

THE IMPLEMENTATION OF GRAMMATICAL FUNCTIONS IN FUNCTIONAL DISCOURSE GRAMMAR

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- **ABSTRACT:** In standard FG (DIK, 1997) grammatical functions are assigned directly to the underlying representation in a more or less across the board fashion, only taking into consideration the language dependent semantic function hierarchy. This approach bypasses a number of constraints on subject assignment that may be gathered from typological data, and observed from the actual behaviour of speakers. In this contribution, we make an attempt to reinterpret FG syntactic functions in the light of the FDG model. Following ideas from Givón (1997), we propose a treatment of Subject assignment on the basis of a combination of semantic and pragmatic factors of the relevant referents and other functional aspects of underlying representations. The assignment rules adhere to the respective hierarchies as discussed in the typological literature. In our proposal, Subject (and Object) assignment are now located in the expression component, more specifically in the dynamic version of the expression rules as proposed in Bakker (2001).
- **KEYWORDS:** Subject assignment; alignment; multifactor approach; dynamic expression rules; typological hierarchies.

1 Introduction

In the grammar model of Functional Grammar as presented in Dik (1997, p.60) the fully specified underlying clause (FSUC) is an amalgamation of all functional information necessary to derive the morphosyntactic structure of the corresponding expression. The proposition and embedded layers provide the semantics. The illocutionary layer represents the speech act information. Furthermore, all three types of functions, which are crucial for the determination of the shape and order of noun phrases, are coded in the FSUC. Semantic functions are found on all layers. Pragmatic functions are attached to elements of the full

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FSUC in as far as their targets are of a semantic nature. And syntactic functions, if at all relevant for the language are attached to arguments and/or adjuncts.

In the FDG model (HENGEVELD, 2004) a clear distinction is made between the underlying pragmatic and semantic representations, labelled interpersonal and representational level, respectively. As opposed to the grammar model, pragmatic functions are assigned independently to the relevant referents on the basis of discourse information. The pragmatic component interacts directly with the expression rules, bypassing the semantics. There are several reasons to also remove the syntactic functions from the representational level. Firstly, this would lead to a 'clean', purely semantic representation rather than a mixed bag of semantics and syntax. Secondly, and more importantly in the grammar model, syntactic function assignment as it stands is not really part of syntax in the sense that only the side effects are found in form while the explanation for it is located outside the grammar altogether. FG interprets Subject and Object as a primary and secondary vantage point or *perspective* on the state of affairs as presented in the utterance. Furthermore, there is the requirement of *choice*, i.e. the presence of full-fledged passive and dative shift constructions, which may change the respective vantage points and allow the demoted arguments to be expressed, at least optionally. The latter is a necessary – though not a sufficient – condition on the presumed integrity of meaning under alternative syntactic function assignment. Finally, for languages which have syntactic functions in the first place, their assignment is restricted to some language specific subset of the arguments and first order satellites, obeying the Semantic Function Hierarchy (SFH). Given these constraints, there is only a restricted number of languages in the world which actually have a Subject, and even less languages with an Object, as argued in Siewierska (1998).³ The single factor which determines the choice of Subject and Object, i.e. perspective is a non-grammatical notion. This seems to make the syntactic function assignment mechanism an extra-clausal device, possibly even an extra-linguistic one. If considered to be extra-clausal but intra-linguistic, perspective could be interpreted as a third kind of pragmatic function. Subject and Object would then be its interpretation at the clausal level, much in the way the respective types of sentential utterance Topic and Focus are the clausal implementation of the discourse notions of Topicality and Focality. If perspective is basically taken to be an extra-linguistic phenomenon, syntactic function assignment could then be seen as part of the more general cognitive processing of linguistic material. In that case, perspective would not be a direct object of study for a theory of grammar. It would exist only in terms of the morphosyntactic side effects which are subsumed under the notions Subject

³ Of the 430 languages represented in the database on person marking and agreement discussed in Siewierska and Bakker (2007) only around 25% would have a Subject in terms of FG, and probably under 5% would have an Object.

and Object, much in the way that forces such as *economy* and *iconicity* are assumed to be operating on grammars. Unlike the latter two however, perspective, as an independent take of the speaker on the state of affairs, would not work mainly diachronically but would actively interfere with morphosyntax, bypassing the pragmatic and semantic make up of the actual sentence under expression. But if it were to operate directly from a high cognitive level, then it would be remarkable that so few languages would implement such a general cognitive notion in their grammars.⁴ On top of this, perspective typically employs formal devices such as case marking, verb agreement, variation in constituent order and several syntactic operations such as conjunction reduction and equi-NP deletion which are in fact very common in languages across the board. These formal phenomena are related to clausal semantic and pragmatic factors for the great majority of the languages which do not have syntactic functions FG-style. The same seems to be the case for a number of related grammatical phenomena that are not controlled by syntactic functions for languages which do have them.

In short, we think that for the explanation of syntactic functions and their actual assignment to clauses, and for grammatical relations in general, there is no real need for an independent notion such as perspective, whether it is seen as a discourse or as a cognition related concept. Therefore, in this contribution an attempt will be made at locating the assignment of syntactic functions where they most naturally fit in an FDG type grammar: in the expression rule component. A central assumption, much in the vein of Givón's (1997) multifactor approach, and *contra* Dik (1997, p.250 f) will be that Subjects (and Objects) can be assigned fully on the basis of purely linguistic factors in all languages for which these notions are relevant in the first place. In other words: we will assume that they can and should always be assigned and explained on the basis of some language dependent constellation of pragmatic and semantic properties of the sentence under expression rather than on the basis of a single unifying abstract notion. Furthermore, it is the same set of functional factors that operates behind related morpho-syntactic phenomena that are not controlled by a grammatical function. As a result a separate notion of perspective is superfluous, though it may be used as a descriptive term that generalizes over the respective sets of functional properties controlled by Subject and Object in the relevant languages.⁵

⁴ This point is probably acknowledged in Dik (1997, p.254) when he argues that "a full theory of 'perspective' will have to take into account (i) the basic perspective of the predicate frame; (ii) the possible influence of predicate formation rules; (iii) modulations of perspective effected by Subj/Obj assignment; (iv) the influence of pragmatic function assignment." We will come back to some of these points below.

