-of* still exhibits many lexical features as well:

- as a modifier, it can co-occur with other modifiers (not mutually exclusive)
- it does not have a fixed position in the clause; in fact, its position has become more flexible: it may take various positions, and different scopes (over predicates (*sort of embarrassing*), phrases, (*sort of at the same time*) and clauses (*I begged him, sort of*).
- it is not a member of a closed class nor does it form part of a syntactic paradigm
- the phonetic reduction is optional; it can have Focus function
- the phrase itself is optional
- it does not fuse with adjacent elements.

Numerals

Finally, let us consider the class of numerals. Traditionally, and FG was no exception, these have been regarded as grammatical elements. That they do not have the highest possible degree of grammaticalization is clear from the fact that in English, as well as in many other languages, the cardinal number *one* has grammaticalized into the indefinite article (HEINE; KUTEVA, 2002b, p.8; BYBEE, 2003, p.147). Moreover, we find that:

- they can be claimed to have semantic content
- they can be input to predicate formation rules (*two-seater, three-wheeler, tenfold; firstly, secondly* etc.)
- they can be modified (*approximately three, almost twenty*)
- they are not phonetically reduced; they can have Focus function
- they do not fuse with adjacent elements.

So, what overall conclusions can we draw from Table 1? First of all, that it is a reasonably well-behaved squish, as Ross (1973) would put it, with clearly emerging prototypes. Note in particular the concentrations of pluses in the top left corner, and minuses in the bottom right corner. The table also clearly identifies

the problematic areas (pronouns and demonstratives) and confirms the heterogeneous nature of prepositions⁸ and conjunctions. Thus it seems justified to regard some conjunctions as more lexical than others (e.g. *in the event that* as more lexical than *in case*), even to the extent that some are to be regarded as lexical and others as grammatical. It also seems justified to assume that prepositions are in principle lexical elements, though some may have a grammatical use. Finally, there is reason to assume that numerals are lexical elements.

Next, we come to the question of where to place the boundary. Here we have several options. When we look at the cline in (4), FG would have drawn the line between content items and grammatical words. This may be seen as the “conservative” position, according to which all the items in Table 1 are grammatical. In view of the large number of lexical features of some of these elements, this position does not seem tenable. A more natural place for a boundary seems to be in between numerals and pronouns (this may be considered the “liberal” position). Finally, we may place the cut-off point between demonstratives and modals (the “progressive” position); note that this would mean that not only numerals, but also pronouns and demonstratives are lexical items. The progressive position is represented in the revised cline in Table 2:

Table 2 – Revised cline of grammaticality; major divisions for English

content item		>	grammatical word	>	inflectional affix ⁹
primary	secondary		secondary	primary	
full verbs, nouns, adjectives	idioms; lexicalized forms (<i>in the event that, sort-of</i>)		numerals; demonstratives; pronouns; <i>through, under, in case</i>	<i>lets</i> articles; modals <i>of (nom.)/by (pass.); that (compl.);</i>	<i>-s</i> <i>-ed</i> <i>-ing</i>
restrictors			???	operators/functions	

The top row presents the cline. Here there are no cut-off points, as we are dealing with a continuum. Below the cline the cut-off points for English are specified. The

⁸ In grammaticalization studies, simple prepositions are generally regarded as grammatical elements; there is no consensus, however, on the status of complex prepositions. Some see these as lexical items (e.g. QUIRK et al., 1985, RAMAT 1992, LEHMANN 2002: 8), others as (unambiguously) grammatical (e.g. HEINE; KUTEVA, 2002b: p.3; BYBEE, 2003: p.145; TRAUOGTT, 2003: p.636; see also BRINTON; TRAUOGTT, 2005: p.64-65).

