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FUNCTIONAL VERBS IN PREDICATE FORMATION: EVENT-TYPE HIERARCHY AND GRAMMATICIZATION*

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1. INTRODUCTION. The purpose of this paper is to examine the syntactic and semantic status of a class of verbs which combine with other categories to form predicates. I will refer to such verbs as FUNCTIONAL verbs. I assume that a functional verb can be derived from its lexical variant by a process of GRAMMATICIZATION. I use the term grammaticization in a narrow sense to refer to a synchronic process which makes some components of LEXICAL CONCEPTUAL STRUCTURE (LCS) oblique to the grammar.¹

I will further assume that functional verbs encode relational content in the sense of Sapir (1921). Two types of relational content can be identified with respect to verbs. The first is an internal-relational content that encodes EVENT-TYPES not unlike 'aktionsarten' familiar from Vendler (1967) and Dowty (1979). In broad terms, these event-types include state, change-of-state, causation, and activity. The second one is an external-relational content that locates the position of the event relative to the time of speech.

Thus, a lexical verb typically consists of three types of information: (a) idiosyncratic-lexical information, (b) event-type information and (c) temporal information. The first and the second types of information are often morphologically fused. Temporal information, on the other hand, is typically encoded by inflectional morphology. However, in some constructions, the lexical and event-type content can be dissociated. For instance, in English, event-types can be realized either by bound elements, as in (1a), or by independent forms, as in (1b):

(1) a. -en 'inchoative/causative'; -ize 'causative'

b. be 'state; become 'inchoative'; make/cause/have 'causative'

In this paper I will focus on independent forms which encode event-types. In section 2, I present data from Amharic (Ethiosemitic) which employs the verb say to form a complex verb. I argue that there is an open MANNER component in the LCS of the verb say which must be spelled out syntactically. In section 3, I extend the proposed analysis to other cases of functional verbs; I examine the status of the verb take in Fon (Kwa) which functions as a closed-class member in a serial verb construction. In section 4, I discuss some consequences of the proposal.

2. THE QUOTATIVE VERB say

2.1. BASIC FACTS. In Amharic the verb alə 'say' occurs as a lexical verb just like the English quotative verb say:

(2) ləmma y+-hedal alə

Lemma 3MS-go.imp.3MS say.pf.3MS

Lemma said: "He will go".

The basic word order in Amharic is Subject-Object-Verb and the quotation clause occupies the object position. The Amharic quotative construction has only a direct quote structure in that the subject of the quote clause in (2) must be disjoint in reference from the original speaker.

Now the interesting fact is that a form which is the same as alə 'say' appears in structures such as (3):

(3) a. t'ərmusu səbbər alə
glass-DEF break 'say'.pf.3MS
The bottle broke.

b. ləmma rot' alə

L. run 'say'.pf.3MS

Lemma ran.

c. ləmma tzztn alə

Lemma sad 'say'.pf.3MS

Lemma became sad.

d. ləmma b+rr+d alə-w

Lemma cold 'say' pf.3MS-1MO

Lemma became cold.

e. m+ff+t alə
night 'say'. pf.3MS
It became night.

f. ləmma zɨm alə

Lemma quiet 'say'.pf.3MS

Lemma kept/became quiet.

Notice that the object position which is occupied by the quotation in (2), is occupied in (3) by a form which I will simply call a VERBAL NOUN (VN). Notice also that all grammatical features including tense and agreement are encoded by the say verb and not by the VN.

There is an obvious phonological similarity between the ale in (3) and the quotative verb ale in (2). However, whether there is an interesting structural

relationship between the two verb forms needs to be determined.

I argue that alə in (3) is not simply homophonous with the quotative verb in (2) but is rather systematically related to it. One piece of evidence is that the alə of (3) has retained the morphological properties of the quotative form. The verb alə is historically derived from the tri-radical *bə?ələ. However, it has the curious property of exhibiting its older first radical /b/ only in the gerundive; this is true for both instances of alə as can be seen in (4) and (5) respectively:

(4) ləmma t-hedalə-hu btlo...