⁵ Working within FG, Itagaki and Prideaux (1985) show that certain semantic aspects of terms, notably animacy and concreteness, determine Subject assignment to a high degree. Dik (1997, p.279) picks up on this stating that the chance of Subject and Object assignment to a term is influenced by a number of priorities related to definiteness, person, number, animacy and others. In all cases these factors are seen as codetermining factors or historical factors rather than an alternative for the SFH.

There will be two further points of departure, which moreover are fully in keeping with the current development of the FDG model. The first one is that a discourse orientation is taken rather than a sentence one. Although no coherent proposal has been made for the precise representation of discourse structure within FG so far, we will take the availability of such a representation parallel to the familiar underlying structures for sentences for granted, and will assume that it has certain properties necessary for the present exercise. Secondly, it will be assumed that performance rather than competence is the decisive level on which the acceptability of utterances is eventually decided on. In practice this means that in order to decide whether Subject may be assigned to some constituent in a language a corpus of actual spoken data should be taken into consideration rather than intuitions of native speakers about individual constructed sentences. Although these two points seem to belong to the basics of FG theory (cf. DIK, 1997, p.1 ff), in actual implementations of the theory they have been made explicit relatively rarely so far. Two notable exceptions are the corpus related investigations by Butler (1999, 2003) and Mackenzie's (1998) work on elliptic utterances, where both a discourse situation is assumed and language behaviour rather than knowledge is the norm.

Since English seems to be one of the languages where grammatical functions are highly grammaticalized and entrenched in the morphosyntax, it is this language which will be the ultimate test bed for this exercise. We will, however, resort to examples from other languages in order to safeguard typological adequacy at least to some extent.

The rest of the text is structured as follows. In section 2 we will propose an integrated framework for grammatical relations of which syntactic functions are a subcategory and which is partially based on ideas from work in FG and two related functional theories, RT and RRG. In section 3 we will try to implement that framework in the FDG model. Section 4 presents our conclusions.

2 An integrated framework for Grammatical Relations

The debate on the status of Subject and Object in linguistic theory and description is a long standing one. In the respective versions of formal theory, Subject and Object are typically treated as 'deep' syntactic positions, on which different constituents may land via the application of transformational rules. Relational Grammar (PERLMUTTER, 1982) shares this double deep-to-surface aspect of Subject and Object, be it that in this case there are links with semantic and pragmatic aspects of the clause structure.

Two current functional approaches to grammatical relations seem to be more relevant for the current discussion: Kibrik's (1997) Relational Typology (RT) and Van Valin and LaPolla's (1997) Role and Reference Grammar (RRG). Just like FG, RT and RRG treat Subject (and Direct Object and possibly Indirect Object) as grammatical functions, which link elements of semantic deep structure – typically arguments - to elements of the syntactic surface structure – typically noun phrases. They share with FG the assumption that Subject is only relevant for a language to the extent that a restricted amount of neutralization takes place. In other words, different arguments (possibly also adjuncts) can take this function and in doing so lose the morphosyntactic properties associated with the semantic and pragmatic functions that they bear and acquire a new, unified set of properties. This neutralization, however, should apply to only a restricted number of constituents, typically only the two arguments of bivalent verbs and the single argument of monovalent ones, much in the way of FG's SFH. For all theories, the behavioural properties of Subjects and Objects, i.e. their role in syntax are more central than their coding properties, i.e. the way they are case marked or are marked via agreement on the verb.

Relational Typology is a comprehensive typology of grammatical relations. In RT, Subject is seen as a privileged syntactic position, representing the most salient and obligatory participant in the event expressed by the clause. Which constituents can be formally coded and syntactically behave as a Subject in a language is based on a hierarchy of three functional dimensions, or pivots: role, flow and deixis. Role relates to the primary semantic concepts of Cause/Agent and Effect/Patient. These concepts may be grammaticalized in a language by way of three prototypical sets of hyperroles: Principal vs Patientive (characteristic of accusative alignment), Actor vs Undergoer (active alignment) and Agentive vs Absolutive (ergative alignment). The notion of flow relates to the informational status of the constituents, and may be seen as corresponding to the FG pragmatic functions. Finally, deixis is related to the mutual knowledge of the speech act participants, as coded on NP's (e.g. by definiteness, nominal versus pronominal expression) and on verbs (inverse marking). In Kibrik's typology, languages may be pure, in which case Subject is based on just one of the three pivots. Or they may be mixed, in which case several pivots codetermine what can be a Subject. Although it is probably rare, languages may be pivotless, i.e. there is no way in which the three potential pivots, namely, role, flow and deixis manifest themselves obligatorily in morphosyntax, neither in NP marking, verb agreement, constituent order nor the usual forms of syntactic control.

