Adverbial conjunctions in Functional Discourse Grammar*

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This contribution presents a new view on the treatment of adverbial conjunctions in Functional Discourse Grammar, combining an analysis of general linguistic interest with a theoretically motivated one. It starts off with a typological classification of linguistic elements expressing relations between clauses, which leads to a classification of conjunctions and conjunctional phrases in English. Attention is then paid to the different lexical-grammatical properties of different types of conjunctional elements. The findings show that, in English, linguistic elements used to combine clauses form a continuum ranging from grammatical elements parallel to prepositions to lexical elements parallel to verb chain contructions. The descriptive tools of Functional Discourse Grammar help to reveal a correlation between the types of conjunction and their domain of application.

1. Introduction

The aim of this paper is to investigate how adverbial conjunctions may be dealt with in Functional Discourse Grammar (Mackenzie & Gómez-González Eds. 2004; Hengeveld & Mackenzie forthc.). In doing so we concentrate both on the way the conjunctions themselves are represented in underlying structure, and on the nature of the linguistic units they conjoin. We furthermore intend to show that there is a correlation between the nature of the conjunction on the one hand, and the hierarchical level of the units connected by means of that conjunction on the other. We illustrate our theoretical points using mainly English examples, but do so only after sketching the general typological background within which the English examples may be situated.

The structure of this paper is as follows. In order to arrive at a proper delimitation of the notion of adverbial conjunction, we will in Section 2 first, from a typological

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perspective, set them off from other linguistic elements expressing relations between a main clause and a dependent linguistic unit, such as special verb inflection and case markers. This section ends with a discussion of the types of conjunction available in English. On the basis of the typological classification we note that English draws a distinction between grammatical conjunctions (e.g. *because*), lexical conjunctions (e.g. *after*), and periphrastic conjunctions (e.g. *in the event*), which is reflected in the possibilities of modification of the various types. After briefly introducing the relevant parts of Functional Discourse Grammar in Section 3, Section 4 then discusses the underlying semantic representation of the various types of conjunction distinguished in Section 2. Section 5 then extends the analysis to the argumentative functions of conjunctions, making use of the distinction that is made in FDG between an interpersonal and a representational level of representation. We present our conclusions in Section 6.

2. Adverbial conjunctions

2.1 Adverbial clauses

Adverbial clauses are dependent clauses that are optional additions to a main clause, which means that they can be left out without affecting the grammaticality of the main clause with which they combine.[1] A defining feature of adverbial clauses is furthermore that they contain a specific marker that is indicative of the semantic-functional relationship between the main and the dependent clause (see Wanders forthc.). These two points may be illustrated by means of the following examples:

(1) Jenny closed the door *after John left.*

(2) Jenny regretted *that John had left.*

(3) *Coming out, stopping to check the mailbox, taking a look at the driveway and pausing to adjust his hat,* he turned and walked to his car.

The italicized units in (1)–(3) are all dependent clauses, but only the italicized unit in (1) is an adverbial clause. The italicized clause in (2), being a complement clause, cannot be left out without affecting the grammaticality of the construction as a whole, and therefore does not count as an adverbial clause. The italicized clauses in (3), taken from Givón (1995, see also Wanders forthc.), are part of a co-subordinating narrative construction. They can be left out without affecting the grammaticality of the main clause, but do not contain a specific marker that is indicative of a semantic-functional relationship with the main clause, and for that reason do not count as adverbial clauses.

1. Note that according to this definition most conditional clauses and many correlative constructions (e.g. *The more I think about it, the more I disagree with you.*) do not count as adverbial clauses. These constructions too are probably better dealt with as cases of co-subordination (see van der Auwera 1997).

2.2 Adverbial conjoining

The marker that is indicative of the semantic-functional relationship between a main clause and an adverbial clause may take various forms across languages. The major difference that may be observed is the one between bound and free expression markers of the semantic-functional relationship. The following examples illustrate the bound strategy:

(4) *Evenki* (Nedjalkov 1997: 53)
Engesi bi-**mi** nungan homo:ty-va davdy-ra-n
strong COP-CAUS he bear-ACC.DEF win-REAL-3.SG
'He overcame the bear because he was strong.'

(5) *Basque* (Saltarelli 1988: 47)
Ama-k errierta-Ø ema-n dio lorontzi-rik
mother-ERG.SG argument-ABS give-PF AUX.PRES flower.pot-PRT
on-en-a hauts-i **bait**-du.
good-most-SG.ABS break-PF CAUS-AUX.PRES
'Mother has quarelled with him because he has broken her best flower pot.'

