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# What is in a function

The purpose of this essay is to contribute to the realisation of an ambitious plan which purports to examine and explicate what the term "function" means in grammar. Many "functional grammars" have been published, and various functional terms have been in use in the analysis of grammatical structure, such as subject, adverbial, complement &c. I would like to find out and explicate what is the grammatical, semantic or pragmatic content of the terms "function" and "functional" in various authors and grammars. However, in Martinet (1960) there is a statement which puts the notion of syntactic function into a perspective that links it to a general approach to language, more specifically, syntactic function is seen as a linguistic realisation of the relationship between various aspects of human experience.

> "What, in language, corresponds to the relationships between the various elements of experience is what has traditionally been called "function" when we say, for instance, that this or that word functions as subject or an object. Function is, of course, a purely linguistic concept. In other words, function exists only in so far as it is expressed somehow in the utterance."

In the following pages I will attempt to make the first steps towards the explication or rejection of this correspondence.

I will examine two different theories of phrase structure: Allerton (1982) and X-bar Theory. Though these recognize the same structures as analysable constructions, the details of the analyses are strikingly different at some points. As Webelhuth (1995) points out X-bar Theory is one of the offspring of an approach to analysis of syntactic structures which ultimately has its roots in Harris' immediate constituent (IC) theory, which states that there are composite expressions—phrases—that have the same distribution as the minimal syntactic units, that is, words. For instance, there are noun phrases that have the same distribution as nouns and the integrity of a phrase in an utterance is confirmed by the existence of a minimal unit substitutable for it.[1] X-bar Syntax kept this basic insight mostly as a discovery procedure, and it has moved towards more abstract dimensions while—as suggested by Hays (1964) and Matthews (1981)—dependency theory holds the suggestion that grammatical relations should be studied with respect to how the minimal units (= words) of a particular utterance are directly related to one another, and observations of this type are expressed in terms of valency.

## 1 Allerton 1982

Allerton emphasizes that functional relations or dependencies are of crucial importance for analysing linguistic structures; constituency leaves some structural differences unaccounted for. Thus, in (1) and (2)

[1] As it emerges, Allerton's dependency grammar is closer to Harris' IC analysis and assumptions than X-bar Theory.

(1) Oliver met [$_{\text{NP}}$ an expert] (2) Oliver sounded [$_{\text{NP}}$ an expert]

the analysis of the respective noun phrases calls for explicating functional relations holding within the verb phrase.[2] While in (1) the NP is direct object, which may undergo passivization, the NP in (2) does not possess either of these properties, but, unlike the NP in (1), it can be replaced by an adjective phrase. Also, the bracketed NP in (2) is non-referential in contrast to the one in (1). Thus, in Allerton's analysis the two clauses above should be parsed along the following lines. The clause itself is made up of two expressions, the subject NP and the rest of the clause, which Allerton—contrary to our expectations—does not identify as predicate since this category has no role in his analysis. Next, he establishes the dependency relation between the subject and the rest of the clause. Another step in the parsing process is to identify the dependency relation between the verb and its complement NP, that is, *met* and *an expert*, respectively. And, finally, the NP, *an expert*, which also possesses some type of functional relation between its constituent elements, the indefinite article and the noun. Let us start with the NP first, and follow through Allerton's speculations. A criterion that partly determines the functional analysis of a phrase is the category membership of its constituents. A determiner is seen as belonging to a closed class, that is, a class grammatical in character, which implies that it may enter into relatively few paradigmatic contrasts while a noun, a lexical element, is an open class item. In this way, then, determiners nicely contrast with adjectives, which may combine with nouns, too. Similarly to nouns, adjectives are lexical elements, but, unlike some determiners, are optional modifiers. Another factor which points up the difference is that while an adjective + noun sequence can be freely substituted by the noun in a larger structure, this option is not available for all determiner + noun combinations. Consequently, an adjective + noun structure is considered an endocentric construction, and, therefore, represents a type of construction, which Allerton calls subordinative in his typology of constructions while an indefinite article + noun sequence illustrates a semi-subordinative construction since in this case the noun cannot substitute for the whole construction.[3] Thus, the NP in (3) is endocentric since the noun can substitute for the whole expression as in (4):

(3) I bought beautiful cups (4) I bought cups

therefore, the modifying adjective stands in the relation of subordination to the head noun. On the other hand, the determiners do not necessarily represent the same type of relation to a noun as the adjectives. It has been established (e.g., in Quirk et al. 1985) that syntactic subcategories of noun are relevant for the choice of a determiner: as is widely known, determiners are classified according to

[2] Ironically, Allerton's typology will not be able to distinguish between these two clauses in very much the same way as X-bar Syntax even though his introductory remark is correct.