Role and Reference Grammar employs a pair of primary semantic concepts, the semantic macroroles, called Actor and Undergoer. Unlike RT, however they do not translate into different pairs of language type specific hyperroles. They

relate directly to the more or less familiar semantic functions such as Agent and Patient. But in contrast to FG's First and Second Argument, they do not generalize over fixed sets of semantic functions in a one-to-one fashion. Rather, they constitute a hierarchy on which Agent is the prototypical Actor, and Patient is the prototypical Undergoer, but other functions, such as Recipient and Possessor may be either Actor or Undergoer, depending on the language, the predicate and the construction in question. As a consequence, RRG crucially distinguishes between the different semantic functions that may be borne by the single argument of monovalent predicates. Subject – or rather: Privileged Syntactic Argument, PSA – is assigned to some constituent on the basis of this Actor-Undergoer hierarchy. For accusative languages the default assignment is to the most Actor-like argument; for ergative languages PSA is assigned to the most Undergoer-like one. Passive and anti-passive constructions may change default PSA assignment, and at the same time demote the default PSA argument to adjunct status. When PSA's may be assigned to arguments with different semantic functions they are called variable, else they are invariable. RRG divides PSA's into controllers, i.e. the constituent which is responsible for agreement marking (the 'Subject proper'), and pivots, i.e. any constituent which is under its control, such as an 'equi-deleted' argument of a coordinate or subordinate clause. Both controllers and pivots may be syntactic (when there is neutralization), or semantic (when control is purely based on the semantic function involved, without neutralization). In languages with switch reference systems they may also be pragmatic. In RRG it is stressed that languages may have more than one type of grammatical relation, or PSA for that matter.⁶ Therefore, a construction oriented rather than a grammar-wide approach to grammatical relations is favoured by this theory. Finally, a comprehensive set of RRG linking rules, which relate the logical structure of the clause with its syntactic structure, revolves around PSA assignment.

Apart from the similarities mentioned above, FG, RT and RRG have another aspect in common. All three theories concentrate on one type of 'privileged syntactic argument', the one typically associated with the notion of Subject, and based on restricted neutralization over a relatively small set of semantic functions, typically arguments of the main predicate. This leaves outside the picture all those morpho-syntactic phenomena that have a non-syntactic (i.e. a semantic or pragmatic) controller/pivot. Although the final result may work out a bit differently for the three theories, this position will leave out a considerable amount of languages from any typology based on such an approach, and will ignore a vast amount of relevant morpho-syntactic phenomena for languages which do have Subjects. Also, no relation is created with the possible diachronic scenarios that may give rise to the coming into existence of Subjects.

⁶ The example is given of Jacaltec which, according to Craig (1977) has no less than five different types of restricted neutralization, controlling equi-NP deletion, raising, relativization, clefting and cross-clause coreference, respectively.

In Siewierska and Bakker (2004) a somewhat broader perspective on grammatical relations is sketched in which Subjects (and Objects) – in FG terms: syntactic functions – are a specific, highly grammaticalized type of relation rather than the only one. Points of departure are the following four dimensions of grammatical description which in our view play a crucial role in the domain of grammatical relations.

- (1) a. the morphosyntactic phenomena that are traditionally linked to grammatical relations by most linguistic theories
- b. the argument and adjunct slots accessible for grammatical relations
- c. the pragmatic and semantic aspects of the fillers of these slots; and
- d. further functional and formal aspects of the sentence

We will discuss each of these briefly.

The set of morphosyntactic phenomena relevant for Subjects, and in fact the only way in which they are ‘visible’ is often divided into coding and behavioural properties. Under coding properties may be found case marking (typically Nominative/Absolutive for Subject and Accusative for Object) and agreement marking on the verb. Behavioural properties are syntactic phenomena under control of Subjects. We mention anaphoric binding as expressed in personal, possessive and reflexive pronouns, conjunction reduction, equi deletion, raising, and the relativized constituent in relative clauses, among others (i.e. the pivots of RRG). Finally there is constituent order, which may be both under control of Subjects and mark them. It is not necessarily the case that, in some language L_1 , all these phenomena are under control of one constituent, e.g. the Subject. Some phenomena may be irrelevant for L_1 . Alternatively, they may be under control of other types of constituents, such as first arguments, irrespective of whether they are Subjects or not. The following example from Tagalog illustrates this.

(2) Tagalog (Austronesian; SCHACHTER, 1977, p.292):

- | | | | | | | |
|----|-------------------------------------|------|-------------|------|----------|---------|
| a. | Nag-aalala | ang | lolo | sa | kaniyang | sarili. |
| | AG-worry | SUBJ | grandfather | DAT | his | self |
| | ‘Grandfather worries about himself’ | | | | | |
| | | | | | | |
| b. | In-aalala | ng | lolo | ang | kaniyang | sarili. |
| | AG.PASS-worry | AG | grandfather | SUBJ | his | self |
| | ‘Grandfather worries about himself’ | | | | | |

In (2a), we have an active clause with the Agent controlling the reflexive. In the passive version in (2b), the syntactic positions are reversed.⁷ We find the reflexive marked for Subject. It is still, however, controlled by the (demoted) Agent.

⁷ We are aware of the controversial status of the Tagalog non-actor focus constructions with respect to the active/passive distinction but have adopted the analysis preferred to date in FG.

The second dimension in the domain of grammatical relations is that of arguments and adjuncts of the sentence. These are the anchor points for grammatical relations, both in the grammar of a language and in the actual expressions.⁸ In the grammar they determine which constraints may be assigned the respective types of grammatical relations. FG's SFH is an example of such a constraint. In expressions there is competition, within the constraints of the grammar between the actual argument (and possibly satellite) positions for the assignment of syntactic functions. There is no fundamental difference between the three theories in relation to the semantic functions they distinguish. However, they do differ in the way they generalize over subsets of semantic functions. FG's first and second argument generalize over argument *positions*, thereby blurring the distinction between the actual semantic functions of these arguments. This works in many cases; however for languages with so-called split-S as demonstrated by Laz in example (3) FG needs to introduce extra conditions on the coding and potentially also the behavioural properties of the relevant constituents.

(3) Laz (Caucasian; HARRIS, 1985, p.52)

a. Ko'i-k kai ibirs.
 this man-ERG well sings

'The man sings well.'

b. Ko'i-ø 'urun.
 man-ABS die

'The man dies.'

