

## **A hierarchical approach to grammaticalization**

### **Abstract**

This paper argues that grammaticalization processes can be systematically described using the framework of Functional Discourse Grammar (FDG). Grammaticalization is seen as a combination of contentive and formal change, and, crucially, it is argued that these need not go hand in hand, though there are restrictions on how they combine. It is argued that contentive change always involves scope increase, where scope is defined in terms of the levels and layers distinguished in FDG. Formal change is not defined in terms of specific formal categories, as in earlier grammaticalization hierarchies, but is rather defined in terms of the distributional behaviour of grammaticalized elements. This way, formal change can be defined independently of the morphological type of a language. Finally, it is shown that contentive change and formal change are two independent processes, though their interaction is severely limited, in the sense that when an item moves up along the contentive cline, it cannot move down along the formal cline. Similarly, an item can not move up the formal cline while moving down the contentive cline.

**Keywords:** grammaticalization, Functional Discourse Grammar, layering, TAME systems

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### **1. Introduction**

In this paper I argue that processes of grammaticalization, seen as a combination of contentive and formal change, follow predictable paths: on the content side they entail a stepwise and systematic increase in scope, while on the formal side they entail a stepwise and systematic decrease in lexicality. In defining scope relations I use the framework of Functional Discourse Grammar (FDG), a typologically based theory of language structure (Hengeveld and Mackenzie 2008). This grammatical theory defines scope relations in terms of hierarchical multi-layered structures that are pragmatic and semantic in nature. It furthermore offers new tools to define degrees of lexicality through its systematic distinction between lexemes, operators, and lexical operators (Keizer 2007). By taking this approach the paper thus also addresses the question whether FDG can serve as a framework to predict, describe and explain processes of grammaticalization.

Section 2 gives a brief outline of relevant aspects of FDG, which are then applied systematically in the following sections. A description of processes of contentive change is provided in section 3, while processes of formal change are studied in section 4. Section 5 then looks at the interactions between processes of contentive change and of formal change. The paper ends with a conclusion in section 6.

## 2. Functional Discourse Grammar

### 2.1. Layering<sup>1</sup>

Since the eighties, a number of grammatical theories<sup>2</sup> have incorporated the idea that grammatical categories are organized in layers. The basic idea may be illustrated with the following example from Hidatsa:

Hidatsa (Matthews 1965)

- (1) *Wíra i ápári ki stao ski.*  
tree it grow INGR REM.PST CERT  
'The tree must have begun to grow a long time ago.'

In this example the relative order of the tense, mood, and aspect (TAM) markers with respect to the predicate is ingressive - remote past - certainty. In terms of a layered approach to grammar this may be interpreted as a result of the fact that there are differences in scope between them: ingressive, specifying the internal temporal structure of the event, is within the scope of remote past, specifying the external temporal structure of the event. Both are in the scope of certainty, which qualifies the content of the message as a whole. These scope relations may be indicated as in (2):

- (2) certainty (remote past (ingressive (predicate+arguments)))

It is not the absolute linear order but the relative order with respect to the predicate that is predicted to correlate with scopal layers. Thus, the order of the relevant TAM markers in the English translation of example (1) is the mirror-image of the one in the Hidatsa original. Note that the correlation between scopal layers and the relative order of TAM (and E: evidentiality) markers holds under restricted conditions, namely only to the extent that TAME markers are expressed using the same morphological strategy. Thus the prediction holds for e.g. all affixal expressions among themselves, all particles among themselves, all auxiliaries among themselves, all clitics among themselves, but not for combinations of e.g. affixes, auxiliaries, and particles.

### 2.2. Layers

In Functional Discourse Grammar scope relations are defined in terms of different pragmatic and semantic layers. Pragmatic layers together constitute the interpersonal level in this model, while semantic layers together constitute the representational level.

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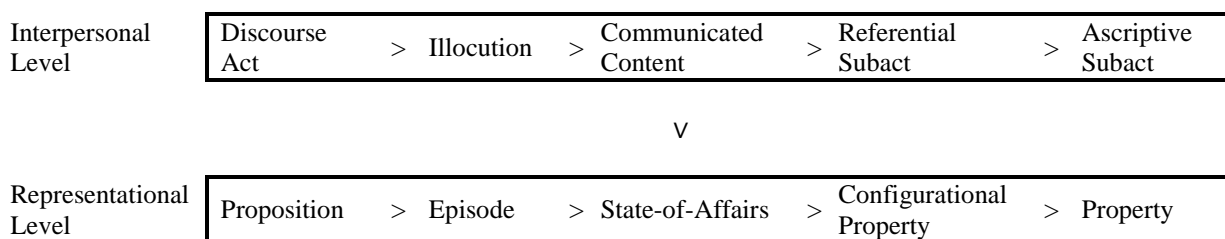
<sup>1</sup> This section is largely based on Hengeveld (2011).

<sup>2</sup> This assumption is prominent in Role and Reference Grammar (Foley & Van Valin 1984), Usage-based Grammar (Bybee 1985), Functional (Discourse) Grammar (Hengeveld 1989; Boland 2006; Hengeveld & Mackenzie 2008), and Generative Grammar (Pollock 1989; Cinque & Rizzi 2010). A major difference between these approaches is that in Usage-based Grammar and Functional (Discourse) Grammar layers are defined in semantic terms, while in Role and Reference Grammar and Generative Grammar they are defined in positional terms. For a detailed comparison between various approaches to layering see Narrog (2009) and for the relation between layering and grammaticalization Narrog (2012: 89f).

At the interpersonal level scope relations are defined in terms of different pragmatic layers. The ones that are relevant for our argumentation below are, working inside out, the *ascriptive subact* and the *referential subact*, which are the building blocks of the communicated content; the *communicated content* itself, which represents the message transmitted in an utterance; the *illocution*, which specifies the communicative intention of the speaker; and the *discourse act*, which is the basic unit of communication.