(6) *Imbabura Quechua* (Cole 1982: 64)
Ñuka wawki shamus-shka-**manda**-mi jatun fishta-ta rura-rka-ni
my brother come-NR-ABL-FOC big party-ACC make-PAST-1
'Because my brother came, I gave a big party.'

Evenki has a large set of specialized non-finite verb forms that may be used in adverbial clauses of various types. Thus, it has specific non-finite verb forms for Anteriority, Posteriority, Simultaneity, Condition, Purpose, etc. These non-finite verb forms are often referred to as adverbial participles or converbs (see Haspelmath & König 1995). In (4) the converbal ending *-mi* expresses causality. Basque uses affixes on finite verb forms to express certain semantic relations, among them causality, expressed by means of the verbal prefix *bait-* in (5). Imbabura Quechua in many cases nominalizes the adverbial clause and attaches a case marker to it. In (6) the ablative case marker expresses the causal relationship between main and nominalized clause.

There are a large number of varieties of the free strategy markers too. Consider the following examples:

Mokilese (Harrison 1976: 260)

(7) Ngoah suh-oang John **anjoau**-o ma ngoah in-la sidow-a.
I meet-ALL John time-REM REL I go-DIR store-DEF
'I met John when I went to the store.'
'I met John the time at which I went to the store.'

(8) Ih dupukk-oang ngoahi **mwoh**-n oai japahl-do Mwoakilloa.
he pay-ALL I front-POSS my return-DIR Mokil

'He paid me before I returned to Mokil.'
'He paid me front of my returning to Mokil.'

(9) *Kashmiri* (Wali & Koul 1997:73)
Tik'a:zi siri:nəgɾɨ ə:s sakh garmi:, **amikin'** go:s bɨgulɨmarag.
because Srinagar.ABL was very hot, therefore went I Gulmarg
'Because it was hot in Srinagar I went to Gulmarg.'

(10) *Spanish*
Las calle-s están mojad-as **porque** está
DEF.F.PL street-PL COP.PRES.3.PL wet-F.PL because COP.PRES.3.SG
llov-iendo.
rain-PART
'The streets are wet because it is raining.'

In the examples from Mokilese, the temporal adjuncts are actually noun phrases with a temporal noun as their head. These noun phrases furthermore contain a subordinate clause expressing the event with respect to which the main clause event is situated in time. In (7) the subordinate clause is a relative clause modifier of the temporal head noun *anjoau* 'time', and in (8) it is the second argument of the relational noun *mwoh* 'front'. Strictly speaking, these are not cases of adverbial subordination, since the subordinate clause either modifies or is an argument of a noun. However, since this type of construction is often the diachronic source of true conjunctions, we discuss it here. Kashmiri uses a correlative construction: both clauses may be marked for the adverbial relation they are in, the relational element in the main clause (*amikin'* 'therefore' in (9)) referring anaphorically to the event described in the subordinate clause. Finally, in the Spanish example in (10) only the dependent clause is marked, in this case through a grammaticalized adverbial conjunction.

2.3 Conjunctions and adpositions

It is noteworthy that in many languages the class of markers that are indicative of the semantic-functional relationship between clauses in adverbial constructions partly overlaps or shows similarities with the class of markers that are indicative of the semantic-functional relationship between noun phrases and their linguistic context. This holds for both bound and free markers. Consider the following examples:

Imbabura Quechua (Cole 1982:64, 116)

(11) Ñuka wawki shamus-shka-**manda**-mi jatun fishta-ta rura-rka-ni.
my brother come-NR-ABL-FOC big party-ACC make-PAST-1
'Because my brother came, I gave a big party.'

(12) Pay-ka chugri-**manda** wañu-rka-ø
he-TOP wound-ABL die-PAST-3
'He died because of his wound.'

Spanish

(13) Las calle-s est-án mojad-as **por**-que est-á
DEF.F.PL street-PL COP-PRES.3.PL wet-F.PL because-CONJ COP-PRES.3.SG
llov-iendo.
rain-PART
'The streets are wet because it is raining.'

(14) Las calle-s están mojad-as **por** la lluvia.
DEF.F.PL street-PL COP-PRES.3.PL wet-F.PL because DEF.F.SG rain
'The streets are wet because of the rain.'