⁹ Note that, unlike the cline in (4), the revised cline no longer distinguishes a separate category of clitics. The reason is that – in English anyway – the strong form of a clitic (e.g. *will for 'll or them 'm*) is always available. I will therefore not distinguish a separate group of clitics: they will be seen as alternative forms of expression, the result of a process of assimilation, which may or may not take place, depending on a combination of factors, including the type of element, presence/absence of salience, position in the clause, syntactic function, style and mode of discourse etc. If anything, cliticization can be seen as a test for grammaticalization, in the sense that the more grammatical an element, the more likely it is to cliticize. However, since cliticization depends on a combination of factors, it will not be used as a separate criterion.

following major groups can be distinguished:

- *'primary' lexical elements*: full or fully lexicalized nouns and verbs, adjectives/ adverbs.
- *'secondary' lexical elements*: combinations of lexemes that have come to behave as a single lexeme. This class includes such descriptive elements as idioms¹⁰ as well as non-descriptive elements with traces of the original meaning (lexicalized constructions; see Brinton and Traugott (2005 e.g. p.48-57) and Lehmann (1989, 1995). The latter may be cases of incipient grammaticalization (e.g. *I hear, innit, sort-of, in case*).¹¹
- *'secondary' grammatical elements*: prepositions, pronouns, numerals, demonstratives some conjunctions, etc.
- *'primary' grammatical elements*: almost completely grammaticalized: articles, modals, some conjunctions (e.g. *that, or, and, but*), possibly some pronouns (relative pronouns, reflexive pronouns), and some prepositions in certain uses (*of* in nominalizations/*by* in the passive).

6 Representation in FDG

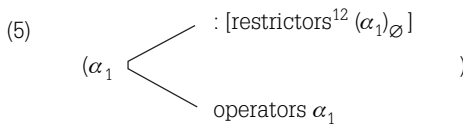
As pointed out before, in FDG, as in FG, a strict distinction is made between restrictors, as lexical elements, and operators, as grammatical elements. Whereas the former are descriptive (describe the property assigned to an entity), the latter are not (they specify properties of an entity). Nevertheless, their relation to the entity described/specified is not so very different. In fact both can be said to have a restrictive function in the sense that they provide additional properties of the entity (or set of entities) in question that help the addressee to pick out this entity (or set of entities). Both operate at all levels and with all types of entity. Moreover, they can be taken to be selected more or less at the same time (see HENGEVELD; SMIT, Forthcoming). The crucial difference seems to be in the nature of the information they provide: restrictors restrict the denotation of an expression by describing a property of the entity/set of entities designated (and as such function as predicates), whereas operators specify more abstract, non-descriptive properties of the entity/set of entities in question.

¹⁰ Note that idioms exhibit different degrees of transparency and accessibility (e.g. JACKENDOFF, 2002).

¹¹ As pointed Boye and Harder (2007: p.587) point out in their analysis of complement-taking predicates like *think*, distinguishing a class of secondary lexical predicates 'is indispensable for any theory of grammaticalization', as the process of grammaticalization can only get started when a fully lexical items can be hijacked by a speaker and endowed with 'secondary usage status'.

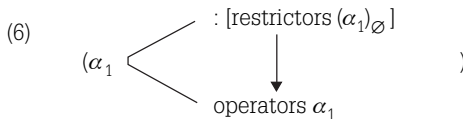
This close relationship between restrictors and operators does not, however, seem to be fully acknowledged in underlying representation. Restricting ourselves for the moment to the Representational Level, we find that operators are represented by means of abstract markers preceding the variable symbolising the designated entity, while restrictors are represented as lexemes (only in the case of heads/first restrictors) or as predication frames which are in turn headed by lexemes (in the case of complex primary restrictors or non-primary restrictors). This way of representing the various elements may be claimed to indicate the scope relations between them; i.e. operators are supposed to take all restrictors in their scope (HENGEVELD; SMIT, Forthcoming).

