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Null Complements, Event Structure, Predication and Anaphora: A Functional Discourse Grammar Account

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1. Introduction

The theme of this chapter is the possible existence, and if so, interpretation, of zero or null complements of predicates which may take one or two internal arguments (i.e. either an A^2 or an A^2 and an A^3), realizable syntactically.[1] The chapter aims to show how this phenomenon may receive a satisfactory treatment within Functional Discourse Grammar (FDG). I am concerned here only with null complements having nominal values, leaving aside predicational zeros (as in VP ellipses such as [...] *and Peter was too*). There are three essential issues concerning the possibility of occurrence and the type of interpretation of null complements: first, what are the conditions under which they may occur with various types of transitive verbs?; second, what are the semantic and referential values which these null complements may assume in different contexts?; and third, what are the principles which make these values possible? Clearly, the occurrence of null complements needs to be *licensed* – it is not just

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any transitive verb, in any type of context, which may allow its direct and/or indirect complement(s) to be unrealized syntactically. It is these questions which I will be addressing in what follows. A satisfactory account of the possibility of non-realization of one or both of a predicate's internal arguments syntactically, and when this is possible, of the way in which they receive an interpretation, requires recognizing the existence of an interaction amongst lexical-semantic structure, the construction selected as a whole, and various discourse-contextual factors.

Zero forms and deletion are not recognized in the FG framework; and indeed, evidence will be provided that the former must be the result of the non-instantiation of one or more argument positions in a given predicate frame (or predication frame, in García Velasco / Hengeveld's 2002 account: see Section 5 below), with its consequences for the event-type denoted. They are not derived via an underlying representation of the term filling the argument position, a term which is subsequently deleted. As in the case of indexical expressions generally (cf. Cornish 1999, 2002a), zero forms have properties which are not predictable from those of the term or predicate which they might be said to replace; and in any case, the predication created from a predicate all of whose argument positions are filled with lexical terms is not necessarily identical in value to one in which one or more of these positions is unfilled, as we shall see in particular in the final part of this chapter.

2. The semantic vs. syntactic valency of predicates

A characterization of the phenomenon of null complements requires distinguishing a predicate's *semantic* valency from the *syntactic* valency of the verb, adjective or preposition corresponding to that predicate; hence, a formal treatment of the possibility of occurrence and type of interpretation in context of null complements presupposes the distinction made within FDG between the *Representational* and the *Structural* levels of analysis, and between *abstract meaning definitions* of lexemes and their linking to *predication frames* (cf. García Velasco / Hengeveld 2002). Furthermore, where a discourse referent evoked or retrieved via a null complement is involved, this

would seem to require representing at the *Interpersonal* level, with contributions from the Cognitive and the Communicative Context components (see Section 5 below).

Briefly, a predicate's arguments may form part of its *semantic* valency *qua* predicate at the level of lexical-semantic structure, as well as of the *syntactic* valency of the lexeme which corresponds to it at the morphosyntactic level.[2] That is, a predicate's array of argument positions in terms of lexical-semantics (cf. Mairal Usón / Faber's 2002 notion of "lexical templates") may well correspond to the syntactic arguments it takes when realized by a given lexeme. This is illustrated by the examples in (1) below.

(1) a. John saw the "No Entry" sign.
b. The postman placed the packet in the tray.
c . The car hit the railing.

Clearly, the second or second and third arguments of the predicates *see*, *place* and *hit* are required both semantically and syntactically, as the examples in (2) show:

(2) a. *John saw.
b. ?The postman placed the packet.
*The postman placed in the tray.
*The postman placed.
c. *The car hit.

However, the 3-place predicate *place* is somewhat different from the 2-place predicates *see* and *hit*, in that it may well occur in context without one of its "internal" arguments being instantiated: here its A^3. This then becomes "tacit", recoverable from the context of utterance of the clause involved. In this particular case then, we see that the semantic and syntactic valencies of a predicate may diverge – its syntactic valency being reduced to 2, while its semantic valency remains at 3. But even verbs like *hit* may occur in context with only

2 This difference is not explicitly or consistently drawn in Dik (1997a): cf. Cornish (2002b: 256-257), where I argue that the predicate frames of the standard model of FG are hybrids, conflating and thus confusing the two dimensions. Van Valin / LaPolla (1997: 27-28) do, however, explicitly draw this distinction.

their A^1 instantiated, as in this attested example from the genre of journalism:

(2c´) [Context: article about a 1.3kg meteorite which crashed into a New Zealand couple's living room shortly before breakfast]
…Even at that speed [several hundred metres per second] it would have been moving fast enough to kill on the spot and the Archers' one-year-old grandson had been playing in the room moments before it hit. (*The Guardian*, 14.06.04, p. 2)

Note here that the inanimate pronoun *it* would not be appropriate as a substitute for the null complement of *hit* in this example (it would tend to be interpreted as referring back to "the room in which the Archers' one-year-old grandson had been playing"). With the (basic 2-place) predicates in (3), on the other hand, their syntactic valency may be reduced by 1, this having particular effects on the semantics of these predicates. This is the so-called "absolute" use of transitive verbs (see also the use of the 2-place verbal predicate *kill* in (2c´)).

(3) a. Ron sawed, and Mildred pruned.
b. Hilda read, while Jim wrote.