In (3a) the Agent argument has ergative case marking; the Processed/Experiencer argument in (3b) has zero marking. So, case marking can not be dealt with by simply distinguishing between first and non-first arguments. Another case in point are so-called Dative Subjects as in Icelandic in (4b).

(4) Icelandic (Indo-European; ZAENEN et al, 1985)

a. Ég hjálpa-ð-I Þeim.
 1SG.NOM help-PAST-1SG 3PL.DAT

'I helped them.'

b. Þeim va-r hjálp-að af mér.
 3PL.DAT be.PAST-3SG help-PASTPRT by 1SG.DAT

'They were helped by me.'

⁸ The notion of 'pivot' would be a good choice for this. However, ever since it was coined by Dixon (1994) it has been used in slightly different ways by different authors (cf. the discussion of RT and RRG above), and is therefore by now as confusing as the notion Subject.

In (4b) we have a passive. However, apart from being fronted the second argument does not receive any other of the coding properties associated with Subjects (i.e. nominative case and agreement on the verb). On the other hand, Dative Subjects do function in syntax and control e.g. conjunction reduction. In this sense the RRG Actor-Undergoer hierarchy seems to allow finer tuned descriptions than the FG first and second argument.

Thirdly, we think a role of considerable importance is played by the semantic and pragmatic features of the terms that fill the argument and satellite positions. This is manifest in languages with all kinds of splits, as illustrated in (5) and (6) below.

(5) Nocte (Tibeto-Burman; DAS GUPTA, 1971, p.21)

- | | | | |
|----|---------------------|----------|---------------|
| a. | Nga-ma | ate | hetho-ang. |
| | 1SG-ERG | 3SG.ACC | teach-1SG |
| | 'I will teach him.' | | |
| b. | Ate-ma | nga-nang | hetho-h-ang. |
| | 3SG-ERG | 1SG-ACC | teach-INV-1SG |
| | 'He will teach me.' | | |

(6) Yidin^y (Australian; DIXON, 1977, p.256)

- | | | | |
|----|--------------------------------|---------|-----------|
| a. | Nundu | nandi:n | bunda:n. |
| | 2SG.NOM | 1PL.ACC | hit |
| | 'You hit us.' | | |
| b. | Badi | gilbi:l | bana:n. |
| | boat.ABS | throw | water.ERG |
| | 'The water threw the boat up.' | | |

Nocte, in example (5a/b) has a hierarchical way of determining verb agreement. When one of the arguments is bound by the first person, this is always marked on the verb, irrespective of the distribution of the semantic functions. In the Australian language Yidin^y the choice between accusative and ergative alignment is based upon the pronominal versus nominal nature of the argument fillers, and therefore on the pragmatic status of the corresponding terms in the discourse, as demonstrated in example (6a/b).

Finally, apart from the features of the argument terms themselves, there may be other aspects of the utterance that have influence on the choice of alignment systems, and therefore potentially on the choice of Subjects. We give an example from Georgian.

(7) Georgian (Kartvelian; COMRIE, 1978)

- | | | |
|----------------------------------|------------|------------|
| a. Student-I | ceril-s | cers. |
| student-NOM | letter-ACC | write.PRES |
| 'The student writes the letter.' | | |
| b. Student-ma | ceril-i | dacera. |
| student-ERG | letter-ABS | write.PAST |
| 'The student wrote the letter.' | | |

In (7a) the tense is present, and the alignment accusative. In (7b), with past tense, ergative alignment is applied. The same phenomenon is found in Mayan languages. Other languages have other kinds of splits (cf. SONG, 2001, p.149 ff).

We will now try to integrate the above into a somewhat broader framework, which does not only accommodate Subjects and Objects but also other, closely related instances of grammatical relations. Before we sketch this framework, three more points should be made. Firstly, we will not look at cases where the phenomena of (1a) have a specific semantic or pragmatic function for their controller and controllee. This implies that – arguably rare – cases where e.g. the controllee of equi-deletion is restricted to Agents, as shown for Acehnese in example (8), are left out of the current discussion.

(8) Acehnese (Austronesian; DURIE, 1985)

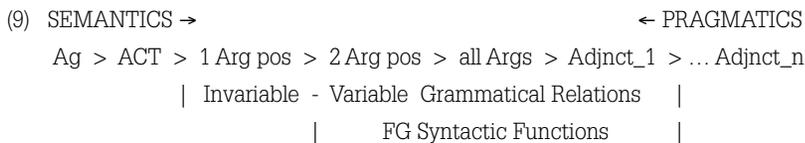
- | | | |
|---------------------|---------|---------------|
| a. Gopnyan | geu-tém | jak/*geu-jak. |
| 3SG | 3-want | go/*3-go |
| 'He wants to go.' | | |
| b. Gopnyan | geu-tém | *hët/geu-hët. |
| 3SG | 3-want | *fall/3-fall |
| 'He wants to fall.' | | |

In many languages, the referents of imperative constructions are Agent-controlled. FG first and second arguments as well as RRG Actor and Undergoer are generalizations over the basic semantic functions as found for predicates in the lexicon. So, if for a language, some syntactic process is controlled by any first argument, irrespective of its semantic function, we could say that this is a case of (admittedly restricted) neutralization of the underlying semantic functions of first argument positions in that language. From our current perspective, we will see them then as controllers of grammatical relations. Secondly, we will assume that the notion grammatical relation applies only when a generalization can be made over the arguments of monovalent and bivalent predicates, e.g. when control over certain phenomena is shared by single intransitive arguments (S) and the first transitive argument (A; accusative alignment), or shared by the S and the

second transitive argument (P; ergative alignment). And thirdly, only cases will be taken into consideration where control involves at least one syntactic rule. Thus, coding phenomena such as agreement and case marking do not suffice to postulate a grammatical relation. Although for some languages, case marking is also neutralized for arguments in actual control position (Nominative and Absolutive case are the typical instances of this), in others they may still mark semantic functions (the Dative Subject of Icelandic in (4b) is an instance of this).