Lemma 1MS-go.imp.-1MS saying...

Lemma saying: "I will go"...

(5) t'ərmus-u səbbər bəlo ... glass-DEF break 'saying' ...

The glass broken . . .

If the alə form in (3) is simply homophonous with the quotative verb it would be very difficult to account for the similarity in the gerundive, particularly since the phenomenon is not part of a regular phonotactic process of the language but rather an idiosyncratic fact that must be learned about this verb.

Secondly, it has been noted in the literature that the use of a verb meaning say as some sort of verbal formative, strange as it may seem, is in fact quite common in Nilotic and Cushitic languages (cf. Armbuster 1960). Again, this would be difficult to explain if the forms were accidentally homophonous with their respective lexical variants.

Third, a number of authors have observed that the construction may have evolved from an onomatopoeic source (see Armbuster 1960, Dawkins 1960). Synchronically, there are a number of constructions in which the form that co-

occurs with ale 'say' can be cognized as an imitation or reproduction of a physical sound emitted by an object. Examples are given in (6):

(6) a. zɨnab-u t'əb t'əb alə rain-DEF t'əb t'əb say.pf.3MS
The rain dripped.

b. bər-u k^wa k^wa alə
door-DEF k^wa k^wa say.pf.3MS
The door knocked.

c. hts'an-u ou ou alə
child-DEF ou ou say.pf.3MS
The child screamed.

Although the fact that the onomatopoeic item can appear with the verb alə 'say' is not perhaps surprising, as the verb is after all a quotative verb profiling vocalization, it is equally obvious that the items which obligatorily co-occur with ale in (3) are not onomatopoeic at all. Consequently, one needs to gain more insight into the nature of this verb.

Thus I assume that the two alə 'say' forms are polysemous. This assumption immediately raises one important question: how are the related senses encoded? In other words, how is it that a verb which primarily profiles vocalization can also encode abstract events?

Different approaches can be taken to address this issue. One way would be to list each use of the form in the lexicon. Another approach would be to list only one of the senses as basic and derive the related senses by some principle or algorithm. Still another approach would be to deny the discrete property of categories and argue for some kind of continuum upon which the various senses of the verb can be plotted, ranging from the most lexical to the most functional.

It is not my purpose here to compare the various ways of addressing this question. Rather I will suggest one possible direction which is consistent with some contemporary views of grammar. Within the context of generative grammar in general and the Principles and Parameters approach (cf. Chomsky and Lasnik 1991) in particular, the availability of multiple lexical entries cannot be the correct option because it lacks the explanatory power necessary for making generalizations (see also Pustejovsky 1993).

Thus I would like to argue for a theory which can account for the relationship between a lexical verb and its functional variants without assuming the availability of multiple lexical entries. My strategy is first to probe into the LCS of the lexical verb based on Jackendoff (1983), (1990), and then determine whether the same LCS can capture the functional use of the verb.

2.2. THE LCS OF say. What then is the LCS of the verb say? Jackendoff (1990) (following Gruber 1976) has suggested that the verb say has a Theme argument which belongs to the ontological category INFORMATION. The rationale behind this proposal is that when one says something to someone, what is said can be conceived of as an entity moving from the speaker to the receiver, that is as Theme. Beyond this however, it is not clear what the LCS of the verb say should be. In particular, Jackendoff (p.c.) observed that it is unclear whether say is or is not a conceptual primitive (SAY) analogous to GO, CAUSE, BE, etc.

However, implicit in the works of Jackendoff and Gruber is the idea that say is a two-place predicate, with Agent and Theme arguments. Notice that if the entity which would surface in the syntax as a quotation is given the status of Theme, then

the subject must be some kind of Agent. This follows from standard assumptions about the organization of events as articulated either in terms of the Thematic Hierarchy (see Grimshaw 1990, Jackendoff 1990 among others) or in terms of the Causal Chain of Croft (1991). In other words, if we take the *localistic* definition of Theme, as an entity which moves in a trajectory, the eventuality it participates in is that of a change in location. Any sub-event which comes before a change of location in a chain must have a causal function. This leads to the conclusion that the agent of say is an argument of CAUSE or an external instigator. Then translated into a Jackendovian notation, the LCS for say may be represented as in (7):