[3] It is not quite clear in the text whether all D+N sequences are analysed as semi-subordinative on the grounds that in some D+N the N cannot replace the whole construction, or only those structures in which the presence of both constituents is obligatory, such as *a dog*. Cf. the discussion below.

which noun subclass they combine with: singular countable nouns, uncountables or plural countables. It is also well-known that a singular count noun obligatorily combines with a determiner. In cases like this, the noun cannot occur on its own in a larger structure, that is, the determiner is not subordinated to the noun as in cases when a plural or an uncountable noun is preceded by a determiner. Rather, we can witness what can be called mutual-subordination. Allerton considers such occurrences as exocentric constructions—constructions in which both elements are equally obligatory. A quick look at some examples will justify Allerton's typology.

(5) I stewed (the) (white) elephants (6) I milked *(a) (green) elephant

Further, Allerton suggests that a transitive verb + object sequence, such as *milk an elephant*, is very similar to the NP in (6) in that in both cases neither element is omissible. An important difference, however, involves the category of the members of the constructions: in $V_{tr}$+O structure both elements are lexical items while in the D+N sequence there is a grammatical and a lexical element, respectively. Allerton wishes to make both dependency and categorial differences transparent, therefore, he devises a terminology that is informative in both respects. Thus, while the $V_{tr}$+O structure is a semi-subordinative construction made up of a lexical core (the verb) and a lexical specifier (the object NP), in the NP under discussion we find a lexical core (the noun) and a grammatical specifier (the determiner). The analysis is shown in (7) and (8).

| | | | | | |
|---|---|---|---|---|---|
| (7) | an | elephant | (8) | chase | elephants |
| | \| | \| | | \| | \| |
| | gr.spec | lex.core | | lex.core | lex.spec |

Before we get entangled in the mazes of terms and aspects of analysis, a remark must be made. Though a V+O and *some* D+N structures have no head, that is, neither is endocentric, Allerton wishes to distinguish between these constructions, which he labels semi-subordinative, and exocentric ones. Since the lexical core element of both structures (*chase*$_{V}$, *elephants*$_{N}$) can be related to constructions in which they or other verbs and nouns, respectively, may occur as heads of real endocentric, therefore, subordinative structures, Allerton's decision to classify the V+O and *some* Det+N structures as semi-subordinative constructions ensures that the paradigmatic relation between members of the same lexical class (V and N) is not lost. Unlike in (7) and (8) where both items of the structure are equally obligatory for the well-formedness of the construction, in (9) and (10) the noun and the verb take the determiner and the NP, respectively, as optional constituents, therefore, both the noun and the verb can substitute for the whole expression.

(9) He stole lame elephants — He stole elephants

(10) He slept last night — He slept

As it may have emerged during the discussion of the above structures, subordinative constructions contain a head and an optional modifier. The head as well as the modifier can be both lexical and grammatical. In the discussion above we have seen, too, that an Adj+N sequence can illustrate the situation in which a lexical modifier precedes a lexical head as in (11); further, Adv+V sequences are also subordinative (12) while a grammatical modifier, for instance, a deletable determiner, may come before a lexical head realised as a noun (13):

(11) (weatherly) ships (12) (totally) defeat (13) (the) ships

A grammatical head, for instance, a preposition, can take an optional grammatical modifier as illustrated in (14)

(14) near (to)

The optional element in (14), *to*, itself a preposition, too, is an element that Allerton calls a pure marker — a constituent of a phrase which does not enter into paradigmatic contrast with any other item, in other words, it cannot be replaced by any other word. Consider the clause in (15)