In Imbabura Quechua a causal relationship may be expressed through the use of the case marker *-manda* 'ABL'. This marker combines with both nominalized clauses and regular noun phrases. Similarly, in Spanish the preposition *por* 'by, because' occurs in a fused form with the general conjunction *que* 'that' to introduce finite clauses, and is used on its own to introduce noun phrases.

2.4 Conjunctions and conjunctional phrases in English

If one accepts that the cosubordinate constructions in (3) are not adverbial clauses, it turns out that English uses free markers only to explicitly express adverbial relations. At least the following types may be distinguished:

(15) She called him *before* she left.

(16) She stayed home *until* the meeting began.

(17) Smallpox would be rapidly controlled *in the event* that it were introduced into Australia.

(18) I'll bring him some water *in case* he gets thirsty.

The elements in italics in these examples can be classified along two parameters: simple versus complex, and lexical versus grammatical, as indicated in Table 1.

The subdivision between simple and complex conjunctions does not need further comments, at least for these examples. A distinction that is more crucial here is the one between lexical and grammatical conjunctions. A major feature that distinguishes lex-

Table 1. Classification of conjunctions according to complexity and type

	Lexical	Grammatical
Simple	*before*	*until*
Complex	*in the event that*	*in case*

ical conjunctions from grammatical ones is the fact that (parts of) lexical conjunctions can be modified through additional lexical means.[2] Consider the following examples:

(19) She called him *three hours before* she left.

(20) *She stayed home *three hours until* the meeting began.

(21) *In the unlikely event* that smallpox were introduced into Australia, it would be rapidly controlled.

(22) *I'll bring him some water *in unlikely case* he gets thirsty.

In (19) *three hours* gives a further specification of the time lapse preceding the occurrence of the event described in the dependent clause. In (21) *unlikely* qualifies the hypothesized event in terms of its reality status. Similar modifications of (part of) the conjunction are impossible in the case of *until* and *in case*.

The modifiers in (19) and (21) modify the conjunction (19) or part of the conjunctional phrase (21) directly, i.e. they have scope over a head. This is not the case with the modifiers in (23)–(26), which (may[3]) have phrasal scope:

(23) He arrived *exactly* three hours before she left.

(24) He continued walking around *exactly* until the meeting began.

(25) *Only* in the unlikely event that you don't reply to this message will I phone you.

(26) *Only* in case it rains will I stay home.

The phrasal scope of the modifiers in italics in (23)–(26) can be brought out by replacing the entire subordinate clause by a simple anaphorical phrase, as in:

(27) *exactly* three hours before she left
> *exactly* then/at that moment

(28) *exactly* until the meeting began
> *exactly* then/at that moment

(29) *only* in the unlikely event that you don't reply to this message
> *only* then/in those circumstances

(30) *only* in case it rains
> *only* then/in those circumstances

2. Although the distinction lexical-grammatical is a continuum rather than a dichotomy, the FDG model makes a sharp disctinction between the two. Our position on this matter is that if modification of the meaning of (part of) the conjunction is impossible it is considered grammatical.

3. In (23) *exactly* may have narrow scope as well, if it is used to express the exactness of the time-span defined by *three hours*.

What may be deduced from these facts is that for instance *three hours before* in (27) is a single complex description of a moment in time based on a conjunctional phrase with a lexical head that can be modified directly. The complex description as a whole forms a (temporal) phrase that may be modified by phrasal modifiers.

A further consequence of the wider scope of phrasal modifiers is that they cannot be inside the scope of the head modifiers or occupy the slot of a lexical modifier, as illustrated in (31)–(32) for just two permutations, which are ungrammatical in the intended readings:

(31) **three hours exactly before* she left

(32) **in the only event* that you don't reply to this message

Next to modification, there is a further phenomenon that points up the difference between a lexical and a grammatical conjunction, and which has to do with the combinability of lexical and grammatical conjunctions. Consider the following examples:

(33) She stayed *until three hours after* he left.

(34) She didn't leave *until the very moment* he arrived.

In (33) and (34) *three hours after he left* and *the very moment he arrived* are complex descriptions of points in time, and *until* defines the time span leading up to those points in time. The opposite ordering of grammatical and lexical conjunctions is excluded. This combinability of grammatical and lexical conjunctions seems for semantic reasons to be restricted to temporal conjunctions, both simple (33) and complex (34), which are in this respect similar to grammatical and lexical locative prepositions, as discussed in Mackenzie (1992a, 1992b).