(7) say V [CAUSE ([Thing α] A, [GO ([Info] A, [FROM [Thing α]])])] TO [Thing] < A>

According to (7), the verb say denotes an event in which the first argument is a thing, i.e. a causer and the second argument is an event. The embedded sub-event designated by GO - has two arguments: the entity (i.e. Info(rmation)) that moves and the trajectory it traverses or the Path (elaborated by the Source function From and the Goal function To). The A in sub-script stands for arguments which will be linked into syntactic positions. The end-point of the trajectory - the argument of TO - is optionally A-marked (<A>) capturing the fact that the goal argument of say is optional in the syntax.²

Despite its initial plausibility, there are non-trivial conceptual problems with the representation in (7). First, notice that if one accepts a *force dynamic* notion of causation as developed in Talmy (1985) where causation implies some degree of coercion, it is easy to see that the agent of *say* cannot be an external instigator. That is *say* cannot be in the same class with typical causative verbs such as *kill*, *bring* etc.

Second, it appears that the agent of *say* behaves like the single argument of the so-called unergative verbs (cf.Perlmutter 1978), or the INTERNALLY-CONTROLLED intransitive verbs in the sense of Smith (1970) and Levin and Rappaport (1992). According to Levin and Rappaport (1992), verbs like *laugh*, *dance*, *tremble*, denote eventualities that are internally-controlled, i.e., the eventuality can be controlled only by the person engaging in it. But verbs such as *break*, *build*, *kill*, denote eventualities that are under some sort of EXTERNAL CONTROL even when used intransitively.

This dichotomy has some genuine syntactic and semantic ramifications which have been amply demonstrated in Levin and Rappaport (1992). Consider (8) for instance: internally-controlled verbs typically lack a causative variant in transitivity alternation, whereas externally controlled verbs are not subject to this restriction:

(8) a. John laughed.b. The glass broke.*The clown laughed John.John broke the glass.

Verbs such as *dance* are at times referred to by the term MANNER OF MOTION. Jackendoff (1990:90) argues that Manner of Motion verbs cannot be considered as a variety of GO because they do not encode Path. Hence, for verbs such as *dance*, and also for verbs like *laugh*, *sneeze*, *and cry*, Jackendoff suggests the function MOVE as in (9):

(9) [MOVE ([Thing])]

Suppose that the event denoted by the verb say is internally controlled, and thus its Agent argument has the same status with the argument of verbs such as *laugh*, or *dance*. Notice that one crucial property which distinguishes the Manner of Motion

class of verbs from say is that the latter cannot occur on its own: John laughed is a complete sentence but *John said is not. Thus, here is a verb, the subject of which has the properties of internally-controlled intransitive verbs, and yet it must appear with another obligatory element (the quotation). Then the question is this: what is the syntactic and semantic status of the complement of say?

Determining the status of the quotative construction is a classical problem that has been addressed by a number of researchers over the years including Partee (1973) and Munro (1982), among others. For the sake of space I cannot go into the detail of the many interesting issues related to this question (but see Amberber 1995). I will instead propose a possible LCS for say which will account for its use as a functional form. Consider the dilemma once more: if we adopt a structure like (7), it may represent the non-agent argument, the entity which surfaces as the object, but goes against what we know about standard causation. On the other hand, if we adopt a representation such as (9) and claim that say is like any other internally controlled unergative verb, we account for the agentive status of the subject, but leave no room for the representation of the quotation whatever its thematic status turns out to be.