(15) They went to the house

Here, the preposition *to* is not a pure marker since it can be replaced by a number of other prepositions, such as *into, in, over, by, past* &c. Typical pure markers with no possible paradigmatic contrast are: the infinitival *to, of* and all the prepositions, too, that are required by verbs obligatorily, for example, *on*, in the two-member lexical item *insist on*. Allerton insists that a pure marker, like the ones mentioned, has no semantic contribution whatsoever while modifiers entering into syntactic contrast with other items are expected to signal some additional meaning in the overall structure. Allerton refers to Tesnière's work, who claims that the role of some prepositions is simply to change an intransitive verb into a transitive one. In Tesnicre's terminology these are "translatifs", which "translate" one subclass of verb into another. For example, *ask* is a transitive verb whereas *inquire* is not. On this view, then, the preposition *after* enables the verb *inquire* to take an object. To sum up what has been said thus far, following Allerton, we have established two types of construction: the subordinative, which is made up of a head and a deletable modifier, and the semi-subordinative, which contains a core and a specifier element. In both constructions both constituents can be realised as either grammatical or lexical items. It also transpires that, broadly speaking, there are three types of elements making up grammatical constructions: (a) lexical items with many paradigmatic contrasts, (b) pure markers, which do not show contrast with any type of elements and, finally, (c) contrastive grammatical items, which—unlike lexical items—enter into a limited number of contrasts, and which comprise prepositions, determiners, conjunctions &c. As pointed out above, unlike endocentric constructions which have an optional modifier and a head that is capable of substituting for the whole construction, exocentric structures possess no such central item, therefore, neither can substitute for the whole structure, and, further, both constituents are obligatory. Exocentric constructions contain a base element, which may be either a grammatical or a lexical item, and a convertor, which can only be realised as either a grammatical or as a pure marker convertor. Consider the expression in (16)

(16) in January

which illustrates a grammatical convertor followed by a lexical base. The preposition *in* is a grammatical item and not a pure marker by virtue of the contrasts it can enter into, as shown in (17)

(17) before/after/throughout January

The technical term "convertor" is obviously the English equivalent of Tesnière's "translatif", referring to the fact that the noun *January* is — as it were — translated into a grammatical form in which it can appear in a syntactic position not characteristic of a noun. Put differently, the preposition enables the noun to occur as an adverbial. It is also clear that, though both the base and the convertor constituent could be replaced by other items capable of appearing in this combination, neither one nor the other can replace the whole expression, that is, both constituents are obligatory. A slightly different exocentric type is illustrated in (18), where a non-contrastive preposition, that is, a pure marker convertor, *of*, precedes a lexical base, *Japan*.

(18) (the coastline) of Japan

There are few cases exemplifying the grammatical base + pure marker convertor; (19) is one of them

(19) out of

where *out* is a grammatical item combining with the pure marker *of*, which — it seems—translates or, rather, converts an adverb into a preposition. There are two exocentric constructions which are different from the previous ones by virtue of the fact that they are not pronominalizable. Above we used the following syntactic tests to identify which construction type in Allerton's typology of constructions a two-word sequence represents

(a) optionality
(b) item substitutability
(c) construction substitutability

The reader will remember that optionality of one of the constituents determines whether or not the construction is endocentric, while item substitutability involves the recognition of paradigmatic contrasts that a constituent can be a member of. More precisely, the degree of substitutability, that is, involvement in paradigmatic contrasts, defines whether the item in question is a lexical, a grammatical element or a pure marker. In contrast to this, construction substitutability means the possibility to replace the whole construction by one of its elements — an aspect of analysis which can be seen as the converse of (a): optionality. The fourth syntactic test to be introduced is (d) pronominalisability, which involves the substitution of the whole construction, that is, both elements by one word, a pro-form. Allerton's term is "reduceability". Allerton's claim is that each of the subordinative, semi-subordinative and exocentric constructions is replaceable by some pronominal element; the ones that cannot be are members of the irreducible construction type, which are made up of two "cornerstones", of which both are lexical items, or one is lexical while the other is either a grammatical element or a pure marker. An irreducible construction containing two lexical cornerstones can be best illustrated by a subject–predicate structure. Allerton's examples are (20) which shows a simple English subject–verb clause containing two lexical cornerstones: a noun and a verb while in (21) a Russian example illustrates a verbless clause consisting of two nouns: one in subject and the other in predicative role.

(20) Mary smokes

(21) Predsedat'el' stud'ent
chairman.NOM student.NOM
'The chairman is a student'

The items in (22), (23) and (24) contain a lexical cornerstone and a pure marker:

(22) in the fog (23) by candlelight (24) by John

Though all the three prepositional structures could occur as adverbial in a clause, no pronominal adverb could replace them. For instance, the PP *in the fog* cannot be replaced by *there* or *then*, nor *by candlelight* by *that way* or *in that manner* &c. The last type of construction that Allerton recognizes is the coordinative constructions, the members of which are "coordinates". Here we have the same choice of constituent types as above: there are combinations of lexical and grammatical coordinates connected by some coordinator. In (25) we can see two grammatical coordinates joined by a grammatical coordinator while (26) shows an example of two lexical coordinates conjoined by a grammatical coordinator.