Here, the emphasis is on the activities of sawing, pruning, reading and writing, respectively, on the part of the individuals involved, and clearly not on the thing(s) sawed, pruned, read or written. These are all "incremental-object" verbs (cf. Van Hout 1999). But it would be a mistake to believe that these predicates' A^2 in their transitive use has disappeared at the lexical-semantic level when they are not realized syntactically, since it is quite possible for the interlocutor to question this entity: …*I wonder what Ron sawed/Mildred pruned?* for (3a), and …*I wonder what Hilda read/Jim wrote?* in (3b) (cf. Fillmore's 1986 test).

Clearly in these cases, the non-instantiation of the A^2 has had the effect of turning an accomplishment predication (where all the predicates' arguments are lexically instantiated) into an activity one (where their non-instantiated A^2 arguments are construed as indeterminate or generic). Such a relationship would be treated by Dik (1997b: ch. 1) in terms of a Predicate Formation Rule; but see García Velasco / Hengeveld (2002) for arguments against this treatment once

their construct of "predication frame" (see Section 5 below) is allowed to replace the standard predicate frame. It is the highly specific selection restriction imposed on the instantiation of this argument position which is responsible for transferring this semantic property to the non-instantiated argument positions,[3] resulting in the understanding that, for example, "Ron sawed logs" and "Mildred pruned roses" in an utterance of (3a), and that "Hilda read books/magazines/newspapers" and "Jim wrote letters/his diary/articles" in one of (3b) (the context of utterance is clearly responsible for delimiting the specific understanding of these null A^2s in such instances – see also (4) below).

3. Three semantic or discourse-referential values realizable by null complements

There are three distinguishable semantic or discourse-referential values realizable by null complements ("generic" or "indeterminate", "referential-(in)definite", and "anaphoric (contextually-definite)"). I present and illustrate each in turn, and will then focus particularly on the third subtype.

3.1. "Generic" or "indeterminate" null complements

This value has already been illustrated in this chapter, in the shape of examples (3a, b) as well as the use of the normally transitive, accomplishment verb *kill* in (2c´), where the non-instantiation of the A^2 of the transitive variants of the verbs concerned had the effect of converting the predication to an activity one, the internal arguments having an indeterminate reference – but constrained by the context of utterance of the clause in question, as we have seen. Example (4) provides an attested illustration, where four normally transitive verbs have precisely this value:

(4) "See, try, admire or buy at London's Motor Show." (Advertisement, *The Sunday Times*, 9.10.83, p. 9)

3 Cf. Dik's (1997a: Section 4.2.6) account of the operation of selection restrictions within standard FG.

(5) [Notice on individual dustbins on pavements in a street in Canterbury, UK:] "Recycling is so easy when it's collected from your doorstep."

The types of things which the reader of the advertisement in (4) is enjoined to "see, try, admire or buy" (note the imperative mood of these predications, which favours non-realization) are clearly new models of motor vehicles and their accessories, exhibited in the Motor Show to which the utterance is referring. We thus have a set of (fairly general, in all these instances) selection restrictions transferred by the senses of each of the predicates involved to their non-instantiated A^2s, senses which are delimited to a denotation type via the context in which the text occurs – an advertisement for a Motor Show. As Ricardo Mairal Usón (p.c.) points out, such arguments would not receive a macro-role in Van Valin / LaPolla's (1997) Role and Reference Grammar model, no discourse referent being introduced in order to be the object of subsequent predications. And as Mejri / François (to appear) point out, it is necessary to distinguish between *indeterminate* (as I shall call this sub-type) and *generic* values of null complements. The type in (5) could be argued to be generic, since the (initial) clause as a whole is generic: the tense is the (gnomic) present, and the predication attributes a property to an event type as opposed to token. Whereas in (4), the four predications are eventive, the conjuncts each being in the imperative mood, and the actions enjoined being located within a specific commercial event. The null complements thus all have an indeterminate, rather than generic value here. In both cases, it is the event (token or type) denoted by the verbal predicate which is highlighted by the null complement realization, its participants being backgrounded thereby. See also the use of *kill* in (2c´), whose null complement would appear to have an indeterminate (human-denoting) value here ("people, whoever they might be").

3.2. "Referential (in)definite" null complements

Another value assumable by null complements is that of evoking an identifiable ((in)definite) entity which may later be retrieved, under certain conditions, via an anaphor. What is crucial here is that the zero

form's intended referent be identifiable by the addressee, or at least that it be treated as such by the speaker. Whether or not it is salient at the point of occurrence in the co-text is immaterial. This corresponds to both of Mejri / François' (to appear) subtypes "latent-identifiable" and "latent-identifiable and salient". Unlike the generic or indeterminate type we looked at in Section 3.1, this subtype may evoke a discourse referent. Deictic occurrences in the context of the imperative form of the host verbs are an initial type of example, as seen in (6):

(6) Eat!/Watch!/Mind!/Smell!/Taste!

In each such case, the interlocutor's attention is being specifically drawn to the thing or event involved, which is available within the situational context. As such, it is thereby made salient for both participants.

(7) I wrote to you a week ago, you know, but you never answered!