I would like to argue that *say* is best considered as a variety of GO. I will use the subscript SAY to indicate the particular semantic field within GO. The first argument of the event GOsAY is the *sayer* and its second argument is MANNER with an optional trajectory (Path). This can be schematized as in (10):

[GOSAY ([Thing] A. [MANNER] A. [Path]<A>)]

I am attributing a semi-primitive status to SAY by identifying it as a semantic field of GO. The notion of a semantic field is independently motivated in Jackendoff's

system to account for conceptual domains such as Possession (GOPOSS). What I would like to argue for is that the verb *say* is lexically unspecified for manner or more precisely for what I will call INNER MANNER. I assume that Inner Manner is

part of the (idiosyncratic) lexical meaning of every verb.³

Thus, suppose that say is a verb which lacks Inner Manner. In order to be interpreted, this component must be spelled out by another means, namely by the syntax. The function of the entity which must co-occur with the verb say is then to spell-out Inner Manner. This entity occupies a canonical object position in the syntax, but is different from other thematic arguments. While thematic arguments are true things which can have independent existence, the complement of say is an elaboration of the event itself. In fact, it is natural to assume that syntactically the quotation is some kind of cognate not unlike objects of unergative verbs⁴ such as dance as in dance a ceremony (see Austin 1982).

Now granted that the LCS of the lexical say is as represented in (10), how can we account for its functional variant? Suppose that there is a process available in universal grammar which suppresses parts of the LCS of a verb. Descriptively, this process can be referred to as BLEACHING, a common trend in grammaticization through which some lexical items acquire grammatical character (see Hopper and Traugott 1993). Since, by hypothesis, grammatical items express topological notions (see Talmy 1987), when a lexical verb acquires a grammatical character it loses its specific reference. What this means with respect to say is that the specific GOSAY becomes the topological GO after grammaticization. Once the verb say is underparsed (see note 1) as GO, then it would be free to encode event-types that are non-causative. Recall that this is exactly what we find in Amharic; in its functional

realization, the verb alə spells-out only non-causative events. For example consider (3a) repeated as (11) and the LCS of the functional alə presented in (12);

(11) t'ərmusu səbbər alə glass-DEF break 'say'.pf-3MS The bottle broke.

(12) alə V

[GO ($[Thing]_A$, $[MANNER]_A$, $[Path]_{A>}$)]

The first argument of GO will be realized by the entity which undergoes change of state (*the bottle*), whereas the manner component will be spelled-out by the entity which we called Verbal Noun (glossed as *break* in (11)).

It is interesting to note that the VN has one peculiar property: in tri-radical roots the form typically appears in two different templates, identified in the literature (see Beyene 1972) by the features INTENSIVE and ATTENUATIVE.

(13) a. C+CC+C [+Intensive] : ≈complete, ≈instant

b. CəCəC [+Attenuative] : ≈slight

In general, the plus-intensive template, as exemplified in *break* of (11) can have a range of related meanings - denoting that the eventuality comes about rather intensively, instantly, completely, or in a manner which has the property of all these. This feature clearly has a flavour of manner and its occurence with the functional ale is quite natural as it is the spell-out of the Manner component. When the verb is used as a functional form, a new predicate is borne - a predicate which is composed of two morphologically independent items as in (14):

(14) [stbbtr VN ale V]

The VN provides the idiosyncratic aspect of the verb meaning (including Inner Manner) whereas the verb ale remains constant spelling-out non-causative event-types.

Therefore, to summarize, the verb *say* which appears to be unusual as a functional element turns out to have the right properties to encode relational content. In the next section, I would like to show that certain other verbs, described in the literature as *closed-class* may be profitably analyzed as functional verbs. The case I will focus on involves a closed-class verb in a language with a serial verb construction.

- **3.** CLOSED CLASS VERBS AS FUNCTIONAL VERBS. In the literature of serial verb languages a number of authors make a distinction between CLOSED and OPEN classes of verbs (see Sebba 1987). According to Lefebvre (1991) the verb *take* in Fon (a Kwa language of West Africa) belongs to a closed class. This verb cooccurs with verbs of an open class, as the example in (15) shows (from Lefebvre 1991):
 - (15) kòkú só àsō yì/wá àxì

 Koku take crab go/come market

 Koku brought (direction away/towards the speaker) the crab to the market. (p.39)

This verb, of course, can also occur on its own in structures such as (16).