At the representational level scope relations are defined in terms of different semantic layers. Working inside out again, the layers that are relevant for the argumentation below are the *property* expressed by a lexical element; the *configurational property*<sup>3</sup>, which consists of the lexical element and its argument(s) and as such provides the basic characterization of a state-of-affairs; the *state-of-affairs*, which is the situated real or hypothesized situation the speaker has in mind; the *episode*, which is a thematically coherent combination of states-of-affairs that are characterized by unity or continuity of time, location, and participants; and the *proposition*, which is a mental construct entertained about an episode.

The layers within each level are hierarchically related and so are the levels among themselves. These hierarchical relations are indicated in Figure 1.



*Figure 1.* Scope relations in FDG

Figure 1 shows the hierarchical relations between layers and levels, with the symbols ‘>’ and ‘v’ showing the directions in which layers and levels have scope over one another. Thus, the Interpersonal Level has scope over the Representational Level, and within each level layers more to the left have scope over layers more to the right.

### 2.3. Operators, modifiers, and functions

All layers introduced in section 2.2 have a basic content which may be further specified by operators, modifiers, and functions. Operators capture specification by grammatical means, as in the case of e.g. TAME expressions; modifiers capture specification by lexical means, as in the case of e.g. modal, temporal, and locative adverbs. Functions, finally, express a relation of the layer under consideration with another linguistic unit, as in the case of e.g. causal and conditional conjunctions. Operators, modifiers, and functions are associated with the layer to which they semantically belong. For instance, expressions of subjective propositional attitudes are associated with propositions, since only propositions can be mentally evaluated; illocutionary adverbs are associated with illocutions as they specify the manner in which the speech act is being carried out; and temporal conjunctions are, depending on their relative or absolute nature, associated with states-of-affairs or episodes respectively. There is no space here to give a full motivation of all

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<sup>3</sup> In Hengeveld (2011) I used the term ‘situational concept’ for what was originally called a Configurational Property in FDG. I now believe the original term to be more appropriate.

distinctions. Table 1 list the ones that have been argued for in Hengeveld and Mackenzie (2008), Hengeveld and Hattner (2015), and Hattner and Hengeveld (2016).

*Table 1. Operators, modifiers and functions in FDG*

<i>Interpersonal Level</i>	<i>Discourse act</i>	<i>Illocution</i>	<i>Communicated Content</i>	<i>Referential Subact</i>	<i>Ascriptive Subact</i>
Operators	illocutionary modification	basic illocution	reportativity, approximation, mirativity	approximation	approximation
Modifiers	style, enumeration	manner of speech act	source, attitude	source, attitude	source, attitude
Functions	motivation, consent, orientation, correction	—	informational status	informational status	informational status
<i>Representational Level</i>	<i>Propositional Content</i>	<i>Episode</i>	<i>State-of-Affairs</i>	<i>Configurational Property</i>	<i>Property</i>
Operators	inference, subjective epis-temic modality	absolute tense, deduction, objective epistemic modality	event quantifi-cation, relative tense, event perception, event-oriented modality	phasal aspect, (im)perfectivity, participant-oriented modality	directionality, degree
Modifiers	propositional attitude	absolute time	relative time, location, frequency, reality, cause, purpose	additional participants, manner, duration	manner, degree
Functions	condition, concession reason	cause	purpose, consequence	means	—

New in Table 1 is the assignment of mirativity to the class of operators that operate on the communicated content.<sup>4</sup> This is warranted by the fact that mirativity has to do with the informational status, more specifically the newsworthiness, of the content of a speech act (see Hengeveld and Olbertz 2012).

### 3. Contentive change

#### 3.1. Introduction

In grammaticalization processes both the meaning and the form of an element may change, though not necessarily simultaneously, as I will argue below. In this section I look at the contentive changes that an element may undergo in grammaticalization. The main claim is that contentive changes are always changes that lead to an increase in scope, a point also made in Narrog (2012: 89f). As indicated in Figure 1, and in terms of the FDG framework used here, scope increase may apply in three different ways: within levels, scope increase may take place at

<sup>4</sup> I am grateful to Hella Olbertz for suggesting this to me.

(i) the representational level (§ 3.2) or at (ii) the interpersonal level (§ 3.3). Across levels, (iii) scope increase may take place from the representational to the interpersonal level (§ 3.4). Grammaticalization starts out when a lexical element enters the grammatical system. This process will be looked at separately in § 3.5. The different processes are brought together in an overall model of grammaticalization paths in § 3.6.

### 3.2. Scope increase at the representational level

In Hengeveld (1989: 142) I argue that semantic units develop diachronically from lower to higher layers, and not the other way round. This observation provides a more formal characterization of what Traugott (1982: 253) calls a development from ‘less personal to more personal’ and Bybee (1985: 19) from ‘less general to more general’. In terms of the categories discussed above this means that the prediction is that contentive change at the representational level occurs along the following pathway:

(3) Proposition ← Episode ← State-of-Affairs ← Configurational Property ← Property

There are several examples of this development in the literature. A well-known case is that of English *will* (Bybee, Pagliuca and Perkins (1991). *Will* started out as a lexical verb before becoming an expression of obligation/intention (participant-oriented modality, at the layer of the configurational property), then developed into a posterior marker (relative tense, at the layer of the state-of-affairs), then into a future (absolute tense, at the layer of the episode), and finally acquired suppositional readings (epistemic modality, at the layer of the propositional content). Less well-known is the case of Spanish *capaz*, as described in Grández-Ávila (2010b), that I will describe in some detail here.