On the basis of the above considerations, we conclude that the grammar of English reflects a basic difference between lexical and grammatical conjunctions. In the next section we will provide a description of these two classes of conjunctions and their subclasses within the framework of Functional Discourse Grammar.

3. Functional Discourse Grammar

3.1 Introduction

Functional Discourse Grammar (FDG) as presented in (Hengeveld 2004a, 2004b, 2005; Mackenzie & Gómez-González 2004; Hengeveld & Mackenzie forthc.) is the grammatical component of a wider theory of verbal interaction (see Dik 1997), in which it interacts with non-linguistic components of the process of human communication. In the FDG model four interacting levels of organization are distinguished: the interpersonal level, the representational level, the expression level and the phonological level, in exactly that hierarchical order. It is characteristic of FDG that these levels are simultaneously present, i.e. where relevant linguistic units are fully analysed at each

of these levels. Internally, each of the levels of linguistic organization is structured hierarchically. Since the purpose of this contribution is not to explain the FDG model as a whole, we will confine ourselves to a brief presentation of the two levels that are most relevant to our analysis: the interpersonal and the representational level. For a complete outline of FDG we refer to Hengeveld (2005).

3.2 The interpersonal level

At the interpersonal level all relevant units of communicative behaviour are formalized in terms of their communicative function. The overall structure of this level is given in Figure 1.

$$(M_I: [(A_I: [(F_I)\ (P_I)^N\ (C_I: [(T_I)^N\ (R_I)^N \ldots]\ (C_I))]\ (A_I))^N]\ (M_I))$$

Figure 1. The interpersonal level

The hierarchically highest unit of analysis given here is the move (M).[4] A move may contain one or more (^{N}) discourse acts (A). A discourse act consists of an illocution (F), one or more speech act participants (P), and the communicated content (C) presented by the speaker. The communicated content, in its turn, may contain a varying number of ascriptive (T) and/or referential (R) acts. Note that all units within a pair of square brackets are operative at the same layer, i.e. there is no hierarchical relation between them. Variables at the interpersonal level are given in capitals for ease of recognition.

3.3 The representational level

The internal, hierarchically layered structure of the representational level is presented in Figure 2.

$$(p_1: [(e_1: [(f_1)^n\ (x_1)^n\ (l_1)^n\ (t_1)^n]\ (e_1))^n]\ (p_1))$$

Figure 2. The representational level

At this level of analysis linguistic units are described in terms of their semantic category. The highest layer here presented is the propositional content (p). A propositional content is a mental construct, and may contain one or more descriptions of states-of-affairs (e). Within the description of a state of affairs various other semantic categories may enter, including properties (f), individuals (x), spatial regions (l), and temporal regions (t). Note that this level is purely descriptive in nature, i.e. linguistic units are described in terms of their designation. The use that is made of these units, for instance reference or ascription, is accounted for at the interpersonal level. Again, square brackets set off sets of units operating at the same layer.

4. Upward layering in units of higher order is possible, but not relevant for the purpose of this paper.

3.4 Heads, modifiers, operators, functions

Each of the units discussed so far may be expanded in the following way, where α ranges over all variables:

(35) $(\pi\,\alpha_1: [(\text{complex})\ \text{head}]\ (\alpha_1): \sigma\ (\alpha_1))_\varphi$

A unit may be built up using lexical and grammatical means. The lexical means can be subdivided into obligatory heads and optional modifiers (σ). The head is represented as the first restrictor, the modifier as a non-first restrictor. Heads may be complex, as when a number of coordinated units together define a hierarchically higher unit. Simple heads are lexemes occupying the first restrictor slot. Modifiers may again be classified in terms of their semantic category, i.e. they may designate spatial regions (l), temporal regions (t), etc. Grammatical means are subdivided into operators (π) and functions (φ). Operators capture non-relational properties expressed through grammatical means, while functions capture relational properties expressed through grammatical means.

By way of example, consider the interpersonal (37) and representational (38) formalization of example (36):

(36) Reportedly a man cut himself with a knife yesterday.