(16) kòkú só àkwé/ àsɔ / nu

**Koku take money/crab/something

Koku took money/ a crab/ something. (p.55)

Lefebvre argues that the verb *take* has a causation component which requires an Agent and proposes the LCS represented in (17):

(17) [x cause [y undergo change of location]] / TAKE (p. 55)

According to Lefebvre the open class verbs which co-occur with *take* in the serial structure are motion verbs such as *go*, *come*, or verbs such as *give*, *teach/study*, *show/learn*. The question is then whether the open class verbs can be defined in a unitary way. Lefebvre argues that all the open class verbs which can appear with *take* can be described by the LCS in (18):

(18) [y undergo a change of location in a direction away from/towards the speaker to (a location) z] (p.56)

Lefebvre further argues that the operation of serialization is defined as a process which involves the association of the LCS of two verbs. Note that both verbs come together with their full LCS, as shown in (19a) and (19b) respectively:

(19) a. *Take* [x cause [y undergo change of location]]

b. Go [y undergo a change of location to z]] (p.59)

The problem with the association of these two verbs is that there will be two Theme arguments that need to be mapped onto syntax but there is only one position available in the syntax. Thus one Theme must be blocked. Crucially for Lefebvre, among the two y variables or Themes, the one which must not be realized in the syntax is that of the *take* verb. Thus, the following properties of the construction must be accounted for:

- (20) a. Two y variables referring to a single Theme of location;
 - b. Only one argument represented by a y variable is realized;
 - c. Embedding of the LCS of the verb of the open class within that of the *Take* verb. (p.60).

It is also suggested that the construction involves a substitution operation which is stated in (21):

(21) Serialization is a substitution process which substitutes "a LCS of type [y undergo change of location to z] for the [y undergo change of location] of the *Take*-verb." (ibid).

To the extent that Lefebvre's analysis of the serial sequence as involving closedclass and open-class with the properties presented above is correct, the analysis which stipulates an asymmetrical relationship in the substitution operation such that the internal argument of the derived LCS must be that of the open class verb and *not* that of the *Take*-verb is particularly problematic; that is why substitution should apply in this asymmetrical fashion has been left unmotivated.

But suppose that *take* which participates in the serial construction is actually a functional verb which spells out a single event-type, i.e. CAUSE. I propose that this can be achieved by assuming some kind of Transparency Condition along the

lines of (22):

(22) If a lexical verb denotes a complex event, only its highest sub-event will be transparent to syntax when used as a functional verb.⁵

For the present purpose, I assume the Event-type hierarchy in (23), in which the highest event-type is CAUSE.

(23) Event-type hierarchy

Causation > Change of state/Activity/State

Note that within our proposal none of the properties listed in (20) will be assumed as the closed class *take* does not have the full LCS attributed to its polysemous lexical variant. In other words, when the verb take is underparsed, only the highlighted portion of (17'), will be visible to the syntax.⁶

(17') [x cause [y undergo change of location]] / TAKE

As a result, there are no two y variables corresponding to one internal argument. The stipulative nature of the substitution operation also disappears as there is no need for embedding the LCS. The term *closed* class then makes sense as a descriptive term for the functional *take* as it has more or less the same status as morphological causative markers in non-serial verb languages.

4. CONSEQUENCES. Before concluding I would like to discuss some consequences of the proposal. Although the present study has focused on verbs, it would be desirable if the basic insight can be extended to other types of predicates. I believe that the proposal can be extended to other predicates particularly to adpositions.

It is well know that in some languages verbs are grammaticized to function as (directional) adpositions. This can be accounted for quite naturally within our proposal once the Transparency Condition is elaborated along the lines in (24):

(24) Only the Path argument of a verb will be transparent to syntax when the verb is used as an adposition.

In other words, the category Adposition is *blind* to any other argument in the LCS except the Path argument. The minimal requirement would then be that verbs which lack Path in their LCS cannot function as adpositions. A cursory examination of the relevant literature provides evidence consistent with this claim. According to Lord (1993:10) in a number of languages the most common verbs which can have prepositional meaning are as shown in (25):

(25) Verb Meaning go to, into, towards come to fall to pass through

Consider, for instance, the LCS of a verb meaning go represented in (26):

(26) [GO([Thing], [Path TO])]

When this verb is underparsed as an adposition, only the Path argument will be transparent to syntax. Thus the verb effectively acquires an adpositional LCS to be realized as *to* or its equivalent.