*Capaz* is originally an adjective referring to capacity both in an aptitudinal sense and a spatial sense, as in the following examples from the 15<sup>th</sup> century:

(4) *maestro famoso, sutil e capaz*  
 master famous keen and skilful  
 ‘a famous master, keen and skilful’ (Anónimo, *Danza general de la muerte* [Spain 1430])

(5) *otra casa más anchurosa y capaz*  
 other house more wide and capacious  
 ‘another bigger and more capacious house’  
 (Ribadeneira, *Vida de San Ignacio de Loyola* [Spain 1583])

From this lexical use it developed several grammatical uses:

— *Facultative participant-oriented modality*. From 1500 onwards the adjective *capaz* came to express facultative participant-oriented modality (Grández-Ávila 2010: 17). A participant-oriented modality is one that specifies a relation between the potential realization of a state-of-affairs and a participant in that state-of-affairs. This is illustrated in the following example:

- (6) *Ese hombre es capaz de componer bell-os poema-s*  
 DEM man COP.PRS.3.SG capable of write.INF beautiful-M.PL poem(M)-PL  
 ‘That man is capable of writing beautiful poems.’

This type of modality is located at the layer of the configurational property in FDG.

— *Facultative event-oriented modality*. From 1700 onwards *capaz* comes to express another type of facultative modality (Grández-Ávila 2010b: 21), one in which the general enabling conditions of a state-of-affairs are specified, as in:

- (7) *Solo así, es capaz de form-ar=se una idea de lo*  
 only thus COP.PRS.3.SG capable of form-INF=REFL INDF idea of NMLZ  
*mucho que ha declin-ado la producción.*  
 much CNJ AUX.PRS.3.SG decline-PST.PTCP DEF production  
 ‘Only in that way, is it possible to form an idea of how much the production has declined.’

This type of modality is located at the layer of the state-of-affairs in FDG.

— *Objective epistemic modality*. From 1800 onwards *capaz* comes to express objective epistemic modality, more specifically, objective epistemic possibility (Grández-Ávila 2010b: 26). In this type of modality a situation is objectively evaluated in terms of its likelihood of occurrence in terms of what is known about the world. This is illustrated in the following example:

- (8) *Es capaz que nadie vaya a su casa.*  
 COP.3.SG capable CNJ nobody go.SBJV.NONPST.3.SG to his house  
 ‘It is possible/likely that nobody visits him.’

This type of modality is located at the layer of the episode in FDG.

— *Subjective epistemic modality*. After 1950 *capaz* acquired a further use, one in which the speaker uses it to express his subjective commitment with respect to the content of his utterance (Grández-Ávila 2010b: 29). This use is illustrated in (14):

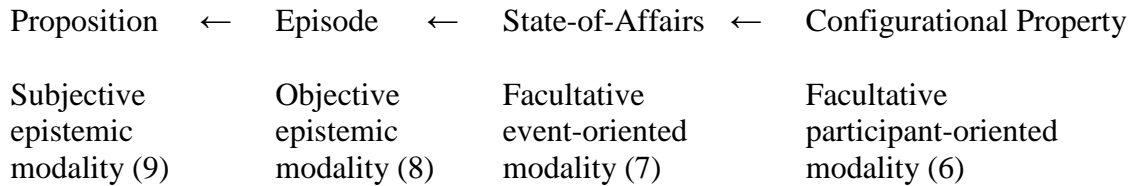
- (9) *Capaz que era un vago que no quería*  
 capable CNJ COP.PST.IPFV.3.SG INDF idler CNJ NEG want.PST.IPFV.3.SG  
*hacer nada.*  
 do.INF nothing  
 ‘Maybe he was an idler who didn’t want to do anything.’

This type of modality is dealt with at the layer of the propositional content in FDG.

Note that the different uses also bring along different formal properties of the constructions in which *capaz* occurs. In the facultative modalities *capaz* is used with the copula and followed by the preposition *de*. In its objective epistemic use it is used with the copula and followed by the conjunction *que*. And in its subjective epistemic use it is followed by the conjunction *que* too, but in this use the copula is absent.

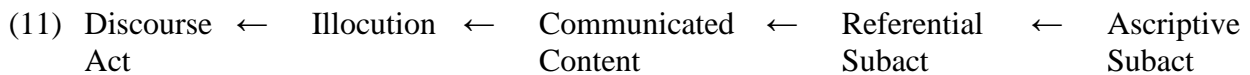
It may thus be concluded that *capaz* developed along the lines predicted in (3), as represented in (10):

(10) Historical development of *capaz* as a modal marker



3.3. Scope increase at the interpersonal level

FDG also recognizes an interpersonal level, and it seems attractive to extend the analysis applied in the previous subsection to this level as well. The claim would then be that pragmatic units, too, develop diachronically from lower to higher layers, and not the other way round. In terms of the categories discussed above this means that the prediction is that contentive change at the interpersonal level occurs along the following pathway:



It is much harder to come up with examples of historical evidence for this pathway, as empirical research into the categories that characterize layers at the interpersonal level has not been carried out systematically. Yet there is a phenomenon that can be observed synchronically that seems to support this hypothesized pathway. This concerns the use of *sort of* in English, as described in Hengeveld and Keizer (2011). *Sort of* can be used in three different configurations. The most common use seems to be the one illustrated in (12):

(12) *We're looking for a sort-of manager to book us shows.*<sup>5</sup>

In this use *sort of* directly modifies a lexical element, in this case *manager*, and has the function of indicating that this lexical element only approximately designates what the speaker has in mind. The lexical item *manager* is characterized as not being fully appropriate for what the speaker has in mind. In FDG terms *sort of* is in cases like (12) said to operate at the layer of the ascriptive subact, as it is the appropriateness of the ascription of a property that is at stake here.