(37) $(A_I: [(F_I: \text{DECL}\ (F_I))\ (P_I)_S\ (P_I)_A\ (C_I: [(T_I)\ (\text{-id}\ R_I)\ (R_I)\ (\text{-id}\ R_K)\ (R_L)]\ (C_I): \text{reportedly}_{Adv}\ (C_I))]\ (A_I))$

(38) $(p_i: [(\text{past}\ e_i: [(f_i: \text{cut}_V\ (f_i))\ (1\ x_i: \text{man}_N\ (x_i))_{Ag}\ (x_i)_{Pat}\ (1\ x_j: \text{knife}_N\ (x_j)_{Instr}]\ (e_i): (t_i: \text{yesterday}_{TempAdv}\ (t_i))\ (e_i))]\ (p_i))$

At the interpersonal level, the act A_I has a complex head, consisting of a series of hierarchically equivalent units in between square brackets. The illocution F_I has an abstract head representing the basic illocution of the discourse act. The speech act participants are provided with functions indicating their role within the discourse act. The communicated content C_I has a complex head, but also a modifier *reportedly* indicating that the communicated content was obtained from another speaker. Within the communicated content there is a series of subacts: one ascriptive act, corresponding to *cut*; and four referential acts, corresponding to *a man*, *himself*, *a knife*, and *yesterday*, respectively. The first and third of these carry the operator *-id* 'non-identifiable', which triggers the indefinite expression of the noun phrases.

At the representational level the propositional content p_i has a complex head and no modifiers. Similarly, the state-of-affairs e_i has a complex head, but it is modified by *yesterday*, which itself designates a temporal region (t_i). Time is also expressed through

the past tense, which is captured by the operator *past*. Within the description of the state of affairs there are several units, one designating a property (f_i) and three designating individuals (x_i, x_j, x_k). The specific roles these individuals play within the state of affairs is indicated by means of the functions *Ag* 'agent', *Pat* 'patient', and *Instr* instrument.

4. Conjunctions at the representational level

Using the framework just introduced, we now return to the distinction between grammatical and lexical conjunctions. In this section we will first offer a formalization of this distinction at the representational level. In Section 5 we then turn to the use of conjunctions at the interpersonal level.

In developing our proposal we take our lead from Mackenzie's (1992a, 1992b, 2001) work on adpositions, in which he similarly draws a distinction between lexical and grammatical adpositions, representing the former as lexical heads of (locative) phrases, and the latter as the expression of semantic functions. Applying this to the simple conjunctions discussed in Section 2, we obtain the results given in (39)–(42). Note that we have simplified the representations where possible, leaving out details that are irrelevant to our argumentation.

(39) She called him *before* she left.

(40) $(e_i$: [she called him] (e_i): $(t_i$: $(f_i$: $before_{Conj}$ $(f_i))$ $(t_i)_{\emptyset}$ $(t_j$: $(e_j$: [she left] (e_j) $(t_j))_{Ref})$ $(e_i))$

(41) She stayed home *until* the meeting began.

(42) $(e_i$: [she stayed home] (e_i): $(t_i$: $(t_j$: $(e_j$: [the meeting began] (e_j): $(t_j))_{All}$ $(t_i))]$ $(e_i))$

The dependent clause *before she left* as a whole is an optional addition to the main clause and is therefore represented as a modifier occupying the second restrictor slot. This modifier designates a temporal region, and is therefore provided with the variable t_i. This temporal region is defined in relation to the temporal region t_j of the event *she left*, which, being a state of affairs, is provided with the variable (e_j). The lexical conjunction lexically specifies the relation between the temporal regions t_i and t_j and is therefore provided with the variable f_i, which is used for properties and relations. It designates a two-place relation, and the functions of the two units that are in this relation are Ø 'zero', for the bearer of a property, and *Ref* 'reference', for the entity in relation to which the property is defined.

The dependent clause *until the meeting began* in (41) is again an optional addition to the main clause, and therefore formalized in (42) as a modifier, designating a temporal region t_i. In this case the conjunction is grammatical in nature, and can therefore be represented as a function *All* 'allative' of the unit designating another temporal region t_j. This region is defined in terms of the occurrence of the event *the meeting began*,

which is represented as e_j. The basic difference between the two constructions, then, is that in the latter case the temporal region, itself defined by a state of affairs, operates at the level of the main clause, whereas in the former case it is embedded as an argument of the phrase headed by *before*.

These representations help us capture the differences in behaviour that were noted in Section 2. We noted first of all that there are two types of modifiers of adverbial clauses, one with narrow scope and one with wide scope. The following example contains both:

(43) He arrived *exactly three hours before* she left.

The underlying representation of this example shows the difference in scope between the modifiers. Note that we use the variable q here for quantity/measure.