In summary, we will define syntactic functions as functions which control one or more syntactic rules, generalize over at least one argument position and are shared by intransitive and transitive predicates. This means that, for this exercise we will take the original FG position as a point of departure rather than the RRG one since it is the most far-reaching of the two. It is an empirical question which of these two positions will provide the best typological descriptions and predictions in the light of the rest of our considerations. A case for the RRG approach would be a language where some syntactic construction is controlled by e.g. Actor or Undergoer rather than first or second argument.⁹

While standard FG presents syntactic functions as more or less isolated, something which languages may or may not possess, we would rather perceive of them as a special case of control over morphosyntactic phenomena by arguments and adjuncts. They are to be found in the centre of a continuum of argument control, as depicted below. In some sense this continuum could be seen as an extension of the Semantic Function Hierarchy in both directions.¹⁰



In (9), to the far left we find examples of (morpho)syntactic control by a single semantic function. Acehnese in (8) above could be an example of this. One step to the right we find control by a macrorole, such as Actor. As discussed above, Actor generalizes over the left-hand side of a continuum that runs from prototypical Agent (maximum control) to prototypical Patient (minimum control). It covers those functions which imply some control of the referent in the argument

⁹ Note that Icelandic as exemplified in (4) above is not a case in point since it is the coding aspects which are not shared by dative subjects while the behavioural ones – here: conjunction reduction - are. However, if we would follow Van Valin and LaPolla (1997, p.256) in analyzing Pro drop in Acehnese as exemplified in (9) above as controlled by Actors rather than by Agents then this would be an argument for introducing semantic macroroles.

¹⁰ Here and below, and unlike García Velasco and Hengeveld (2002), we assume that predicates in the lexicon come with more or less fixed predicate frames in terms of number of arguments and prototypical role assignments. For argumentation, see Jackendoff (1990). For an implementation in FG see Siewierska (1993).

position over the activity expressed by the predicate. The actual set covered by a macrorole may differ per language. Another step further, control is generalized to a complete argument position, irrespective of the semantic function attached to it. This is typically a first or second argument in the traditional FG sense. Tagalog in (2) above may be an example of this. Since this generalization creates a relation in the grammar between two different argument positions – typically S-A; and S-P in ‘deep’ ergative languages such as Dyirbal (cf. DIXON, 1994, p.12) – we consider it an instance of grammatical relations. Up to this point on the continuum, control is fully exerted on the basis of (a set of) argument positions introduced by the main predicate, irrespective of the terms that serve as their fillers in actual utterances. In that sense the assignment of control is invariable. However, from here onwards, a kind of ‘choice’ is introduced, i.e. within a certain range of argument and adjunct positions, there is *variation* as to which of the relevant positions may actually exert control. As will be argued in the next section, our assumption is that for languages for which there exist such variable grammatical relations, the actual selection of the controlling position is always determined by a specific subset of the semantic and pragmatic properties of the fillers of the relevant slots. In that sense these positions are in competition for the control of the intended phenomena; the middle of the continuum can be seen as the battleground of the different types of functional forces. To the extreme right we find phenomena that may be controlled via any argument and potentially any adjunct position. A typical example are the positions which may be relativized in relative clauses. For languages such as English and many other Indo-European languages for that matter, there seem to be no constraints on relativization. Indeed, even adjunct positions may be relativized, as exemplified in (10), where it concerns a temporal adjunct.

(10) The date on which you are planning to arrive is very inconvenient.

It could be claimed that the underrepresentation of the relativized position by a gap or some pronominal form, as in the vast majority of the world’s languages, is due to its local topicality.¹¹ Other characteristic examples of unrestricted control are *wh*-extraction, quantifier floating and possessor ascension. In these cases, control is exerted by the focality of the corresponding referent. We will consider such phenomena, which are exclusively controlled by pragmatic functions and for which there is no competition between the respective positions as outside the domain of grammatical relations. The same goes for purely semantic controllers, as in the case of Acehnese above.

¹¹ In the sample of Comrie and Kuteva (2005), 86% of the relevant languages have a gap or a pronominal element for relativized Subjects as well as Obliques.

So, what we are left with are those clusters of morphosyntactic phenomena that are controlled from a subset of the argument and adjunct positions in an utterance. In the case of invariable grammatical relations (IGR) there is neutralization over the semantic functions which are shared by e.g. the first argument position of all predicates of the languages. This neutralization is very common in the languages of the world. That may be because by definition they never co-occur in the same utterance and are therefore never in competition. However, neutralization over first and second argument, leading to variable grammatical relations (VGR), and FG-like Subjects is much less common. There are good reasons for this. First and second arguments are bound to co-occur in utterances, and it is crucial for hearers that they can be distinguished, given their contrastive roles in the state of affairs expressed in transitive predications, prototypically Agent versus Patient. The semantic function may not always be inferred on the basis of the semantics of the filler terms. Despite this obvious threshold, languages may diachronically develop constructions which bring second arguments to the position of first arguments, both syntactically and morphologically. A typical device which brings this about is topicalization, as in cleft constructions, which bring second arguments to first argument position. Such constructions generally allow for an Agent to be expressed optionally as an Adjunct. Another well-known pathway is reflexivization, which typically disallows overt Agents. Over time, such constructions may develop into what are synchronically interpreted as passive constructions. Indeed, Subjects have regularly been interpreted as grammaticalized topics (cf. TOMLIN, 1983; GIVÓN, 1997). Once these constructions are part of the grammar, then the motivating force for the promotion of non-first arguments – their topicality – may be replaced by a combination of the semantic properties common for topics: definite, animate, first/second person, etcetera. The applicability of the construction may be further restricted by ‘environmental’ factors, mentioned in (1d) above, such as tense, level of embedding, etcetera. Neutralization may be complete in the sense that all coding and behavioural aspects of first arguments are equally taken over by second arguments in passive constructions. Or it may be partial, as for the Icelandic in (4b), where the Dative case marking corresponding to the semantic function is maintained and agreement is determined at a default value. Finally, passive constructions may further grammaticalize in the sense that also third arguments with the right properties may qualify for promotion, as in English. Alternatively, different constructions may develop independently for different argument positions, as for Kapampangan in (11a/b) below, adapted from Dik (1997).