This construction may be compared to the following one:

(13) *I think I can more or less understand in general terms what happens up until sort of the impressionist time, maybe just post-impressionist.*<sup>6</sup>

In this example *sort of* precedes the determiner *the*, which is indicative of the fact that in this use it has scope over the entire noun phrase *the impressionist time*, which in this case serves as a measure that is roughly indicative of the end point of the period about which the speaker has

<sup>5</sup> <http://www.pandahi.com/1016843689.html>, consulted 22 April 2015.

<sup>6</sup> British National Corpus (BNC).

some understanding. In FDG *sort of* is in cases like this said to operate on the referential subact, as the unit being modified is referential in nature.<sup>7</sup>

A third use of *sort of* is illustrated in (14):

(14) *McCain backtracks on gay adoption, sort of.*<sup>8</sup>

In this example *sort of* modifies the entire preceding utterance, it qualifies this utterance as expressing approximately what the speaker has in mind. In FDG terms, *sort of* modifies the communicated content, the message transmitted by the speaker, in this example.

It does not seem too far-fetched to assume that the use of *sort of* illustrated in (12) is the original one, as it comes closest to the lexical behaviour of *sort of* when directly modifying a noun. From there it could have developed to modify noun phrases as a whole, as in (13), and then would have extended its use to the utterance as a whole, as illustrated in (14). The full hypothesized pathway of the development of the uses of *sort of* may thus be represented as in (15), which covers three of the five interpersonal layers distinguished in (11):<sup>9</sup>

(15) Communicated Content      ←      Referential Subact      ←      Ascriptive Subact  
       Approximate message                      Approximate reference                      Approximate ascription

### 3.4. Scope increase across levels

Hengeveld and Wanders (2007, see also Sweetser 1990: 76ff) state that semantic units may develop diachronically into pragmatic units, and not the other way round. In this case there is vertical scope increase, in the sense that elements from the —lower— representational level develop into elements of the —higher— interpersonal level. This may be represented schematically as in (16):

(16)            Interpersonal Level  
                   ↑  
                   Representational Level

They also argue that an element does not have to grammaticalize all the way up the representational level before it can move to the interpersonal level, but can cross over from any intermediate position as well. The vertical development sketched in (16) thus truly interacts with the horizontal developments represented in (3) and (11). The examples they provide concern the use of causal adverbial conjunctions (Hengeveld and Wanders 2007: 221):

(17) *Providing food assistance is not easy because the infrastructure is lacking.*

<sup>7</sup> For the general idea that grammaticalization in the noun phrase involves increasing (inter)subjectification see Ghesquière (2014).

<sup>8</sup> <http://hotair.com/archives/2008/07/15/mccain-backtracks-on-gay-adoption-sort-of/>, consulted 22 April 2015.

<sup>9</sup> There is quite some work on the grammaticalization of *sort of* (e.g. Denison 2005, Brems & Davidse 2010), but these papers do not track the development of the three uses discussed here individually, though Davidse et al. (2013: 57) seems to suggest that the use of *sort of* to modify sentences as a whole is posterior to the other two uses represented in (15).



(18) *Watch out, because there is a bull in the field!*

In example (17) two pieces of information are causally related: one piece of information (*the infrastructure is lacking*) is used to back up another piece of information (*providing food assistance is not easy*). The relation in (17) can therefore be said to obtain between two propositional contents, mental constructs, that are layers at the representational level.

In (18), on the other hand, two speech acts are causally related: one speech act, the explanation *there is a bull in the field*, is used to motivate another speech act, the warning *watch out*. The fact that we are dealing with two different speech acts is also evident from the fact that the illocutionary values of the two parts are different: the warning takes the form of an imperative, the explanation the form of a declarative. Speech acts are represented in FDG as discourse acts at the interpersonal level.

The prediction, following Hengeveld and Wanders' claim, would then be that (18) is more grammaticalized than (17). And this can indeed be shown to be the case. Consider (19) and (20):

(19) *Providing food assistance is not easy exactly because the infrastructure is lacking.*

(20) *\*Watch out, exactly because there is a bull in the field!*

Conjunctions that retain (part of) their descriptive use allow modification, a criterion for lexical status that will be presented in Section 4 below. The conjunction *because* allows modification by an adverb of degree in (19), but not in (20). This shows that the occurrence of *because* in (20) displays a higher degree of grammaticalization than the occurrence of *because* in (19), as predicted by (16).

Another example of the same phenomenon is provided by Souza (2009). He studies, among other things, the grammaticalization of *aí* in Brazilian Portuguese, which started out as a locative adverb and acquired many other functions during its history. Originally, these additional functions were all representational in nature, but more recently *aí* has acquired an interpersonal function as well, as illustrated in (21):

(21) *um livro aí de suas cem páginas*  
INDF.SG.M book there of POSS.3.PL.F hundred pages  
'a book of a hundredish pages'

The function of *aí* illustrated in (21) is an approximative use, like the one illustrated for *sort of* above. By using *aí* the speaker indicates that he/she is not aware of the precise number of pages and that, therefore, the modifier *de suas cem* 'of its hundred' is an approximation. This is captured in FDG through an approximative operator at the layer of the ascriptive subact at the interpersonal level.

### 3.5. From lexical to grammatical element

Much of the grammaticalization literature (e.g. Lehmann 1982b; Heine 1993; Bybee et al. 1994; Olbertz 1998; Kuteva 2001; Keizer 2007; Krug 2011) focuses on yet another, fourth, pathway of grammaticalization, which involves the fundamental change of a lexical element into a grammatical element. The examples in the previous sections may have suggested that lexical elements

turn into grammatical elements only at the lowest possible layers. This is not the case: lexical elements may change into grammatical ones at any point in the hierarchies just presented. This is mainly due to the fact that a common source for grammaticalization is found in complementation constructions, in which the erstwhile complement taking predicate turns into a grammatical element. Now depending on the underlying complexity of the erstwhile complement, the grammatical element will enter the grammatical system at different layers. For instance, a perception verb expressing direct event perception may turn into an operator at the layer of the state-of-affairs, a lexical modal verb expressing an epistemic attitude may turn into an operator at the layer of the propositional content, and a speech act verb may turn in an operator of reportative modality at the layer of the communicated content. A number of concrete examples follow.