(25) if and when (26) [will come] but [may not stay]

Allerton explains that in cases "where the additive coordination counts as a plural noun phrase, e.g., *between John and Mary*, the coordinator *and* must be regarded as a (non-contrastive) marker" (p. 21). I will finish this section by enumerating the construction types that Allerton distinguishes.

**Subordinative**

1 lexical head + lexical modifier: *happy children*[4]
2 lexical head + grammatical modifier: *moj brat* 'my brother'
3 grammatical head + grammatical/pure marker modifier: *very many; all of*

[4] The examples in this section are either Allerton's (1982 : 19–21) or are made on his suggestions.

**Semi-subordinative**

4 lexical core + lexical specifier: *damage the key*
5 lexical core + grammatical specifier: *may come, a cake*

**Exocentric**

6 lexical base + grammatical convertor: *in* [*the box*]
7 lexical base + pure marker convertor: *for* [*ten years*]
8 grammatical base + pure marker convertor: [*in front*] *of*

**Irreducible**

9 lexical cornerstone + lexical cornerstone: *Oliver gave Fagin the watch.*
10 lexical cornerstone + grammatical/pure marker cornerstone: *by candlelight*

**Coordinative**

11 lexical coordinate (+grammatical/pure marker coordinator) + lexical coordinate: *raspberry and cherry flavoured; between John and Mary*
12 grammatical coordinate (+grammatical coordinator) + grammatical coordinate: *in or around*

## 2 X-bar Theory

There are many stipulations that characterize X-bar Theory; in this essay, however, I will concentrate on basic statements that are relevant to the discussion of syntactic functions. More specifically, the main emphasis in the following pages will fall on the constituent structure of phrases as proposed in some writings on X-bar Syntax (Radford 1988; Webelhuth 1995). It is asserted by authors working within the framework of X-bar Syntax that a phrase, an XP, whether it be functional or lexical, possesses the same types of constituent. More precisely, any XP obligatorily contains a constituent which is its "head". The head, represented as X, may be either a lexical item or a functional element. In X-bar theoretical essays it is assumed that there are four main lexical categories capable of heading a lexical XP: noun, verb, adjective and preposition, corresponding to the four lexical categories; while some grammatical elements, such as verb inflection, agreement markers, modals and complementisers, can appear in the role of what is referred to as "functional head". Though an XP can be exclusively built up of a head, other constituents may also be present optionally, which are: specifier, complement and adjunct. Below we will have more to say about the optionality of some constituents. Besides the Endocentricity Constraint, which stipulates that each phrase should have a head regardless of its category membership, the Modifier Maximality Constraint regulates the category of non-heads: each non-head category is an XP, that is, a full phrase. Perhaps, it is worth remarking that X-bar Theory follows the traditional approach in keeping category and function separate with the important difference that the syntactic functions enumerated above (viz. adjunct, complement, specifier) are realised as various phrasal categories, that is, XPs; as was pointed out only the head can appear as a word, or as a grammatical item. It will be remembered that—in contrast to this approach—in traditional grammatical analysis syntactic functions were linked to words rather than to phrases. The adjunct–complement distinction, which was already present in traditional grammar, though in a different form, is basically grounded on a semantic intuition which speculates that, in general, a word can take two types of modifier: one which essentially modifies its sense while the other type, leaving its sense alone, so to speak, gives only some characterisation, points out some additional circumstance that might be relevant from the point of view of the communication. The traditional notion of the adjunct–complement distinction is obviously based on a naive semantics: modifiers may influence the meaning of the head word in different ways; the explication of this difference, however, still needs elaboration requiring some working definition of "meaning". X-bar Syntax borrowed these undefined semantic terms and changed them into syntactically interpretable notions, that is, in X-bar Theory adjunct and complement are purely structural terms, and so are head and specifier. A complement, then, is what it is in virtue of its potential to stand in a certain syntactic relation to other XPs and the X in the same phrase. More specifically, a complement is closest to the head in terms of linear constituent order, that is, in English a prehead complement follows both the specifier and the adjunct(s) while posthead complements directly follow the head, and then come(s) the adjunct(s). It is also claimed, though controversially, that the head and the complement can be pronominalised together. For instance, it is widely asserted in the relevant literature that in a NP, such as *the student of Physics with long hair*, the head and the complement (*student, of Physics*) can be pronominalised: *the one with long hair,* should communicative need arise. The pro-form *one* may replace the head and the complement; some authors find this fact as evidence of identifying a constituent: N-bar. To sum up, the syntactic function of complement is defined in terms of its relation to a head and a possible adjunct. The specifier syntactically stands out as the only item in the XP which is not pronominalisable. As was pointed out, it has been suggested that the head and the complement together can be replaced by a proform, *one*, making up a constituent called N-bar, and in this way the two categories—complement and adjunct—can be contrasted; however, the "one-substitution" is available for head, complement and adjunct, as in *that one* (which could be the pronominalised form of the NP *that* [*book on perverts on the shelf*]); in this way, the head and complement make up one N-bar level, the adjunct another and both N-bar levels can be substituted by the pro-form *one*. Pronominalisation along these lines is possible in the other XPs as well; for instance, the PP *right there*, (*right* [*into the middle*]) illustrates the pronominalisation of a P-bar; the pro-form *there* is a constituent which replaces both the head and the complement in a prepositional phrase, PP. These data imply that the head, complement and the adjunct may make up one constituent against the specifier. Finally, the adjunct, as an XP constituent, is definable in terms of its relation to a head, on the one hand, and a complement, on the other. While a complement may be obligatory, depending on the lexical properties of the head, an adjunct is always optional. That is, if a lexical head selects a modifier obligatorily, it is always analysed as a complement. Further, an adjunct can be moved out of the phrase it belongs with. For instance, it is argued that the adjunct in the object NP of the clause *I met* [*a student of Physics with long hair*] *yesterday* can be moved, that is, extraposed, to the end of the clause: *I met* [*a student of Physics*] *yesterday* [*with long hair*]. As a summary of the above section, we can establish that in X-bar Theory syntactic function involves characteristics that a constituent has in terms of (1) syntactic position relative to the other actual or potential constituents (e.g., complements either directly precede or follow the head they modify, &c.); (2) pronominalisability, that is, the potential to substitute part of the phrase with some pro-form, and, finally, (3) transposability, which involves the possibility to change the position of a phrase relative to its fellow constituents (e.g., extraposition).