Although the current way of representing the relation between heads, operators and restrictors is certainly justifiable, it will be clear that a two-dimensional model can only present one particular perspective and can, as such, reflect only a limited number of relations. To highlight certain relations, however, a somewhat different perspective may be preferred. Thus, without changing the general principles and architecture of FDG, we can, simply for the purpose of bringing out the similarities between operators and modifiers, choose to represent representational frames as follows:



Restrictors limit the denotation of an expression by assigning a property to the entity designated; i.e. there is a relation of predication between the restrictor (a predicate) and the entity represented by the variable (its argument). Operators, on the other hand, do not restrict a potential set of referents by predicating a property (i.e. they do not restrict the denotation of a set), but specify a more abstract property of the entity (or set of entities) in question (they help to identify the entity/set of entities in question by non-descriptive means). As such, the operator does not take an argument.

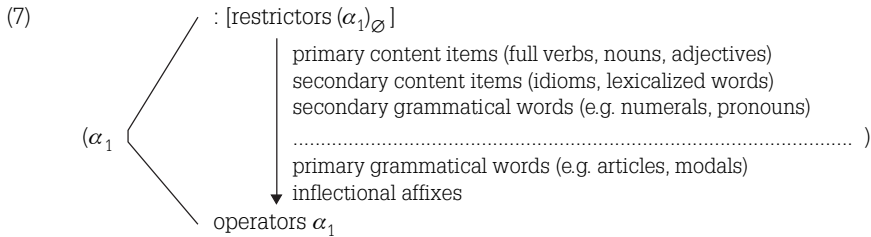
This repositioning of restrictors and operators allows us to represent the process of grammaticalization:



Restrictors are fully lexical, at least in their most prototypical form (nouns, verb, adjectives), while prototypical operators are fully grammatical (e.g. when they

¹² Restrictors here include both the head (first restrictor) and modifiers (non-primary restrictors).

are expressed by means of inflectional affixes). In addition, we have now created room in the model to represent the in-between classes – along the cline from fully lexical to fully grammatical (see Table 2).



For the sake of representation and for ease of reference, a boundary will be needed – in this case, the boundary has been drawn in accordance with the ‘progressive’ position represented in Table 2.

The representation in (7) does, however, leave a number of questions unanswered. The most important of these is perhaps that of how to represent secondary grammatical words. On the basis of their linguistic behaviour (as represented in Table 1), they have been categorized as lexical items – or at least as more lexical than grammatical. This means that in FDG they will be analysed as restrictors – a practice which has indeed recently been proposed already for certain pronouns. But is such an analysis appropriate for all secondary grammatical words, including those (such as numerals or demonstratives) which (typically) function as determiners? Like pronouns, these clearly do not behave as prototypical operators; at the same time, they also differ considerably – both in form and in function – from fully lexical modifiers.

It might make sense to find a way of representing the in-between status of certain secondary grammatical words in underlying representation. Note that in terms of function, these secondary grammatical words are non-descriptive: as pointed out before, they do not have a predicative function and as such do not restrict the denotation of the expression in question. In fact, they seem to function more like operators, in the sense they are meant to help the addressee in picking out the designated entity by providing non-descriptive semantic information about the entity (proximity, number etc.) – which means that the term ‘lexical operator’ might be more appropriate. In other words, although both the operator/restrictor distinction and the grammatical/lexical distinction can be assumed to be useful and justifiable, the relationship between them will no longer be taken to be one-to-one. Restrictors serve to restrict the denotation of an expression by *assigning a descriptive property* to the designated entity; operators, on the other hand, *specify a more abstract, non-descriptive property*

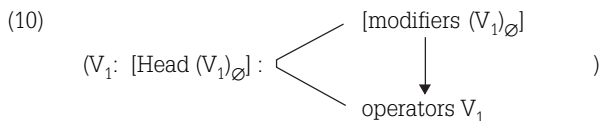
of the entity/set of entities, etc. According to these criteria, a demonstrative like *that* is not a restrictor. As it is nevertheless more lexical than grammatical, it will be analysed as a lexical operator:

- (8) a. that man
 b. (that α_1 : [man (α_1) $_{\emptyset}$])

The next issue to be addressed is that of how to deal with semantic functions. These have not been included in the alternative perspective offered in (7). Nevertheless, the findings presented in Table 1 show that some of the linguistic elements traditionally regarded as the realization of a semantic function (e.g. prepositions, conjunctions) may have to be treated on a par with lexical operators. In this case, however, it seems to be more appropriate to analyse the items in question as the head of a linguistic unit; e.g. *under* heading a locational argument in *He put the box under the table*; (see KEIZER, 2008, Forthcoming):

- (9) a. under the table
 b. (l_1 : [under_P (l_1)] (x_1 : [table_N (x_1)])_{Ref})

Finally, the question arises of whether this approach can also be applied to other levels, particularly the Interpersonal Level. In principle, there is no reason why this should not be possible, despite the fact that at this level the head is typically of an abstract nature (possibly, though not necessarily, grammaticalized – *lets*, for instance, would be the grammaticalized realization of the abstract head ADHOR(tative)). In that case, the relevant relationship is not that between (primary and non-primary) restrictors on the one hand and operators on the other, but between modifiers (non-primary restrictors) – such as *in short*, *sadly* etc. – and operators (e.g. EXCL):



7 Conclusions

Some people may wonder whether it might not be preferable to ignore the lexical/grammatical distinction altogether and treat all linguistic items as lexical elements. From the above, it will be clear that I do not believe this to be an

option. If a distinction is relevant to the description and analysis of linguistic utterances, we ought to find a way of employing, and therefore defining, it in the theory. Thus, if we find that the grammatical/lexical distinction can help us to account for certain differences in linguistic behaviour, not reflecting this distinction in the FDG-model would seriously weaken the model's explanatory and psychological adequacy. Therefore, although we know the difference between lexical and grammatical to be non-discrete, we nevertheless need to draw a line; this needs to be done in a principled and consistent way, on the basis of well-defined criteria, and for each language individually.

In this paper I have made start for English. It will have become clear that the problematic area is that of the grammatical words, a highly heterogeneous category, including such diverse elements as auxiliaries, modals, prepositions, demonstratives and conjunctions. It has been shown that it is possible, on the basis of a number of pragmatic, semantic, morphosyntactic and phonological criteria, to classify some of them as lexical (secondary grammatical words, or rather, lexical operators/functions) and others as grammatical (primary grammatical words or grammatical operators/functions). Moreover, it has been argued that classification need not take place on the basis of entire classes; sometimes we need to look at individual items.

In addition a proposal has been made for the representation of the newly distinguished category of lexical operators/functions, such as demonstratives, numerals, pronouns and certain prepositions. For demonstratives and numerals it was suggested that they are represented as operators while taking a lexical form, while pronouns and prepositions will be represented as (semi-)lexical heads of terms.

There are, of course, a number of important issues that need to be addressed in more detail, in particular with regard to the selection and application of the relevant criteria. As indicated in Section 3, for instance, we will have to establish the reliability and independency of some of the proposed criteria (e.g. semantic content, syntactic paradigm, frequency). Moreover, we need to consider the question of how to select the relevant criteria: are all the criteria proposed really relevant, and are there any we have missed? Finally, it may well be that not all (sets of) criteria are equally relevant (in an FDG context) and that some kind of weighing of criteria will have to take place.

But even if we were able to answer all these questions, some items would still remain difficult to classify: language is, after all, characterized by constant change and by an amazing capacity for variation. Equivocality, in other words, is simply inherent to language. This, however, need not be an insurmountable problem for the theory of FDG. After all, if we can categorize elements for the

purpose of talking about them – allowing for a certain measure of equivocality – then there is no reason to assume that such elements cannot be represented meaningfully, though with the same measure of equivocality, in a model like FDG.

KEIZER, E. A dicotomia léxico-gramática na Gramática Discursivo-Funcional. *Alfa*, São Paulo, v.51, n.2, p.35-56, 2007.