Mackenzie (2009) discusses the case of English *fail*. In its lexical use, this verb requires an intentional agent, the one that would like to but does not succeed in reaching a specific goal. This use is illustrated in (22):

(22) *He failed to win the race.*

There is another use, however, in which *fail* does not impose such a restriction. This use is illustrated in (23):

(23) *The bomb failed to explode.*

In this use there is no intentional agent trying to achieve a particular goal. As Mackenzie argues, *fail* is equivalent here to regular negation, as in (24):

(24) *The bomb didn't explode.*

Mackenzie shows that *fail* is a negative operator at the layer of the configurational property. This means that *fail* has entered the grammatical system at that particular layer, rather than at the lowest one, that of the property.

A second example of the process from lexical to grammatical element is that of Spanish *dizque* (Olbertz 2005, 2007; Grández Ávila 2010a). This particle is found in many different varieties of Latin-American Spanish, and derives from the lexical expression *dicen que* 'they say that'. There has thus been a development as sketched in the following examples:

(25) *Dicen que Juan está enferm-o.*  
 say.IND.PRS.3.PL CNJ Juan(M) COP.IND.PRS.3.SG ill-M.SG  
 'They say that Juan is ill.'

(26) *Dizque Juan está enferm-o.*  
 REP Juan(M) COP.IND.PRS.3.SG ill-M.SG  
 'Reportedly Juan is ill.'

Note that in this process the construction has changed from a bi-clausal into a mono-clausal one. Reportativity is treated in FDG as an operator at the interpersonal level, more specifically at the layer of the communicated content. The grammatical element here thus enters the system at a hierarchically high level and doesn't pass through any lower steps.

### 3.6. A model of contentive change

From the combination of all four potential pathways sketched above, the model of contentive change presented in Figure 2 arises<sup>10</sup>. Figure 2 defines various possible pathways of contentive change, but is at the same time highly restrictive. Lexical items may enter the system at any point, but once this point has been selected they cannot move down to a lower point on the interpersonal or representational scale. Items can move up from the representational level to the interpersonal level at any point, but once they have entered the interpersonal level they cannot move down the interpersonal scale. Note that all examples provided in the previous sections can be translated into contiguous pathways through the combination of clines in Figure 1.

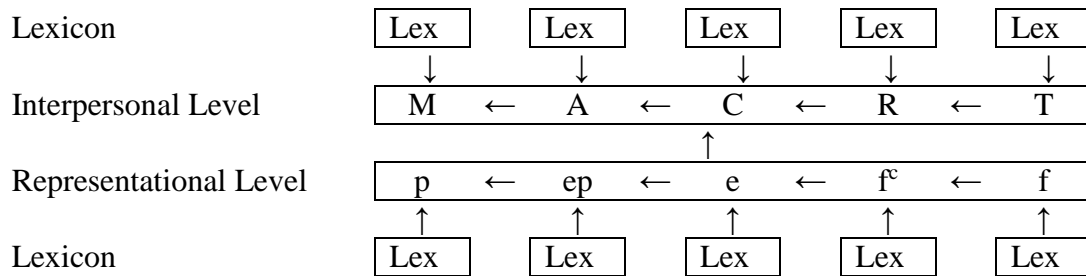


Figure 2. A model of contentive change

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An interesting illustration of the working of the interacting pathways in Figure 2 concerns the development of the Spanish auxiliary *haber* (Olbertz 1993, 2012). The development of this auxiliary followed different pathways in Peninsular Spanish on the one hand and Ecuadorean Highland Spanish on the other.

*Haber* started out as a lexical verb meaning ‘to have/to possess’. It then passed through a number of stages, described one by one in what follows.

— *Resultative*. The first grammaticalized use of *haber* in Spanish is that of a resultative auxiliary, a use it no longer exhibits but that has now been taken over by the verb *tener* ‘to hold’. This use of *haber* is illustrated in (27):

- (27) *vna muyt grant quantidat de oro que yo he prometi-da*  
 INDF.F.SG very big quantity(F) of gold that I have.1.SG.PRS promise-PST.PTCP.F  
*a-l dich-o sacerdote*  
 to-DEF.M.SG aforementioned-M.SG priest

<sup>10</sup> M = move, A = discourse act, C = communicated content, R = referential act, T = ascriptive act, p = propositional content, ep = episode, e = state-of-affairs, f<sup>c</sup> = configurational property, f = property, Lex = lexeme.

‘a very big quantity of gold that I have promised to the priest’ (Juan Fernández de Heredia, *Historia troyana* [1376–1396])

This use is aspectual in nature: it describes the current state of the gold in relation to the anterior event of being promised to the priest. Note that the gold is still in the possession of the first person subject, so that there is a link to the original possessive meaning of *haber*. In FDG this use is captured by an operator at the layer of the configurational property, as the operator modifies the internal temporal constituency of a state-of-affairs. We may thus conclude that the lexical verb *haber* entered the grammatical system at the layer of the configurational property. This is shown by means of boldface in Figure 3.