In (7), the context indicates that the verb *write* is being used in its 'correspond' sense; the predicate at issue therefore has three arguments, the second of which is unrealized syntactically. This non-instantiated A^2 argument ("a letter sent by the speaker to his/her interlocutor a week before the time of utterance") is clearly referential, owing to the definite past tense chosen here, and the reference to a specific event which occurred prior to the utterance of (7). It is equally clearly indefinite, being an introductory reference (even though the intended addressee may already be aware of the existence of such a letter), the referent constituting discourse-new information in context. Unlike the "generic/indeterminate" value of null complements seen in Section 3.1, the "referential-(in)definite" use does introduce a discourse referent (and would clearly warrant the assignment of a "macro-role" in terms of RRG).`

3.3. "Contextually-definite, anaphoric" null complements

A third possibility is where the implicit internal argument is not only referential and identifiable, as in the case of the null A^2 complement of *wrote* in (7) above, but anaphoric. The second non-instantiated A^2 argument in (7), the referent of the null complement of *answered* in the second conjunct, is contextually definite, in contrast, as it is construed as referring back anaphorically to the letter introduced by the null complement in the initial conjunct. Fillmore's (1986) test for indefinite (non-referential, of the type seen in Section 3.1 above) null complements would be clearly negative here: …*#I wonder what you never answered*. See also the null complement of *hit* in (2c´).

Given that I include under the heading "anaphora" exophoric uses of potentially anaphoric expressions,[4] I would subsume under this value such uses of zero complements – as in the case of labels on bottles of pharmaceutical products, instructions for use etc. of the type: *Take with precaution* (label on bottle of medicinal pills); *Break in an emergency* (notice displayed on a glass panel behind which is placed an alarm). The host verbs in such examples are in the imperative mood, like the deictic examples in (6). However, it is clear that the intended referent of the zeros in such "label" cases is not only identifiable, but salient: the addressee's attention is assumed, in such caption-like instances, to be already centred on the object on or under which the notice is placed. Thus the implicit argument is contextually-definite, and the reference is anaphoric (cf. the infelicitous queries: *#...I wonder what should be taken with precaution/#...I wonder what should be broken in an emergency*, respectively).`

4 See Cornish (1999: ch. 4) for arguments in favour of this move. García Velasco / Portero Muñoz (2002: 21) suggest formalizing the exophoric/ endophoric distinction by means of a distinct operator ("EX" for "exophoric"). However, this does not take into account my arguments for the conflation of this traditional "geographical" distinction ("antecedent" within co-text vs. within situational context). Given that both sources of indexical reference presuppose the high saliency and topicality of the entities concerned, together with the fact that the same expression-types serve to retrieve referents made available via either of these sources, then it is theoretically more satisfactory to subsume them under the heading "anaphoric", formalized by means of a single operator, "A".

4. The anaphoric potential of null complements, event structure and predication

Let us now concentrate essentially on the first and the last of the three sub-types set out in Section 3, in an attempt to make precise the latter's anaphoric potential, as compared with that of unaccented third person personal pronouns. It will be shown that this is a function of an interaction amongst the event-type designated by the clause as a whole, the host predicate's selection restrictions, the choice of zero vs. pronoun as complement where either is possible, and wider contextual factors.

There would seem to be two main conditions which must hold in English for a null complement to occur under an anaphoric interpretation: 1) there must exist a specific selection restriction upon the internal argument(s) subject to non-realization in terms of syntax; and 2) the null complement's referent must be contextually salient at the point where it occurs. This condition is a necessary, though not sufficient one, as (8) shows:

(8) Martin liked the look of the pair of walking shoes displayed in the store window: he went and bought *ø/them without trying *ø/them on.

Here, the verb *buy* is used in the definite past tense, and the reference is clearly to a specific occasion of buying something – a pair of walking shoes – and of not trying that something on. But even though this referent is contextually salient, this is not sufficient to permit the non-instantiation of the internal argument of the two verbs concerned under an anaphoric (coreferential) reading.[1] It would seem to be the non-specific nature of the selection restriction associated with the lexical-semantic structure of these verbs which prevents this type of functioning. The verbs *buy* and *try on* seem to have only very general selection restrictions (respectively, <commodity> and <clothing>). In spontaneous spoken French, however, the equivalent verbs may well

5 See also the ill-formed examples of 2- or 3-place achievement or accomplishment verbs with null complements in (2) above – where the tense is also the definite past, and the intended referent of the null complement may also be contextually salient.

occur with a null complement, under an anaphoric interpretation: …*Il est allé acheter* ***ø/les*** *acheter sans essayer* ***ø/les*** *essayer*. In English, only an overt pronoun may occur as complement of the verbs in such a context.

Other verbs, having more specific selection restrictions as well as different Aktionsart properties, permit both types of form. Let's look first at a pair of examples presented, but not further analysed, by Groefsema (1995: 156):

(9) a. John picked up the glass of beer and drank ø.
b. John picked up the glass of beer and drank it.

Here, the choice of a zero complement of *drank* in (9a) induces a partitive interpretation. The zero is anaphoric, but the null instantiation of this predicate's A^2 has had the effect of changing the accomplishment Aktionsart evident in (9b) with the pronoun into an activity predication. What John is said to have drunk in (9a) is some, not necessarily all, of the beer in the glass evoked in the initial conjunct. In (9b) in contrast, John is stated as having drunk all of the beer in the glass (the overt pronoun, enabling the accomplishment event structure to be specified, induces a holistic interpretation). The anaphoric, and not "generic", value of the zero in (9a) is determined by the fact that the two conjuncts of this example designate a sequence of two specific events (note the definite past tense borne by the verbs in each conjunct) which each form an integral part of a more global event. This is not the case in (10a) below, where each predication denotes an atemporal property (via the simple present tense in each conjunct and the lack of an overt article in the NP *gin*), the second property holding independently of the first. Thus the predication in the second conjunct of (10a) does not continue the situation established in the first, and so the null complement is not anaphoric in value. We thus have the generic value, delimited via the reference to 'gin' in the initial conjunct to 'alcoholic beverages', which we saw in Section 3.1 (see also example (5) above).