- RESUMO: Este artigo trata da distinção léxico-gramática na Gramática Discursivo-Funcional (GDF), abordando questões como a natureza da categorização lingüística (estrita versus gradual) e a possibilidade de expressar a gradiência na representação subjacente. Será mostrado que tanto a GDF como sua predecessora, a FG, são ambivalentes com relação à distinção léxico-gramática. Por um lado, ambos os modelos parecem aceitar a possibilidade de categorização estrita, fazendo "uma clara distinção entre elementos lexicais (ou conteúdo) e gramaticais (ou forma) na estrutura das expressões lingüísticas" (DIK, 1997, p.159), na qual elementos lexicais são captados por predicados e elementos gramaticais são analisados como operadores ou funções. Mas, ao mesmo tempo, aceita-se implicitamente que a categorização não é sempre uma questão de tudo ou nada (ex. DIK, 1997, p.194). O objetivo deste trabalho é, primeiro, resolver a ambivalência por meio da apresentação de um inventário de critérios (pragmáticos, semânticos morfossintáticos e fonológicos) para a classificação de elementos lingüísticos (do inglês) como lexicais ou gramaticais. Em segundo lugar, argumenta-se que, embora ambas as distinções sejam úteis e justificáveis, não há uma relação biunívoca entre a dicotomia léxico-gramática e a distinção entre predicados e operadores/funções. Por fim, apresenta-se uma proposta para uma representação no âmbito da GDF de um grupo específico de elementos lingüísticos (incluindo pronomes, demonstrativos, numerais e preposições) que não pertencem claramente a nenhuma das categorias, mas combinam traços lexicais e gramaticais.
- PALAVRAS-CHAVE: Dicotomia léxico-gramática; distinção operador-predicado; gramaticalização; categorização lingüística; protótipos lingüísticos.

References

AARTS, B.; DENISON D.; KEIZER E.; POPOVA, G. (Ed.). *Fuzzy grammar: a reader*. Oxford: Oxford University Press, 2004.

AUWERA, J. van der. More thoughts on degrammaticalization. In: WISCHER, I.; DIEWALD, G. (Ed.). *New reflections on grammaticalization*. Amsterdam: John Benjamins, 2002. p.20-29.

BRINTON, L. J.; TRAU GOTT, E. *Lexicalization and language change*. Cambridge: Cambridge University Press, 2005.

BOLINGER, D. L. *Generality, gradience, and the all-or-none*. The Hague: Mouton de Gruyter, 1961.

- BOUCHARD, D. *The semantics of syntax: a minimalist approach to grammar*. Chicago: University of Chicago Press, 1995.
- BOYE, K.; HARDER, P. Complement-taking predicates: usage and structure. *Studies in Language*, v.31: p.569-606, 2007.
- BYBEE, J. L. Cognitive processes in grammaticalization. In: TOMASELLO, M. (Ed.). *The new psychology of language: cognitive and functional approaches to language structure*. Mahwah: Lawrence Erlbaum, 2003. v.2.
- BYBEE, J. L.; PERKINS, R.; PAGLIUCA, W. *The Evolution of grammar: tense, aspect, and modality in the languages of the world*. Chicago: The University of Chicago Press, 1994.
- CRYSTAL, D. English word classes. *Lingua*, v.17, p.24-56, 1967.
- DENISON, D. Syntax. In: ROMAINE, S. *The Cambridge history of the English language: 1776-1997*. Cambridge: Cambridge University Press, 1998. v.2, p.93-329.
- DENISON, D. *The grammaticalizations of sort of, kind of and type of in English*. 2005. Paper presented at 3rd New Reflections on Grammaticalization 3, Santiago de Compostela, 2005.
- DENISON, D.; KEIZER, M. E. *Sort of-constructions: grammar and change*, in preparation.
- DIK, S. C. *The theory of Functional Grammar, Part 1: The structure of the clause*. Berlin: Mouton de Gruyter, 1997.
- HEINE, B.; KUTEVA, T. On the evolution of grammatical forms. In: WRAY, A. (Ed.). *The transition to language*. Oxford: Oxford University Press, 2002a. p.376-397.
- _____. *The world lexicon of grammaticalization*. Cambridge: Cambridge University Press, 2002b.
- HEINE, B.; REH, M. *Grammaticalization and reanalysis in African languages*. Hamburg: Helmut Buske, 1984.
- HENGEVELD, K.; MACKENZIE, J. L. *Functional Discourse Grammar*. Oxford: Oxford University Press, 2008. Forthcoming.
- HENGEVELD, K.; SMIT, N. Dynamic formulation in Functional Discourse Grammar. Forthcoming.
- HENGEVELD, K.; WANDERS, G. Adverbial conjunctions in Functional Discourse Grammar. In: HANNAY, M.; STEEN, G. *The English Clause: usage and structure*. Amsterdam: John Benjamins, 2007. p.209-226.