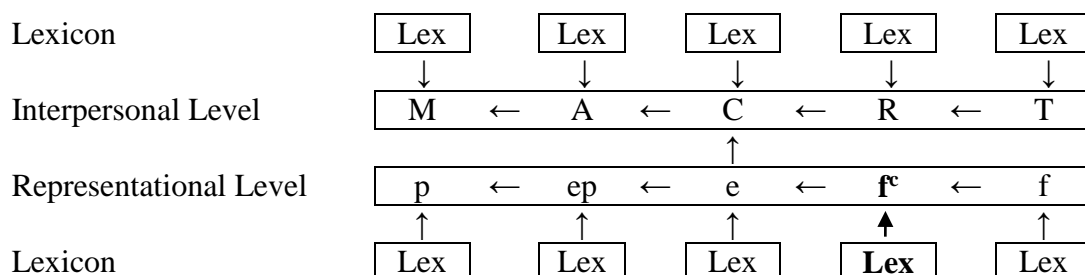


Figure 3. The grammaticalization of *haber* 1

— *Anterior*. In the subsequent use of *haber* as an auxiliary it expresses anteriority of an event with respect to another event. It thus expresses a relative temporal value, and can itself be combined with absolute tenses, as illustrated in (28):

- (28) *Había* / *he* / *habré* *prepara-do*  
 have.PST.1.SG / have.PRS.1.SG / have.FUT.1.SG prepare-PST.PTCP  
*una* *cena* *fenomenal*.  
 INDF.SG.F meal(F) terrific  
 ‘I had/have/will have prepared a terrific meal.’

In these examples the combination of *haber* + past participle indicates anteriority with respect to the absolute temporal reference point expressed through the inflection of the auxiliary. Thus in (28) the event of preparing a meal is characterized as having occurred before a past/present/future reference point respectively. In FDG relative temporal distinctions are captured by operators at the layer of the state-of-affairs. Figure 4 shows this further development of *haber*.

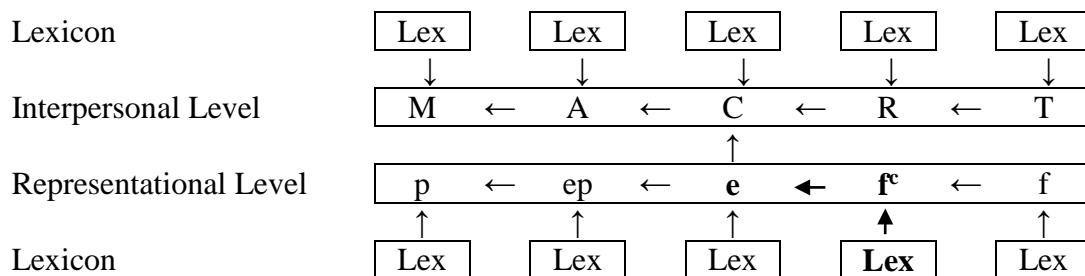


Figure 4. The grammaticalization of *haber* 2

— (*Hodiernal/Recent*) *past*. In Peninsular Spanish, a yet later use of *haber* as an auxiliary is in the expression of absolute hodiernal or recent past tense. This use seems to be present in all dialects of Peninsular Spanish, though the restrictions may be different. Kuteva (2001:37), citing Schwenter (1994: 93-94), provides the following example from Alicante Spanish:

- (29) *Me he levanta-do a las siete.*  
 1.SG.REFL AUX.PRS.1.SG get.up- PST.PTCP at the seven  
 ‘I got up at seven o’clock.’

The presence of the absolute temporal modifier *a las siete* here indicates that the sentence has an absolute temporal reference point. In earlier stages of Spanish the auxiliary construction would not be allowed to combine with such a modifier. In FDG absolute temporal distinctions are captured by operators at the layer of the episode. This absolute temporal use is excluded in Ecuadorian Highland Spanish, so Figure 5 represents the third stage of grammaticalization in Peninsular Spanish only:

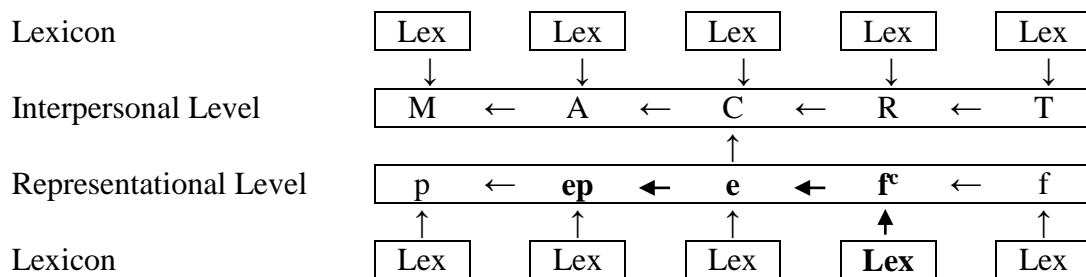


Figure 5. The grammaticalization of *haber* 3 – Peninsular Spanish

— *Mirative*. Olbertz (2012) describes yet another use of *haber* in Ecuadorian Highland Spanish, the mirative use, which is illustrated in (30):

- (30) *Mire, compr-ó estos, los prob-é ... y ..*  
 Look bought-IND.PST.PFV.3.SG these them tried-IND.PST.PFV.1.SG and  
*¡han sido peras!*  
 have.IND.PRS.3.PL COP.PST.PTCP pears  
 ‘Look, she bought these, I tasted them ... and ... they are pears!’