(10) a. John drinks only gin, but I won't drink ø.
b. John drinks only gin, but I won't drink it.
(Lehrer 1970: 245, examples (67) and (68))

I would argue that this systematic difference in interpretation arises because of the fact that overt pronouns are nominals which, because of their inherent definiteness and (potential, at least) referentiality, change the Aktionsart of the verb whose internal argument they instantiate, from an atelic activity into a telic accomplishment. Thus with definite complement pronouns, the emphasis is no longer on the activity of drinking (or eating), but on the nature of the thing drunk (or eaten). But this may also be the case even with "incremental-object" verbs like *eat* and *drink*, whose Patient argument is understood to be progressively affected by the process involved, even when their internal argument is unexpressed syntactically. Compare (11a) and (11b) in this respect:

(11) a. Mary ate at noon.
b. The waiter served the main course. Mary ate hungrily.

In both (11a) and (11b), the tense is the definite past, and the reference is to a specific event which occurred prior to the act of utterance. In (11a), the presence of the contextualizing PP *at noon,* a σ_2 localizing satellite, induces the culture-specific stereotype 'midday meal' as the frame in which the event denoted is to be set, so that the predication is telic, and not atelic via non-instantiation of the A^2 (though the more basic "activity" reading is still co-present here). But in (11b), the presence of the σ_1 manner satellite *hungrily* highlights the basic activity sense corresponding to the predicate's inherent value (this satellite being a predicate satellite). There is no implicature available such that Mary actually finished eating the main course which she has been served. Thus the zero has the indeterminate, non-referential value which we saw in the case of the verbs in (3) and (4). If we apply Fillmore's "*I wonder what X V-ed*" test, it is positive in (11b) ('I wonder what Mary ate'), but negative in (11a) (with the predicted response #*She ate a midday meal*; however, with the type of response expected and normal for the same query on (11b) – e.g. […] *chicken and noodles* – it is positive). The bounded/non-bounded adverbial tests (see (12) and (13) below) also discriminate the two occurrences: for (11a), *Mary ate ø ?#for ages/in an hour at noon*; and for (11b) [...] *Mary ate ø hungrily for ages/#in an hour* .

Rappaport Hovav / Levin (1998: 104ff.) and Brisson (1994) also claim that it is the aspectual structure of the verbal predicates concerned which determines whether or not their internal argument may be left unrealized: however, it is not the static, inherent lexical-semantics of each individual verb which is relevant here, but the compositional semantics of the predicative unit as a whole (verb + possible extra adverbial element) – see also Ritter / Thomas Rosen (1998) and Van Hout (1999), as well as the contrast between (11a and b) above. In the (a) examples below, the verbs are simple activity predicates, while in the (b) ones, the presence of a resultative PP or aspectual particle determines an accomplishment event structure ((12) and (13) are my own examples):

(12) a. John ran (for half an hour/*in half an hour).
b. John ran to the river bank (?for half an hour/in half an hour).

(13) a. Sandy drank (for ten minutes/*in ten minutes).
b. Sandy drank up (?for ten minutes/in ten minutes).

The durative time adverbials *for half an hour* and *for ten minutes* are possible modifiers of the activity predicates *run* in (12a) and *drink* in (13a), while the bounded temporal PPs *in half an hour* and *in ten minutes* are clearly unacceptable. In the case of the accomplishment event type denoted due to the presence of the goal PP *to the river bank* in (12b) and the telic aspectual particle *up* in (13b), the bounded temporal PP is a possible modifier, though the durative one only results in an iterative reading of the events denoted (that is, there were repeated events of John's running to the river bank and of Sandy's drinking up during the time spans indicated, rather than one single unbounded event). This is typical of accomplishments, as Brisson (1994: 91) points out in the case of *write*-type verbs.

Now, as for the non-realization of internal arguments, both Brisson and Rappaport Hovav / Levin claim that this is only possible when the argument at issue is a "content", and not a "structural" one. The distinction involves that between the aspectual or "event structure" of the sentence as a whole, where the participants involved are "structural participants", and the lexically-specific content of the predicate which "heads" that structure. This predicate brings with it a

certain array of arguments in terms of its meaning: these are the "content" arguments (cf. García Velasco / Hengeveld's 2002 *abstract meaning definitions*, in the context of FDG). Thus there may be a discrepancy between the two types of structure. Brisson argues that ("activity") verbs of the type illustrated by *sweep* (*plough, pack, dust, vacuum, clean, mow, rake…*) may occur with either a durative or a bounded time adverbial,[2] whether with or without a syntactically-realized object NP, and whether this NP is definite or indefinite. This would give the predicate *sweep* (as well as the others in its class) the "content" structure *sweep* (x,y) but the event structure 'activity (x)'. From Brisson's account, one can infer that the "y" argument in the content structure is more or less totally determined by the meaning of this predicate (stereotypically, a "floor" of some kind) – an "inherent" argument, then; whereas, given that this verb is basically an activity predicate (as indicated by the various tests applied to it), there would be no second, internal argument at this event-structural level at all. Now, given that this is the case, the sole internal "content" argument, not being a "structural" one, need not be realized syntactically – so long as its essential content is contextually recoverable. This is the case with verbs of the type represented by *sweep*, where general knowledge tells us that it is typically floors that are swept (see also *plough* → fields, *pack* → suitcases, *dust* → furniture, *vacuum* → carpets, *clean* → artefacts, *mow* → lawns, *rake* → leaves, etc.). This general class of predicates is characterized by Rappaport Hovav / Levin (1998: 99) as "verbs of surface contact through motion". The situation described here would seem to characterize the first type of non-realization of internal arguments seen above in Section 3.1 (generic or indeterminate argument types, as illustrated in (3a, b), (4), (5), (10a) and (11b)).