- HOPPER, P. J. On some principles of grammaticization. In: TRAUGOTT, E. C.; HEINE, B. (Ed.). *Approaches to grammaticalization*. Amsterdam: John Benjamins, 1991. v.1, p.17-35.
- HOPPER, P. J.; TRAUGOTT, E.C. *Grammaticalization*. Cambridge: Cambridge University Press, 1993.
- JACKENDOFF, R. J. *Foundations of language: brain, meaning, grammar evolution*. Oxford: Oxford University Press, 2002.
- JESPERSEN, O. *The philosophy of grammar*. London: George Allen and Unwin, 1924.
- KEIZER, M. E. English prepositions in Functional Discourse Grammar. *Functions of Grammar*, v.15, n.2, 2008. Forthcoming.
- _____. E. *The English noun phrase: the nature of linguistic categorization*. Cambridge: Cambridge University Press. Forthcoming.
- LAKOFF, G. *Women, fire and dangerous things: what categories reveal about the mind*. Chicago: University of Chicago Press, 1987.
- LANGACKER, R. W. *Foundations of Cognitive Grammar: theoretical prerequisites*. Stanford: Stanford University Press, 1987. v.1.
- LEHMANN, C. Grammaticalization: synchronic variation and diachronic change. *Lingua e Stile*, v.20, p. 303-318, 1985.
- _____. Grammatikalisierung und Lexikalisierung. *Zeitschrift für Phonetik, Sprachwissenschaft und Kommunikationsforschung*, v.42, p.11-19, 1989.
- _____. *Thoughts on grammaticalization*. München: Lincom Europa, 1995.
- _____. New reflections on grammaticalization and lexicalization. In: WISCHER, I.; DIEWALD, G. (Ed.). *New reflections on grammaticalization*. Amsterdam: John Benjamins, 2002. p.1-18.
- LYONS, J. *Introduction to theoretical linguistics*. Cambridge: Cambridge University Press, 1968.
- MACKENZIE, J. L. English spatial prepositions in Functional Grammar. *Working Papers in Functional Grammar*, v.46, 1992.
- QUIRK, R. Descriptive statement and serial relationship. *Language*, v.41, p.205-217, 1965.
- QUIRK, R. et al. *A comprehensive grammar of the English language*. London: Longman, 1985.

RAMAT, P. Thoughts on grammaticalization. *Linguistics*, v.30, p.549-560, 1992.

ROSS, J. R. Nouniness. In: FUJIMURA, O. (Ed.). *Three dimensions of linguistic research*. Tokyo: TEC, 1973. p.137-257.

TRAUGOTT, E. C. Constructions in grammaticalization. In: JOSEPH, B. D.; JANDA, R.D. (Ed.). *The handbook of historical linguistics*. Oxford: Blackwell, 2003. p.624-647.

Received July 2007

Approved October 2007