The construction with *haber* is used in (30) to indicate the surprise the speaker experienced when tasting a fruit that he/she did not suspect to be a pear. The grammatical category expressing surprise is usually called mirativity. In FDG it is located at the layer of the Communicated Content, as this category has to do with the informational status, more specifically the newsworthiness, of the content of a speech act. This mirative use is excluded in Pensinsular Spanish, so Figure 6 represents the third stage of grammaticalization in Ecuadorian Highland Spanish only:

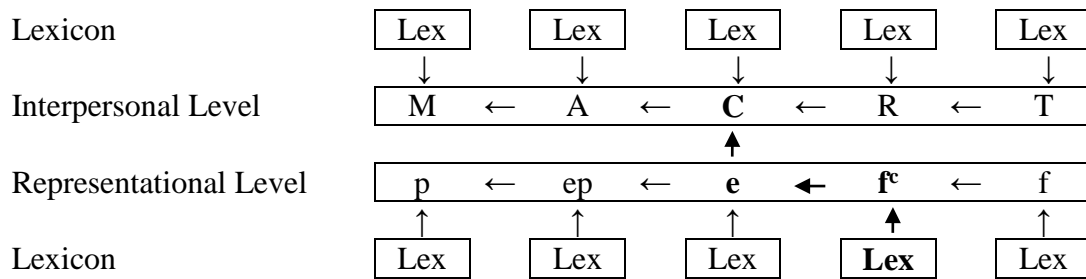


Figure 6. The grammaticalization of *haber* 3 — Ecuadorian Highland Spanish

The different developments of the uses of *haber* as an auxiliary in Peninsular and Ecuadorian Highland Spanish thus nicely illustrate the interaction between the different pathways integrated in Figure 2: while in Peninsular Spanish *haber* in the third stage of its development continued along pathway (3) (scope increase at the representational level), in Ecuadorian Highland Spanish it followed pathway (16) (scope increase across levels), thereby ending up at the interpersonal level.

#### 4. Formal change

It has often been claimed in the literature on grammaticalization that contentive change and formal change go hand in hand. This has been termed the ‘parallel path hypothesis’ by Siewierska and Bakker (2005) and can be found, for instance, in Traugott (1980: 47), Lehmann (1982a: 239), and Bybee et al. (1994: 21); see also van Rijn (forthc.) for discussion. The formal changes are then often described in terms of clines such as the one in (31) (cf. Siewierska 2004: 262):

(31)  $\emptyset < \text{fusional form} < \text{agglutinative affix} < \text{clitic} < \text{grammatical word} < \text{content item}$

This cline should be read from right to left, and the prediction is that in grammaticalization a content item first changes into a grammatical word, then cliticizes, then agglutinates, then fuses, and finally disappears. The parallel path hypothesis furthermore states that these formal changes are directly related to contentive changes in a one-to-one relationship.

The parallel path hypothesis was challenged in Bisang (2004) and Narrog (2005: 697, 2012: 107–109). The approach defended here is incompatible with the parallel path hypothesis too. First of all, the treatment of pathways of contentive change given above conflicts with the idea of a necessary parallelism between contentive and formal change for an obvious reason: if lexical elements may enter the grammatical system at any layer/level, then there cannot be a one-to-one relation between formal changes and layers/levels. But there is a further reason to not accept clines such as the one in (31), which is that the morphological type of a language severely restricts the possible pathways of formal change. In languages of the isolating morphological type the cline in (31) could never be completed beyond the grammatical word or perhaps the clitic. Yet one would not want to say that there is no grammaticalization in the sense of contentive change in isolating languages, a point made convincingly in Ansaldo and Lim (2004). Similarly, in agglutinating languages the cline in (31) could never be completed beyond the agglutinative affix, and again, this cannot be said to correlate with the lack of a final step of contentive change. In all, (31) suggests that full grammaticalization is only possible in fusional languages.

An alternative approach to formal change takes the functional behaviour of the grammaticalized item into account. Such an alternative is presented in Keizer (2007) who, using the framework of FDG, defines a scale of formal change containing three categories: lexemes, lexical operators, and operators. Lexemes are fully lexical, operators fully grammatical, and lexical operators occupy an intermediate position. Keizer (2007) departs from a long list of partially overlapping characteristics given in the literature on grammaticalization to distinguish between the three categories, but I will take only two here as criterial and distinguishing properties: modification and focalization.

An element that is fully lexical is the head of a phrase and can therefore be modified by other lexical elements. An element that is fully grammatical cannot be focalized as it is ‘discursively secondary’ (Harder and Boye 2011: 60), in the sense that it expresses secondary information. Now consider the behaviour of the three items *man*, *that*, and *a* in English with respect to their possibilities of being modified and focalized:

- |  |  |
|--|--|
| (32) lexeme ( <i>man</i> ):            | modification: an old man                     |
|  | focalization: (Who did it?) That MAN did it. |
| (33) lexical operator ( <i>that</i> ): | modification: *                              |
|  | focalization: (Which man?) THAT man          |
| (34) operators ( <i>a</i> ):           | modification: *                              |
|  | focalization: *                              |

On the basis of differences in behaviour such as these ones, Keizer (2007) proposes to distinguish the three categories of items in the following way within the FDG framework:

- |                                       |  |
|---------------------------------------|--|
| (35) lexeme ( <i>man</i> )            | ( $x_i$ : – <b>man</b> – ( $x_i$ ): – old – ( $x_i$ ))<br>‘the/an old man’ |
| (36) lexical operator ( <i>that</i> ) | ( <b>that</b> $x_i$ : – man – ( $x_i$ ))<br>‘that man’                     |
| (37) operator ( <i>a</i> )            | ( <b>1</b> $x_i$ : – man – ( $x_i$ ))<br>‘a man’                           |

That is, lexical operators are represented like operators in terms of their position, but like lexemes in the fact that they are given in their morphophonemic form rather than in terms of an abstract element.

On the basis of these categories a new cline of formal change may now be defined as in (38):

- (38) operators < lexical operators < lexemes

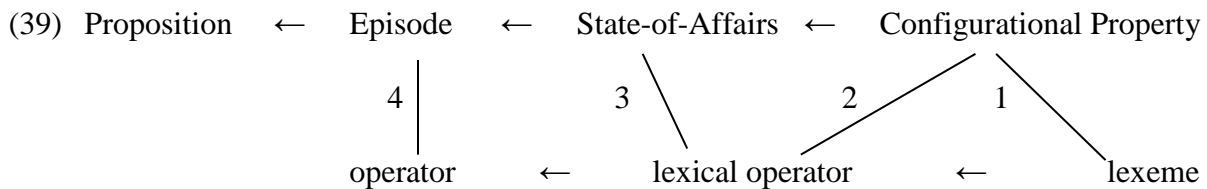
Note that this cline does not make reference to specific form classes, but rather refers to classes with a specific grammatical behaviour. This way it can be applied to languages of all morphological types, without the bias towards fusional languages that is present in clines of formal change such as (31).