On the other hand, where a given predicate has an achievement or accomplishment interpretation, there is necessarily a binary event structure involved (cf. García Velasco / Hengeveld's 2002 *predication*

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6 However, my feeling is that examples like Brisson's (unstarred) (9b) (p. 91) *Jack swept in an hour* are not fully acceptable. Interestingly in this regard, Ritter / Thomas Rosen (1998: ex. (48a), p. 160) query the full acceptability of a similar example, where *sweep* has a definite object NP: *John swept the floor* (?*in 5 minutes*/*for 5 minutes*).

frames), consisting of a causing event (an activity) and a resulting state. Thus there are inevitably two structural arguments, both of which must be realized syntactically, according to these authors. This would explain then why such predicates (for example, English *break,* as we have seen) cannot leave their internal argument unrealized. *Break* is an "externally-caused change of state verb", according to Rappaport Hovav / Levin (1998: 99). The content structure of *break* would then be *break* (x,y), and its event structure 'activity (x) CAUSE [BECOME *broken* y]', where *broken* represents both the essential content of the predicate *break* and its status as "resulting state" of the macro-event involved here. (I have inserted the abstract operators CAUSE and BECOME here, as well as the square brackets, which Brisson does not do; indeed, she does not represent the structure of *break* in her article.) It can be argued that the intransitive, inchoative use of *break* (as in *The vase broke*) is more basic, and that the transitive-causative use is derived from it by rule. I have attempted to formalize these two types of structure under (14a and b) below, drawing inspiration from the notation system used in Van Valin / LaPolla (1997) (the segment in parenthesis following '¬ **intact'** (y)' is intended to capture the selection restriction imposed on its single argument by the meaning of this predicate. For the inchoative "activity" or "process" value, the segment preceding the operator BECOME in (14b) would not be instantiated).

(14) a. "Content structure" of core sense of *break*, after Brisson (1994) and Rappaport Hovav / Levin (1998):

BECOME ¬ **intact'** (y) ((partially_)rigid_object, y)

b. "Event structure" of *break,* after Brisson (1994) and Rappaport Hovav / Levin (1998):

[[activity (x)] CAUSE [BECOME ¬ **intact'** (y) ((partially_)rigid_object, y)]]

Brisson's (1994: 97) two licensing conditions on the possibility of unexpressed objects are as follows:

(15) a. **Grammatical licensing condition:** structure arguments must be expressed.
b. **Contextual licensing condition:** the unexpressed object must be understood.

Rappaport Hovav / Levin (1998) formalize and further develop Brisson's essential insights. They propose two well-formedness conditions on the syntactic realization of event structures, as follows:

(16) **Subevent Identification Condition**
Each subevent in the event structure must be identified by a lexical head (e.g. a V, A or P) in the syntax. (Rappaport Hovav / Levin 1998: 112)

(17) **Argument Realization Condition**
a. There must be an argument XP in the syntax for each structure participant in the event structure.
b. Each argument XP in the syntax must be associated with an identified subevent in the event structure. (Rappaport Hovav / Levin, 1998: 113)

Condition (17a) makes more precise Brisson's (1994) "Grammatical licensing condition" given under (15a) above; while Condition (17b) ensures that all argument expressions in the syntactic realization be relatable to a predicate corresponding to an identifiable subevent in the event structure associated with the sentence. Condition (16) completes the picture, in that it ensures that each predicate marking a subevent in the event structure be relatable to a relevant lexical head.

However, it would seem that these conditions are much too rigid and absolute: they do not take enough account of the surrounding co-text or context of occurrence of the verbal predicates at issue here – i.e. of the way in which these predicates are actually used. If we take the (causative-accomplishment) verbal predicate *break* as a typical verb having a binary event structure, with two content and two structural arguments, the prediction is that non-realization of the internal argument is excluded – as we have seen. In the case of the non-referential use of the verb, of course, the authors could claim that what we have is an activity, such that there is no longer an internal structural argument since the binary event structure is no longer available. This could occur in the following kind of situation: imagine a warehouse full of trestle tables on which are piled substandard mass-produced cups, plates and saucers etc., all containing imperfections of one kind or another. Members of the public are invited to break these items into pieces, so that they can more easily be recycled. On the entrance to the warehouse is pinned a large notice, with the words:

(18) Break ø to your heart's content!

Clearly, this would correspond to the indeterminate, non-referential use of transitive verbs with unrealized complements that we saw in Section 3.1. As already noted, this use would not constitute a counterexample to Brisson's and Rappaport Hovav / Levin's constraints (since in this usage *break* and similar verbs would be activity and no longer achievement predicates; as such, they would be only unary event predicates).

But there are two other possibilities with *break*. The first is the possible deictic use which we briefly saw in Section 3.2, where the null complement of *break* has a referent available via the utterance situation. As an example, consider again the "reject" crockery situation evoked a moment ago. Imagine a situation where a member of the public has entered the warehouse and has been merrily smashing plates, cups and saucers for the last 20 minutes. Suddenly, he comes upon a large bowl with an attractive design, which doesn't seem to him to be in too poor a condition. As he holds it up to examine it, the attendant walks towards him and says:

(19) Come on now, break ø! They've all got to go, you know!