For a more complicated case, consider verbs such as *give* which can be employed as the adposition *to* or the benefactive *for* in several languages (Lord 1990). Suppose the LCS of *give* is as in (27), (adopted from Jackendoff 1990:194):

(27) *give*

V [CAUSE ([]
$$\alpha_A$$
 , [GOPOSS ([]A. [FROM [α]])])]

Path TO []A

The Path function has two arguments FROM and TO which are essential components in the meaning of the verb. This is to capture the fact that the object of the *giving* event - the Theme - originates from the *giver* (i.e., the causer) and not from elsewhere. This is shown by co-indexation of the arguments of CAUSE and FROM in (27). When the verb is underparsed as an adposition, only Path becomes visible to syntax. Notice, however, that there are two possibilities in Path: FROM and TO, which may give rise to adpositions with the Source meaning *from* or the Goal meaning *to*, abstracting away from the multiple roles of TO as Goal and Beneficiary.

I argue that the Source adposition cannot be derived, because FROM is not A-marked in the verb form as it is co-indexed with the CAUSE argument. That is, underparsing is relevant only with respect to A-marked arguments. This would predict that a verb meaning *give* can function as Goal adposition but never as Source adposition, an empirical claim worth investigating.

5. CONCLUSION. In this paper I attempted to show that functional verbs are systematically related to their respective lexical variants. Even uncommon instances of functional verbs such as *say* turn out to behave naturally once the correct LCS is motivated. Needless to say, the theory of grammar must be able to account for the role of functional verbs - whatever they may be called in different descriptions and theories, *light verbs*, *vector verbs*, *co-verbs*, etc. - because it is to be expected that some linguistic forms will have multiple functions since language must employ its finite means economically to represent infinite expressions.

NOTES

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- 1. Grammaticization as understood here is close to Grimshaw's (1995) idea of *un* (*der*) parsing of the LCS; Grimshaw argues that this is a generally available UG process which languages are free to make use of. In Grimshaw's view, the English *light* verb *do* has unparsed LCS, whereas the *heavy* verb *do* has parsed LCS. Although I cannot address the issue here, I think unparsing (as opposed to underparsing) is too strong even for the case of the English *do*. In section 2, I suggest one possible way which will constrain the process of underparsing.

2. Note that this notation is consistent with the rather minimal difference between say and the so-called *information transaction* verbs such as *tell* in that with the latter the Goal argument is obligatorily A-marked and must be realized syntactically.

- 3. The notion of Inner Manner may be similar to the notion of *natural actions* discussed in Jackendoff (1990:88) following Peterson (1985); Jackendoff points out that 'natural actions are difficult to describe in words' but are relatively easy to demonstrate. Thus, for instance, the distinction between *wiggle* and *dance* cannot be adequately captured by features in Conceptual Structure but rather must be encoded in some other modality. I would argue that the distinction between *wiggle* and *dance* is due to Inner Manner which must be learned as part of the idiosyncratic aspect of the verbs' meaning. It is also conceivable that Inner Manner may be analogous to Higginbotham's (1985) 'e(vent)' argument.
- 4. In fact, in some languages certain unergative verbs *cannot* occur without cognate objects (see Austin 1982, Hale and Keyser 1991). This means that unergative verbs are syntactically transitive, though they are single argument verbs in Conceptual Structure.
- 5. Why the highest event-type is privileged in the sense postulated here is of course something which must be motivated. I will not pursue this issue here, though, I

would like to point out that for independent reasons a similar asymmetry is present in a number of other studies as well. For instance, in the theory of Argument Transfer, developed in Grimshaw and Mester (1988) higher thematic roles can transfer without lower ones but not vice versa.

6. From this it follows that any functional verb denotes only a single event-type. When the lexical source denotes a single event then that will be retained as the event-type of the functional variant as we have seen in the case of alə 'say', though the specific semantic field is unparsed.

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