(11) Kapampangan (Austronesian; MIRIKITANI (1972) as cited in DIK, 1997, p.263)

- a. I-sulat ne ning lalaki ing poesia.
 PASS1-write 3SG.3SG AG boy SUBJ poem
 'The poem will be written by the boy.'
- b. Sulat-anan ne ng poesia ning lalaki ing mestra
 write-PASS2 3SG.3SG GO poem AG boy SUBJ teacher
 'The teacher will be written a poem by the boy.'

We will assume that a syntactic function is assigned to any argument position in an utterance when it controls (a subset of) the morphosyntactic phenomena intended under (1a) above, provided that it generalizes over a set of primitive semantic functions and that there is at least one syntactic operation involved. This definition includes invariable relations, in other words: alternative assignment and a passive construction are not necessary for the notion syntactic function to apply. We will use the notion Subject for the strongest syntactic function in a language. Expanding on Keenan (1976), we will determine the strength of syntactic functions on the basis of the number of argument positions which are accessible to it and the number and nature of the constructions it controls. Theoretically, there may be different Subjects in a language in the sense that different arguments control different subsets of phenomena. In such cases, behavioural aspects prevail above coding.

For the same reason that they arise with some difficulty, passive constructions will remain in the language as markers of alternative Subject assignment. Only very rarely languages have VGR's without there being a special passive construction. According to Foley and Van Valin (1984) Barai is an exception. In this language, only Subjects, which occupy the leftmost position of the two transitive arguments, may be followed by the intensifying suffix *-ka*. The default Subject is the Agent. This is shown in (12a) and (12b). However, when the Patient is higher on the definiteness hierarchy than the Agent, it will be promoted to Subject. This is only indicated by a reversal in constituent order, not by any other syntactic device. That the Agent in (12c) and Patient in (12d) are Subject is shown by the fact that they control the intensifier which is attached to a pronominal copy in case the Subject is nominal.

(12) Barai (Indo-Pacific; FOLEY;VAN VALIN, 1984, p.346 ff)

- a. Fu-ka na kan-ie.
 3SG-INT 1SG hit-1SG
 'He really hit me.'
- b. *Fu na-ka kan-ie.
 3SG 1SG-INT hit-1SG
 'He hit really me.'

- c. E ije fu-ka ame ije kan-ia.
 man DEF 3SG-INT child DEF hit-3PL
 'The man really hit the children.'
- d. Ame ije bu-ka e be kan-ia.
 child DEF 3PL-INT man INDEF hit-3PL
 'Someone really hit the children.'

Having sketched our view on grammatical relations, let us now turn to the implementation of these ideas in the FDG model.

3 Reconsidering grammatical relations in FDG

If we interpret the above in terms of the FDG model as presented in Hengeveld (2004), we get the following picture. An early step in the derivation of an utterance is the selection of the basic predicate including its argument structure. At this stage, the pragmatic status of the referents which will fill the argument positions of the predicate is available to the speaker. These referents are either 'given' and established at the discourse level or 'new' and will be firstly introduced in the utterance under production. The corresponding pragmatic information may codetermine the selection of the main predicate to the extent that the lexicon contains near-synonym pairs such as 'buy – sell', 'send – receive', 'borrow – lend' etcetera. This choice determines what might be called the **lexical perspective** on the state of affairs. This perspective may be changed by predicate formation rules which change the meaning of the predicate by adding or removing arguments, as in causativization and detransitivization, or otherwise, as for so-called 'get' passives in English.¹² After the main predicate has been established, all argument and satellite positions will be bound by term variables, and the rest of the operators will be selected. With the underlying pragmatic and semantic structures complete, the expression rules will be activated. Given the impact it has on the overall structure of the utterance, we assume that the determination of the argument and satellite positions that will have control over morphosyntactic processes, as in the case of Subjects, takes place at a very early stage in the expression process. In terms of the dynamic expression rules as formulated in Bakker (2001) and Bakker and Siewierska (2004) it will take place at the level of the highest node in the derivation tree, and typically before it is expanded in any way. Thus, precisely at the threshold between functional and formal processes. This is probably the case for all types of languages, both those with and those without syntactic functions, since constituent order, more particularly the choice

¹² For our discussion here, we will assume that 'real' passives do not affect the meaning, and are therefore not the result of the application of a predicate formation rule.

of the filler of the first position (P1), and the overall structure of the utterance (passive, cleft, expletive etc) are typically determined by the functional properties of the arguments and possibly also some major satellites. And it is precisely at the level of the top node that all functional information is maximally accessible, to the extent that it plays a role in the grammar at this stage.¹³ For languages that do have syntactic functions the choice of Subject and possibly other functions will be made at this stage. For reasons of terminological continuity we will call such choices the **grammatical perspective** on the state of affairs. However, we will assume that this is just a label and that the actual 'choice' is made on the basis of the functional features of the relevant argument positions, rather than via a more or less independent choice of the speaker. That this is probably so, even for languages such as English, where Subject assignment seems to be highly grammaticalized, may be shown by the example sentences in (12). Compare the acceptability of (13a-d).