Here, the referent is clearly present, both at the semantic and the discourse-representational levels – and yet the internal "event-structural" argument is syntactically null, contrary to conditions (15a) and (17a). I believe (19) corresponds to a deictic and not purely anaphoric use of the null complement, since the addressee is tacitly querying the status of the intended referent (thus it consists in introducing the referent *qua* "non-breakworthy" item of crockery in this context). If an overt pronoun were to be used in place of the zero complement here, I believe it would be the demonstrative pronoun *that* rather than the (purely anaphoric) third person pronoun *it*.[3]

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7 Christopher Butler has suggested that it is more likely that the null reference would be anaphoric rather than deictic in (19). I accept this possibility, but my feeling is that either type of interpretation is possible here – i.e. the utterance may be contextualized in two ways. However, whether it is in the last analysis deictic or anaphoric, in either case there is an A^2 "structure" argument present, a fact which contradicts Brisson's and Rappaport-Hovav / Levin's stricture.

Granted, there are "extenuating" circumstances here, independently motivating the null complement of *break*, since this type of occurrence is restricted to the type of highly modalized context represented by the imperative mood in (19).

But there is a second type of counterexample to these stipulations, falling within the third of the three cases outlined in Section 3.3. This is the "exophoric" use of predicates like *break*, which I claimed come under the anaphoric, contextually-definite use (as in the caption *Break ø in an emergency* displayed above a glass panel covering an alarm handle). Here too there is an argument at the lexical-semantic level as well as a discourse-referent at the level of discourse. Again, the possibility of such occurrences is a counterexample to stipulations (15a) and (17a).

In all three types of example involving *break* with a null complement, the clause is in the imperative mood. This is no accident, in fact. What this mood induces (contrary to the declarative mood, in particular) is a focusing of attention on the object of the command – the speech-act type typically correlating with the imperative form. This serves, then, to enhance psychologically, i.e. to "profile", the entity at issue, and thus to allow it to be unrealized syntactically.

5. Towards an FDG account: abstract meaning definitions, interpersonal-level representations and predication frames

Let us now attempt to describe and account for the properties and behaviour of null complements in English, as identified in Sections 2-4 above, in terms of the new Functional Discourse Grammar model. I will assume familiarity with the internal organization of this model (see Hengeveld 2004a, 2004b, 2005, and Hengeveld / Mackenzie forthc. for details). In García Velasco / Hengeveld's (2002) account,[4] abstract meaning representations are operated on by "linking rules" mediating between the lexicon and an initial syntactically-relevant structure ("predication frames"), in that the lexemes in question are eventually inserted into the latter as a function of the parallel

8 Henceforth GVH.

configuration of predicates and arguments in their meaning representations.

For arguments against the standard FG construct "predicate frame" and the existence of Predicate Formation rules which map predicate frames into other predicate frames for derived senses or forms of given predicates, see GVH (2002) as well as Cornish (2002b). GVH further present and illustrate their concept of predication frames: see in particular their examples (29) (2002: 110-112), whereby given lexemes are matched with syntactically-relevant structures (predication frames) in which they may occur. The authors present examples of their formulation of abstract meaning definitions under their (32) and (35) for the causative and inchoative senses of the English verbal lexeme *open* (2002: 114 and 115, respectively). These formalizations are inspired by Van Valin / LaPolla's (1997) representation system, which is also the model on which Mairal Usón / Faber (2002) base their construct "lexical template".

Abstract meaning representations are subject to "linking rules" mediating between the lexicon (representations of individual lexemes) and the semantico-syntax (predication frames), in that the lexemes in question are eventually inserted into the latter. The authors operate here in terms of a very simple procedure of matching between argument structures in meaning definitions, and transitive or intransitive predication frames, as a function of the parallel number and positions of the arguments concerned in each construct. However, as we will see below, such "syntactic" verb-argument structures do not always match one-to-one the relevant parallel predicate-argument configurations within the abstract meaning definitions. (20a, b) give GVH's (2002: 114, 115, items (32) and (35), respectively) representations of the meaning definitions of the causative and inchoative forms of the verb *open*, and (21a, b) present its insertion into the two predication frames selected by these two representations, respectively.

(20) a. *open* [V]
[f_1: [CAUSE (x_1) [BECOME **open'** (x_2)]]]

b. *open* [V]
[f_1: [BECOME **open'** (x_1)]]

(21) a. (T_1: (f_1: *open* [V] (f_1)) (T_1)) (R_1: (x_1)$_{Ag}$ R_1)) (R_2: (x_2)$_{Pat}$ (R_2))

b. $(T_1: (f_1: \textit{open}\ [V]\ (f_1))\ (T_1))\ (R_1: (\tau_1)_{Pat}\ (R_1))$

"T" symbolizes an ascriptive act at the interpersonal level in a Functional Discourse Grammar, "R" a referential act, and "τ" denotes any entity type (*x*, *e*, *p* or *E*) at the representational level. Representation (20a) selects the transitive predication frame presented in (21a) since both contain two arguments, while representation (20b) selects the intransitive one given in (21b) since there is only one argument variable in each representation. However, as suggested in Cornish (2002b), a simplification of the two representations in (20a, b) is possible and indeed desirable, since (as GVH 2002: 116 themselves point out), (20b) is a proper part of (20a). By placing in parentheses the causative structure in (20a) under which the inchoative sub-structure is embedded, a single representation is achieved, which is all that is required.