(44) $(e_i$: [he arrived] (e_i): $(t_i$: $(f_i$: $before_{Conj}$ (f_i): $(q_i$: three hours $(q_i))$ $(f_i))$ $(t_i)_{\emptyset}$ $(t_j$: $(e_j$: [she left] $(e_j))$ $(t_j))_{Ref}$: exactly $(t_i))$ $(e_i))$

In the case of grammatical conjunctions a lexical head is absent, and there is therefore no slot available for a narrow scope modifier either, which means that the formalizations proposed here correctly capture the empirical observations.

The second observation that we made earlier concerned the combinability of lexical and grammatical conjunctions. On the basis of the distinct formalizations of these two types of conjunctions, example (45) may be represented as in (46):

(45) She stayed *until three hours after* he left.

(46) $(e_i$: [she stayed] (e_i): $(t_i$: $(t_j$: $(f_i$: $after_{Conj}$ (f_i): $(q_i$: three hours $(q_i))$ $(f_i))$ $(t_j)_{\emptyset}$ $(t_k$: $(e_j$: [she left] $(e_j))$ $(t_k))_{Ref})_{All}$ $(t_i))$ $(e_i))$

The representation of the time region t_j, formalizing the part *three hours after she left*, is provided here with the allative semantic function, which is expressed as *until*. Since *after* is not the expression of a function but a lexical element, the function slot is available for grammatical markers, which correctly reflects the fact that the two may be combined in (45).

We now turn to complex lexical conjunctions. We do not discuss these here in contrast with complex grammatical conjunctions, as the latter would be just as much the expression of functions as simple grammatical conjunctions. Complex lexical conjunctions come in various types, illustrated in (47)–(48):

(47) *The moment* (that) he arrived in London it started raining.

(48) Smallpox would be rapidly controlled *in the event* that it were introduced into Australia.

The difference between the two constructions is that in (47) the *that*-clause modifies, i.e. further specifies, the head *moment* in terms of an event taking place. It is therefore similar to a relative clause. This is not true of (48), in which the *that*-clause refers to

the same event as the head *event*, although in a more specific way. It is therefore similar to a restrictive apposition (see Mackenzie 1990 for a discussion of this distinction).

Given these characteristics, (47) may be represented as follows:

(49) (e_i: [it started raining] (e_i): (t_i: (f_i: $moment_N$ (f_i)) (t_i)$_\emptyset$: (e_j: [he arrived in London] (e_j): (t_i) (e_i)))

What this representation captures is that this is a case of relativization on the temporal specification of the event contained in the relative clause modifying *moment*. The temporal adverbial may then be paraphased as 'the moment such that e_j took place at that moment'. Note that *moment* is treated as a noun and not as a specialized conjunction.

Given its restrictive appositional nature, (48) may be represented as:

(50) (e_i: [small pox would be rapidly controlled] (e_i): (e_j: (f_i: $event_N$ (f_i)) (e_j): (e_k: [smallpox are introduced into Australia] (e_k)) (e_j))$_{Loc}$ (e_i))

In this case the event description e_j that has *event* as its head is further specified by another event description e_k, which gives the more specific description. The preposition *in* is triggered by the locative semantic function, which here has to be interpreted metaphorically as it is applied within the domain of event descriptions.[5]

A major difference between (47) and (48) is that in (47) the clause modifying the head noun *moment* is a predication with an open time slot in the modifier position, i.e. *moment* plays a role within the embedded clause itself, whereas in (48) the modifying clause is a closed predication, i.e. *event* plays no role within the embedded clause.

A last case that merits some attention is the following:

(51) The facilities can be used *immediately* that you join.

This case is quite similar to the previous one, in the sense that both *immediately* and *you join* are alternative descriptions of the same time span, the latter one being more specific than the former. We may therefore formalize this example as another case of apposition, though of units designating temporal regions rather than states of affairs:

(52) (e_i: [the facilities can be used] (e_i): (t_i: (f_i: $immediately_{Adv}$ (f_i)) (t_i): (t_j: (e_j: [you join] (e_j)) (t_j)) (t_i)) (e_i))

Generalizing over the various cases of lexical conjunctions and periphrastic conjunctional phrases that have been discussed in this section, we find that next to a limited number of lexical items that are specialized in conjoining and therefore have to be identified as belonging to a lexical class of conjunctions, complex lexical conjunctions exploit existing lexical categories of the language in order to indirectly express a semantic relation between clauses. In all cases discussed grammaticalization of the construction leads to a situation in which the internal complexity of the construction

5. Note that *in* is a lexical preposition in its basic locative use, but a grammatical one in its metaphorical use.

is reduced and the semantic relation between clauses is established directly through a grammatical element.