(13) English (Indo-European)

- a. She bought a new bike.
- b. ???A new bike was bought by her
- c. ?A falling stone hit her
- d. She was hit by a falling stone

Of both pairs (13a/b) and (13c/d), although all versions might be considered well-formed in terms of competence based rules, only the ones with the pronominal Subjects seem acceptable from a performance oriented perspective. In fact, utterances such as (13b) and (13c) are very rare in corpora of spoken English. A search through the spoken section of the British National Corpus (BNC; ASTON; BURNARD, 1998) confirms that speakers select their Subjects on the basis of their semantic and pragmatic properties rather than on the basis of some more or less independent operation such as *perspective*. Firstly, passives are rare in the spoken language. Moreover, passives with explicit agents are rarer still. Svartvik (1966), in a corpus of written English, found that over 80% of the passives were agentless. For a corpus consisting of a mixture of written and (formal) spoken English, Thompson (1986) found more or less exactly the same. The nature of the selection process in the BNC did not allow us to inspect all candidate sentences for agentless passives. Therefore, we can only more or less impressionistically state that passives with agents are just a fraction of all passives to be found in the spoken corpus, probably considerably less than 15% of them. It may be concluded then that the major reason for speakers of English to opt for the passive

¹³ On the basis of agreement phenomena in Arabic Bakker (2005) suggests that not all features, although available in the technical sense are equally accessible at this stage. Arguably, accessibility is influenced by the pragmatic status of the respective constituents and by processing aspects such as a constituent having been expressed at an earlier stage.

is the absence of an agent since it is unknown, irrelevant or obvious, i.e. for discourse pragmatic reasons.¹⁴ According to Thompson (1986, p.497) it is also for discourse pragmatic reasons that speakers of English choose for a passive despite the presence of an agent. The non-agent (i.e. the second argument) will be Subject when “(it) is more closely related than the agent to either the theme of the paragraph or to a participant in the immediate preceding clause”. Obviously, this may be interpreted in terms of the different types of discourse and sentence topics. That topicality, and pragmatics in general is an important parameter in the determination of Subjects in English may be gathered from the following data from the BNC. In the section with spoken English we found 236 utterances which contained both a form of *be* and the preposition *by*. Of these, 71 were analyzed as non-passives or agentless passives. The 165 passives with an agent that remained may be characterized as follows in terms of the form of the two arguments.

Table 1 – Distribution of types of passive Subjects and agents

SUBJECT	AGENT ('by')	number of occurrences
Pronominal	Pronominal	14 (8.5%)
Pronominal	Nominal	102 (61.8%)
Nominal	Pronominal	2 (1.6%)
Nominal	Nominal	47 (28.5%)

So, the Subject is a pronoun in over 70% of the cases, the agent in around 10% which is indicative of the overall topicality of the referent in the Subject position. In almost two thirds of the cases, we find the combination of a pronominal Subject and a nominal agent. When both referents are pronominal all cases but one follow the person hierarchy 1 > 2 > 3. The only counterexample has a relative pronoun for its Subject in which case there is no real choice at all. The two sentences which have a nominal Subject and a pronominal agent can be found in (14) and (15) below.

(14) and will continue to, to, to, erm so that the, the, the set-up should never have been created by hér. [PS527]

(15) We said that come from the film Cats and he reckoned the copy of Memories he's got is sung by who? [PS0FX]

In both cases the Subject is topical while the agent is focal, either because of its contrastive nature or because it is a question word. Finally, of the 47 nominal pairs, the majority have a definite Subject and an indefinite agent. However, in 8

¹⁴ Givón (1979, p.59) assumes that missing agents are always recoverable by the hearer, and therefore left out by the speaker, at least in terms of the type of referent.

cases the Subject is indefinite while the agent is definite. Of these, only 1 has a non-human Subject while the agent is human. It is given in (16).

- (16) On their births a trust a fund of tens of thousands of pound was started for them in their names by their grandmother. This will guarantee all their school fees and the basis of their future. [PSOFG]

An explanation for the subjecthood of the money may be that it is going to be the topic for the following stretch of discourse. In (17), another example of an indefinite subject, the earth has been introduced as a topic, and is continued by the related sub-topic in the Subject position of the second clause while *the moon* – Force, not Agent – is in focus.

- (17) And the planet earth is within the reach of gravitational pull and things on the earth are attracted by the moon. [KPAPS000]

Overall, the assumption made above, and earlier on by authors such as Thompson (1986) that the selection of Subject in English is determined by discourse related factors gets strong support from the BNC corpus data. We suggest therefore the following approach to syntactic functions in FG, and more specifically to Subject: Arguably, all languages have morphosyntactic rules which are controlled by one or more argument positions. When for the application of this control in some grammar it can be shown that there is neutralization over a set of basic semantic functions which do play a role elsewhere in the grammar, the control function will be seen as syntactic. The strength of a syntactic function is measured in terms of the number of semantic functions or argument positions it generalizes over and the amount of morphosyntactic phenomena it controls. When there are more syntactic functions in a language, the strongest one will be called Subject. Others will be Object, Object2, etcetera. Passives are seen as constructions which diachronically set the stage for a language to extend the Subject function to at least a second transitive argument position. Synchronically, their function is to restructure the utterance such as to bring about marked Subject assignment, and iconically move the patient to the front and the agent to the syntactic periphery, if it is expressed at all. However, for a language to have Subjects in the first place there is no absolute need for the presence of a passive construction: it suffices when there is some form of neutralization over basic semantic functions. In other words: languages with invariable grammatical relations (IGR) may also have Subjects. When languages have developed neutralization over more than one argument position this will be coded in the grammar in terms of the argument positions which are accessible to Subject assignment (the SFH) and the set of morphosyntactic operations which Subjects control. This could be seen as the static, competence aspect of syntactic functions. As such, **writers** of English