I would agree with García Velasco / Portero Muñoz (2002: 19-20) that 2-place predicates whose A^2 is syntactically null, and which denote activities rather than accomplishments when their A^2 is unrealized, remain 2-place predicates semantically. As in the analysis put forward here, the authors provide a meaning definition for incremental-object activity verbs like *eat* whereby the second argument-variable position for such predicates is filled only by the selection restriction transferred via the meaning of such verbs (<food> in the case of *eat*). But it is not necessarily the case (and this criticism also applies to Brisson's 1994 and Rappaport Hovav / Levin's 1998 similar approach here) that "If the speaker decides to build up a telic predication both participant variables in the abstract meaning definition will be projected onto the syntax. This leads the entry to select a transitive predication frame with two argument positions". For this would be to ignore null-complement examples such as (2c´) with *hit*, where the predication is contextually telic, or (11a), where the context in which *eat* occurs induces, precisely, a "telic" predication; or possible "deictic" examples such as the use of the achievement (hence telic) predicate *break* as in (19) above. When such verbs occur in this type of use in (syntactically) intransitive clauses, their A^2 must still be present as a fully referential argument. To illustrate, let us attempt first to represent the meaning definition of *buy*, whose meaning definition would be as represented in (22).

(22) *buy* [V]
[f_1: [CAUSE (x_1) [BECOME NOT **have'** (x_2) (x_3: <commodity>)] & [BECOME **have'** (x_1) (x_3)] & [BECOME **have'** (x_2) (x_4: <payment>)]]]

(22) reads (somewhat stiltedly) as follows: '(x_1) causes (x_2) to come to not have (x_3), a commodity, and (x_1) to come to have (x_3), and (x_2) to come to have payment'. Now, only (x_1) and (x_3) are treated as nuclear arguments of the verb *buy* by the syntax, the remaining arguments ((x_2) and (x_4)) being optionally realized syntactically as σ_2 satellites. This is important, since only the non-realization of the (x_3) argument will give rise to generic or indeterminate, activity predications of the kind seen in (3), (4) and (5). It is as if the essential meaning of *buy* were something like '(x_1) come to have (x_3)', and this is reflected in the transitive syntax of this verb. Let us see what a representation of the fourth conjunct of (4) would look like at the initial, interpersonal level in an FDG derivation.

(23) **INTERPERSONAL LEVEL**
[M: (A_1 [DECL-P $(P_1)_S$ $(P_2)_A$ (C_1: [(T_1: (f_1: 'buy')$_{Foc}$) (R_1: $((P_2)_A)$) (x_1: <commodity>))])] (R_2: 'London's Motor Show')

The locative σ_2 satellite *at London's Motor Show* in (4) serves to delimit the domain of "commodities" denoted by the null complement to new models of motor vehicles and accessories, as we have seen. Here, there is no "R_2" (referential act) at the second argument position of 'buy', since no discourse referent is evoked here, as we have seen, the predication being an "activity" one (cf. also García Velasco / Portero Muñoz 2002). Contrary to what is claimed by GVH (2002), it is not the particular parallel configuration of argument variables within the meaning definition in (22) which determines whether the predication frame selected will be a transitive or an intransitive one, but rather the speaker's intention to denote an activity in contrast to an accomplishment SoA. In this type of case, it is not an intransitive predication frame which will be selected, but rather a transitive one – in which the A^2 is not lexically filled. The predication frame in which the lexical ingredients whose meaning is represented in (22) are inserted might look like (24):

(24) **REPRESENTATIONAL LEVEL**
([(f_1:*buy*[V] (f_1)) (x_1:(P_2)$_A$)$_{Ag}$ (gx_2:<commodity>)$_{Pat}$]$_{Activity}$)

Now, although in (24), the syntactically-relevant argument position is (x_2), while its counterpart in the meaning definition of *buy* in (22) is (x_3), this does not in fact pose a problem, since the mapping between the two positions (semantic and syntactic) can be achieved via the semantic role of the relevant argument. In (22), (x_3) is the second argument of the first 'BECOME **have'**', and so receives the Patient role (cf. GVH 2002: 114); and the (x_2) argument in (24) is explicitly annotated for the same semantic function. But under García Velasco / Portero Muñoz's (2002) account, this argument mapping would not be possible, since activity-denoting meaning definitions may only select *in*transitive predication frames. Thus, the second argument position, as specified in (24), would not be available to be involved in the mapping procedure. As pointed out earlier, it is the (general) selection restriction placed on this argument variable in the meaning definition (here <commodity>) which is transferred to the (x_2) position in (24), marked with the term operator 'g' for 'generic'. As we have also seen, there are also restrictions on the π_1 (aspectual) operator selected for the predication as a whole, since this must be IMPF (imperfective). That the Tense (π_2) operator need not be NON-PAST for this value to obtain is shown by examples like (3a, b), where the Tense is Past but the Aspect is Imperfective.

Now let us examine the representation of the two other types of value associated with null complements which we distinguished in Section 3. Let us take the two verbs *write* and *answer*, as used in example (7).

(25) a. *write* [V]
[f_1: [CAUSE (x_1) [BECOME **exist'** (x_2: <letter>)] & [INTEND (x_1) [**go-to'** (x_2) (x_3.: <human>)]]]]

b. *answer* [V]
[f_1: [CAUSE (x_1) [BECOME exist' (x_2: <answer>)] & [INTEND (x_1) [go-to' (x_2) (x_3.: <original_sender >)]]]]

Both the predicates *write* and *answer* as represented in (25a) and (25b), respectively, take three arguments, in their 'correspond' sense.