## 5. Contentive and formal change

If the parallel path hypothesis is incorrect, the question is of course if there is a better way to characterize the interplay between pathways of contentive change and those of formal change. In this section I intend to show that there is. The major point to be made is that, as elements move up along a contentive scale, they need not move up along the formal scale; on the other hand, one would not expect an element to move down the formal scale in such circumstances either. In other words, an element that moves up a contentive scale will either move up the formal scale as well or stay where it is at the formal scale. Similarly, as elements move up along the formal scale, they need not move up the contentive scale, though they would not move down that scale either. So an element that moves up the formal scale will either move up the contentive scale as well or stay where it is at the contentive scale. In this way the scales of contentive change and the scale of formal scales may be linked in a relative fashion.

So the important generalizations are that, as elements move up or stay where they are on the contentive scale, they cannot move down the formal scale, and as they move up or stay where they are on the formal scale, they cannot move down the contentive scale. This allows a large number of combinations of contentive and formal change, of which I will illustrate just an expected scenario and two unexpected ones.

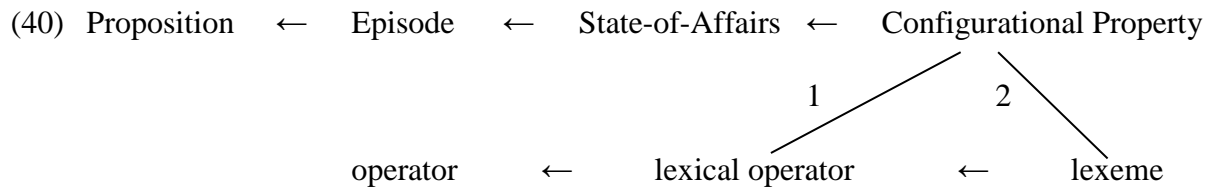
In (39) an expected mapping is given between the contentive scale at the representational level and the formal scale. Note that numbers indicate grammaticalization steps of a certain element:



In (39) a situation is depicted in which first a contentive category at the layer of the configurational property, say resultativity, is expressed through lexical means. In the second step the lexeme loses some of its lexical properties and changes into a lexical operator, so it moves up the formal scale. However, it keeps expressing the same resultative meaning, so it does not move up the contentive scale. In the third step the reverse happens: the element under consideration comes to express a contentive category at the layer of the State-of-Affairs, say anteriority, so it moves up the contentive scale. However, anteriority is still expressed through a lexical operator, so it does not move up the formal scale. The fourth step illustrates a parallel change, one in which the element under consideration comes to express a contentive category at the layer of the episode, say past tense, and thus moves up the contentive scale, while at the same time it changes from a lexical operator into an operator, and thus also moves up the formal scale. All the steps given here conform with the generalizations that, as elements move up or stay where they are on the contentive scale, they cannot move down the formal scale, and as they move up or stay where they are on the formal scale, they cannot move down the contentive scale.

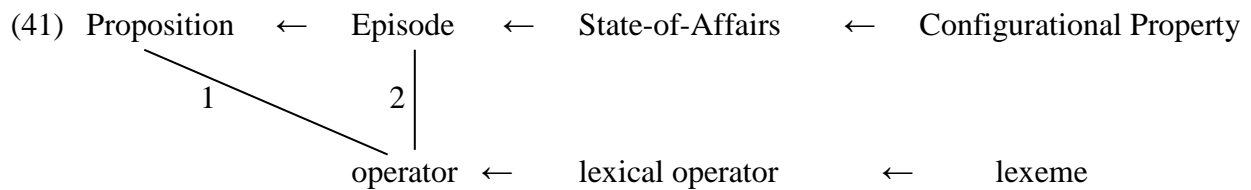
In (40) an unexpected mapping is given between the contentive scale at the representational level and the formal scale.





In (40) a situation is depicted in which first a contentive category at the layer of the configurational property, say intention, is expressed through a lexical operator. In the second step the lexeme gains lexical properties and changes into a lexeme, so it moves down the formal scale. Though it keeps expressing the same intentional meaning, this is a violation of the predicted correlation between contentive and formal change that says that, as elements move up or stay where they are on the contentive scale, they cannot move down the formal scale.

In (41) the reverse happens:



In the first step represented in (41) an operator expresses a category at the layer of the proposition, say prediction. In the second step the lexeme comes to express a category at the layer of the episode, say future tense, so it moves down the contentive scale. Though it is still expressed as an operator, this is another violation of the predicted correlation between contentive and formal change that says that, as elements move up or stay where they are on the formal scale, they cannot move down the contentive scale.

Note that various scenarios were illustrated here involving contentive change at the representational level. Using the same principles, similar scenarios could be constructed for contentive change at the interpersonal level and for contentive change across levels.

## 6. Conclusions

This paper has shown that FDG offers a framework within which known processes of grammaticalization can be captured. Contentive change is predicted, following FDG's hierarchical organization, to be restricted to those processes that lead to scope increase both within and across levels. Formal changes can be captured in a crosslinguistically valid way by adopting Keizer's grammaticalization scale rather than traditional ones. Finally, contentive and formal scales can be linked in a typologically adequate way by assuming a relative rather than absolute relationship between them.

### Uncommon abbreviations

CERT = certainty, CNJ = conjunction, FUT = future, IND = indicative, INGR = ingressive, NONPST = non-past, REM = remote, REP = reportative.

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