may consciously employ the passive as a rhetoric device, as has been shown by Coetzee (1980). However, **speakers** typically do not apply these rules consciously and spontaneously, nor across the board. In the practice of utterance production the most central argument position will be determined at an early stage of the expression process, and on the basis of certain pragmatic and semantic features of the terms in the argument positions. These sets of features, which are drawn from a universal set but may be grammaticalized and more or less fixed in a language, determine the probability of the choice, and the chance that certain utterances might be found in a corpus of spoken language. Thus, they are part of the dynamic, performance aspect of the language. Interestingly, since they work stochastically rather than in a yes/no fashion, they work in two ways vis-à-vis competence. On the one hand, they create constraints on what would technically be possible within the limits set by the grammar. In that sense they work as a filtering device, be it a functional rather than a formal filter. On the other hand, they tempt speakers to cross the boundaries of competence, and produce utterances which formally would be considered unwellformed. Examples from Dutch are found in (18) and (19) below:

(18) De reiziger-s word-en verzocht uit te stappen.
 DEF passenger-PL AUX.PASS-PL request-PASTPRT to.descend
 'Passengers are requested to leave the train.'

(19) Die broek pas ik niet!
 DEM pants fit.1SG 1SG not
 'Those pants do not fit me.'

In (18), Subject is assigned wrongly to the third argument (Recipient/Experiencer). However, (18) is frequently heard spoken by conductors on trains. Given the topicality of passengers in such a context, it has become the unmarked form. It is corrected only by school teachers and their likes. In (19), the same features active in Subject assignment are in the process of bringing about a reinterpretation of the predicate scheme of the verb *passen* 'to fit'. In its traditional reading, the first argument would be the Force (here: the pants) and the second one the Experiencer (here: the speaker). However, younger speakers will typically reverse the roles, and put the Experiencer in the first argument slot, and therefore make it the default Subject, while the original meaning is maintained. Without making performance factors central, there would be no way to explain these, and many other diachronic changes.

4 Conclusions

In this contribution, we have made an attempt to reinterpret FG syntactic functions in the light of the FDG model. Rather than assuming the sentence and competence based position traditionally taken in FG, we have argued for a discourse and performance based approach to notions such as Subject and Object. Furthermore, in order to create a more general background for syntactic functions, we have tried to sketch a continuum for grammatical relations, on which syntactic functions take a central position, though not an isolated one. This continuum serves two purposes. Firstly, it provides a multidimensional typological space, with both functional and formal vectors. In this space, all languages may be located in a much finer grained fashion than just having or not having Subject according to the rather restricted original definition of FG, with the SFH as its only extra dimension in case a language does have Subjects. Secondly, the continuum creates a framework for explaining the diachronic changes that take place in the domain of grammatical relations. With such adaptations and provisions, FG moves in the direction of related theories such as RRG and RT. This may one day lead to a unified functional theory on grammatical relations and syntactic functions, arguably one of the oldest, most hotly debated and controversial areas of linguistic description.

The practical implication for FG theory is that the notion of syntactic function gets a wider application in terms of the actual syntactic operations that are traditionally seen as being controlled by arguments, and is no longer directly tied to the presence or absence of a passive construction. As a result, a number of historically and synchronically related phenomena may be easier to embed in the theory. We are thinking of other kinds of passives, such as reflexives, 'get' passives and passives with obligatory suppression of the agent/first argument. But also impersonal constructions, middle voice, the inverse and, more in general changes in the interpretation of predicate frames of verbal arguments come into focus.

With the domain of grammatical relations, and more specifically syntactic functions thus reinterpreted, we think that the FDG model, and therefore FG theory more closely approaches the ideal of a functional theory of language, i.e. a theory that not only describes what native speakers **know** about their language but also what they **do** with that knowledge.

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BAKKER, D.; SIEWIERSKA, A. A implementação de funções gramaticais na Gramática Discursivo-Funcional. *Alfa*, São Paulo, v.51, n.2, p.269-292, 2007.

- RESUMO: Na GF padrão (DIK, 1997), as funções gramaticais são atribuídas diretamente à representação subjacente de uma forma mais ou menos abrangente, levando em consideração apenas a hierarquia de função semântica dependente da língua. Essa abordagem contorna diversas restrições relacionadas à atribuição de sujeito que podem ser reunidas por meio de dados tipológicos e observadas no comportamento real dos falantes. Neste trabalho, fazemos uma tentativa de reinterpretar as funções sintáticas da GF à luz do modelo da GDF. Seguindo as idéias de Givón (1997), propomos um tratamento da atribuição de sujeito baseado em uma combinação de fatores semânticos e pragmáticos dos referentes relevantes e outros aspectos funcionais das representações subjacentes. As regras de atribuição obedecem às respectivas hierarquias como discutido na literatura sobre tipologia. Em nossa proposta, a atribuição de Sujeito (e de Objeto) agora se localiza no componente expressivo, mais especificamente na versão dinâmica das regras de expressão apresentadas por Bakker (2001).
- PALAVRAS-CHAVE: Atribuição de sujeito; alinhamento; abordagem multifatorial; regras de expressão dinâmicas; hierarquia tipológica.

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Abbreviations

1	first person
2	second person
3	third person
ABS	absolutive
ACC	accusative
AG	agent
AUX	auxiliary
DAT	dative
DEF	definite
EP	epenthetic
ERG	ergative
INDEF	indefinite
INT	intensifier
INV	inverse
NOM	nominative
PASS	passive
PASS1	passive type 1 (for patients)
PASS2	passive type 2 (for recipients)
PAST	past tense
PASTPRT	past participle
PL	plural
SG	singular
SUBJ	subject

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