In (7), the second argument of *write* is unrealized, while both the second and the third arguments of *answer* are unexpressed. The second argument of *write* in (7) evokes a discourse referent, as we have seen. The initial Interpersonal level representation of each conjunct of (7) would be as in (26a) and (26b), respectively:

(26) a. **INTERPERSONAL LEVEL**
[M: (A_1 [DECL-P $(P_1)_S$ $(P_2)_A$ (C_1: [(T_1: (f_1: 'write')$_{Foc}$) (R_1: $((P_1)_S)$) R_1) (R_2: (i1x_i: <letter>) R_2) (R_3: $((P_1)_S)$ R_3)])])]

b. **INTERPERSONAL LEVEL**
[M: (A_1 [DECL-T $(P_1)_S$ $(P_2)_A$ (C_1: [(T_1: NEG (f_1: 'answer')$_{Foc}$) (R_1: $((P_2)_A)$ R_1) (R_2: (Ax_i: <letter>) R_2) (R_3: $((P_1)_S)$ R_3)])])]

As is evident from (26a), the unexpressed A^2 of *write* is the object of a referential act, whereby a discourse referent is evoked. The predication as a whole thus designates an accomplishment and no longer an activity SoA, as in (23). This is yet another counterexample to the claims of García Velasco / Portero Muñoz (2002: 19), Brisson (1994) and Rappaport Hovav / Levin (1998). And in (26b), the equivalent argument of *answer* is equally the object of a referential act – this time anaphoric in character. The (filled) predication frames selected will be those given as (27) and (28), respectively.

(27) **REPRESENTATIONAL LEVEL**
([(f_1: *write* [V] (f_1)) (x_1: $(P_1)_S)_{Ag}$ (i1x_2:<letter>)$_{Pat}$ (x_3: $(P_2)_A)_{Rec}$]$_{Accomplishment}$)

(28) **REPRESENTATIONAL LEVEL**
([(NEG (f_1: *answer* [V] (f_1))) (x_1: $(P_2)_A$) $(Ax_2)_{Pat}$ $(Ax_1)_{Rec}$]$_{Accomplishment}$)

6. Conclusion

The constraints on the occurrence of null complements of transitive verbs, adjectives and prepositions in English would appear to be determined by the need to recover (i.e. to "license") that or those internal argument(s). The fact that one or more non-first arguments of a transitive predicate are unrealized in the syntax does not mean that it is intransitive (i.e. monovalent) semantically.

In two of the three subtypes (the non-referential one and the anaphoric one), the zero complement of otherwise transitive (or ditransitive) verbs, adjectives or prepositions is licensed by the highly presupposed nature of its content: in the first case, an "inherent" argument, part of the host predicate's meaning, potentially narrowed to a more specific denotation type by features of the co(n)text; and in the second, a topical (and hence also highly presupposed) discourse referent licensed via the cotext and/or context of utterance of the host predicate, which is retrieved by the null complement. The former subtype is lexically presupposed, while the latter is discourse-pragmatically presupposed. As for the third of the three subtypes of null complement, the referential "discourse-new" one, its existence is licensed via a combination of the lexical-semantic and Aktionsart structure of the host predicate (making available an appropriate inherent argument, e.g. 'letter' in the case of *write* in its 'correspond' sense) and certain referentially-relevant features of the host predication as a whole (tense, aspect, temporal or locative "framing" adverbial modifiers etc.). Only the inherent-argument component of the discourse-new referent evoked is (lexically) presupposed in such a case. Hence, this subtype may be viewed as the marked member of the set of null complement interpretation types.

Our brief consideration of García Velasco / Hengeveld's (2002) account of the structure and function of their construct "predication frames" within the framework of a Functional Discourse Grammar (Hengeveld 2004a, 2004b) has shown that the mapping between lexical semantics (the abstract meaning definitions of head lexemes) and syntactic realization – the first stage of which corresponds to the selection and completion of a relevant predication frame – is not a simple one-to-one parallel matching between argument positions in the former and those in the latter. The relation between semantic and syntactic structure is clearly not isomorphic, as our examination of the lexical-semantic structure of *buy* in (22) and its selection of the (syntactically-relevant) predication frame in (24) showed. For the purpose of indicating non-realization of syntactic arguments, the A^2 (and potentially also A^3) position(s) within the latter need(s) to be linked to the relevant argument variable within the head lexeme's meaning definition. I have suggested this be done in the case of the A^2 argument of *buy* (see also *write* and *answer*) by means of the identity

of semantic function (here the Patient role) between the two arguments, at the lexical and the representational levels (the completed predication frames). Moreover, a consideration of these three verbs shows not only that their semantic and syntactic structures may not be isomorphic, but also that the selection from the meaning definition of a subset of "core" arguments by the syntax (the relevant predication frames of these verbs) has the effect of profiling the referents of these arguments (cf. Fillmore 1977, Langacker 1991: 304-324, Van Hout 1999: 265-266), showing that the syntactic realization is not merely "expressive" in value, but has semantic import.

The discussion in Section 5 also shows that the particular interpersonal-level representation specified at the initial stage in an FDG clause derivation is relevant for the selection (a) of a particular sense of a given head predicative lexeme, and (b) of a particular predication frame to express its abstract meaning definition syntactically. A further issue is how exactly the stages of expansion of an underlying clause structure apply as from the (filled) predication frame. Is this equivalent, for example, to the "nuclear predication" of the standard FG model? Clearly, more work on these aspects needs to be done within the FDG framework.

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