5. Conjunctions at the interpersonal level

In the previous section we discussed various conjunctions and conjunctional phrases operating at the representational level. Conjunctions may also, however, fulfil a role at the interpersonal level. Consider the following examples:

(53) Watch out, *because* there is a bull in the field.

(54) He is a nice guy, *although* you probably knew that already.

What the adverbial clauses in (53)–(54) have in common is that they in one way or another comment on the appropriateness of the discourse act expressed in the main clause. They thus qualify an interpersonal rather than a representational unit. One way to show this is that in these uses they can never be in the scope of a semantic modifier, not even the ones with wide scope discussed in 2.4:

(55) *Watch out, *exactly because* there is a bull in the field.

(56) *He is a nice guy, *exactly although* you probably knew that already.

This difference becomes even more evident in those cases in which a conjunction may be used at both the representational and the interpersonal level. Compare the following example with (55):

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

In the strictly causal use in (57) the phrasal modifier *exactly* is allowed, whereas in the argumentative use in (55) it is not. These facts can be seen as a reflection of the fact that in its causal use *because* operates at the representational level, and can thus be modified by semantic phrasal modifiers, whereas at the interpersonal level it is outside the scope of semantic modification. The difference between the two uses may be formalized as in (58) and (59):

(58) (e_i: [providing food assistance is not easy] (e_i): (e_j: [the infrastructure is lacking (e_j)$_{Cause}$: exactly (e_j))

(59) (M_I: (A_I: [watch out] (A_I)), (A_J: [there is a bull in the field] (A_J))$_{Motivation}$] (M_I))

The causal clause in (57) is formalized in (58) as a modifier, since it is used restrictively. It is provided with the semantic function *Cause*, which triggers the causal grammatical conjunction *because*. The argumentative clause in (59), which represents (53), is paratactically related to the main clause, and carries the rhetorical function *Motivation*, reflecting the argumentative use of the grammatical conjunction *because*. It is

represented as a separate discourse act. The act status of this clause is evident from the fact that it allows for interpersonal modification with scope over the *because* clause as a whole, as illustrated in (60):

(60) Watch out, because, **frankly**, there is a bull in the field.

The act status of the *because*-clause in (53) is furthermore reflected in the fact that it is not and cannot be within the scope of the basic illocution of the main clause, and there is even a (limited) possibility of changing the basic illocution of this clause, as illustrated in (61):

(61) Watch out, because aren't bulls dangerous?

The possibility of modifying the basic illocution of the *because* clause reveals the presence within this clause of an illocutionary component, which is a defining characteristic of discourse acts.

A remarkable fact about adverbial conjunctions that are employed at the interpersonal level is that they are highly grammaticalized, as reflected in the impossibility of modification (see 2.4). Typical examples of conjunctions frequently used at the interpersonal level in English are *although*, *since*, *for*, and *so*. This contrasts sharply with the wide range of lexical conjunctions and conjunctional phrases operating at the representational level, several of which were discussed in the previous section. This high degree of grammaticalization of interpersonal conjunctions is not unexpected. It is a general prediction in FDG that grammatical elements, when they have their origin at the inner layers of the hierarchical structure of the clause, develop increasingly abstract functions at next higher layers and levels of linguistic organization (see e.g. Hengeveld 1989).

A group of seeming counterexamples to this generalization is exemplified in (62) and (63):

(62) *Considering* that salaries are rising, we should try to reduce the production costs.

(63) Keep your money (*assuming* that you have any) separate from mine.

The phrases *considering that* and *assuming that* introduce argumentative steps in the discourse, representing pieces of background knowledge and background assumptions that lead to certain conclusions. Other such phrases are *supposing that*, *granting that*, *given that*, and *provided that*. Within these phrases seemingly functioning as conjunctional elements the verbal form can be modified in a limited number of ways:

(64) *Considering further* that salaries are rising, we should try to reduce the production costs.

(65) Keep your money (*assuming for a moment* that you have any) separate from mine.

This lexical behaviour of these conjoining expressions functioning at the interpersonal level seems to contradict our earlier generalization concerning the grammatical status of conjunctions at the interpersonal level.

In our analysis, however, the above constructions are not interpreted as conjunctional phrases. Recall that in our discussion of example (3) we argued that participial forms can be used in narrative chaining. The conjoining expressions we are discussing now take a participial form as well, but they are not used in narrative chaining but rather in argumentative chaining. Within this chaining construction the verbs involved remain lexical, acting as the head of cosubordinate clauses, within which they can be modified. The dependent status of the cosubordinate clauses does not reside in the verb as such, but in the participial ending with which the verb is provided. The difference with the cases of narrative chaining discussed earlier is that the chained units are not states of affairs (e) at the representational level but discourse acts (A) at the interpersonal level. The difference may be represented schematically as in (66) and (67):

(66) $(e_i), \ldots, (e_n)$

(67) $(A_I), \ldots, (A_N)$

A major reason to assume the underlying representation in (67) is that a dependent clause such as the one in (62) cannot be within the scope of the basic illocution of the main clause, as illustrated in (68):

(68) Considering that salaries are rising, shouldn't we try to reduce the production costs?

On the other hand, it does not seem to be possible to modify the illocution of the dependent clause itself:

(69) *Considering that aren't salaries rising, we should try to reduce the production costs.

Our solution for this asymmetrical behaviour of the two acts involved is to assume that in (62) and (68) *consider* itself occupies the illocutionary slot, just like performative verbs do, for *consider* describes a presentative/discourse property of the content of the clause. The underlying representation of (68) would then be as in (70), where the function Prep 'preparation' marks the preparatory act and the function Nucl 'nuclear' the nuclear act:

(70) $(A_I\text{: } [(F_I\text{: consider}_V\ (F_I))\ (P_I)_S\ (C_I)]\ (A_I))_{Prep}, (A_J\text{: } [(F_i\text{: INT}\ (F_I))\ (P_I)_S\ (P_J)_A\ (C_J)]\ (A_J))_{Nucl}$

Every C is then mapped onto a propositional content at the representational level.

This analysis not only solves the problem of the observed asymmetry in the behaviour of the two discourse acts, it also explains why only certain types of modifier can be used with *consider* when used in this function. Consider the following examples:

(71) Considering *for a moment/further/for the sake of the argument* that salaries are rising, we should try to reduce the production costs.

(72) *Considering *for the last three hours/for Bill's sake/in the director's office* that salaries are rising, we should try to reduce the production costs.

The only modifications allowed, as illustrated in (71), are directly related to the speech situation itself, rather than to the features external to that speech situation specified in the ungrammatical constructions in (72). This is a direct reflection of the interpersonal status of *consider* in this configuration of acts.

The regular association between an interpersonal argumentative function and a limited set of argumentative verbs may be expected to induce a process of grammaticalization which leads to the reinterpretation of the participial verb forms involved into interpersonal conjunctions. There are certain indications that this process is actually taking place, since, as noted by Quirk et al. (1985:1002f.), some of the participial forms used in the constructions discussed here 'retain certain properties characteristic of verbs, while those that are most like simple conjunctions have lost all such properties'. They show that some participial forms do allow adverbial expansion, whereas others do not:

(73) Supposing/assuming for the sake of the argument that ...

(74) *Seeing/provided for the sake of the argument that ...

Once a participial form grammaticalizes into a conjunction, it no longer forms part of a chaining construction, but of a subordinating construction, and the formalization in (70) changes into for instance the one given in (75):

(75) $(M_I: [(A_I)\ (A_J)_{Assumption}]\ (M_I))$

Thus, whereas the process of grammaticalization at the representational level seems to draw mainly on a specific group of nouns, the process of grammaticalization at the interpersonal level seems to draw mainly on a specific group of verbs. In the latter case, however, the verbs involved start out in their regular function at the representational level, and only move up to the interpersonal level once they grammaticalize into conjunctions.

6. Conclusions

In this paper we have tried to argue two main points with respect to the analysis of English conjunctions within Functional Discourse Grammar. First of all, we argued that within the class of conjunctions a distinction has to be made between grammatical and lexical conjunctions, parallel to the distinction between grammatical and lexical prepositions proposed in Mackenzie (1992a, 1992b) and later publications. Secondly, we argued that lexical conjunctions play a role at the representational level only. The analysis of seeming counterexamples involving the use of participial verb forms has led us to introduce the concept of 'argumentative chaining' next to 'narrative chaining', which provides a parallel analysis of chaining constructions at the representational and interpersonal level within Functional Discourse Grammar.

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