## 3 Allerton and X-bar Theory

**3.1** In this sub-section we will be looking at some constructions and see how the dependency and constituency analyses differ. Consider first the NP in (27)

(27) the tall Physics student

Both approaches recognize these words as belonging to the same construction, Allerton due to the principle I referred to as reduceability; in other words, the whole construction can be replaced by a pronoun (e.g., by *he* or *him*), though there is no technical term to name the construction as a whole; while X-bar Theory identifies these words as a noun phrase on two grounds: first, for the same reason as Allerton: it is pronominalisable, secondly, because these words may take part in syntactic processes together, for instance, in extraposition, that is, they are jointly transposable. Thirdly, it is a noun phrase in virtue of its lexical head, which is a noun. In Allerton's analysis, too, the central member of the construction is the noun, but the elements preceding it will be considered as having a relation to the noun separately. More specifically, in Allerton's analysis the following three structures are examined separately:

(28) the student (29) tall student (30) Physics student

Since in (29) and (30) the non-head words are optional, that is, deletable, therefore, the construction in (27) contains two subordinative relations (shown in (29) and (30)), but due to the fact that the singular countable noun cannot appear grammatically without some determiner, they are in semi-subordinative relation (*the student*), which implies that the central element functions as "head" from the point of view of the two modifiers and "core" from the point of view of the definite article. The analysis can be seen in (31)

(31) *the* = grammatical specifier; *tall* = lexical modifier; *Physics* = lexical modifier; *student* = lexical head/core[5]

[5] In both Allerton's and X-bar theoretical speculations diagrammatic representation of constructions and phrase structure, respectively, has a crucial role, which I will ignore throughout my discussion.

In X-bar Theory the construction is recognised as an NP, headed by a lexical category, which contains a premodifying adjective phrase (AP), and a premodifying noun phrase; though both constituents are words, they are analysed as XPs with respect to the Modifier Maximality Constraint, as was pointed out above. The AP is adjunct whereas the NP is complement due to their relative position to each other and to the head. The definite article is the specifier of the phrase because, unlike the rest of the phrase, it cannot be pronominalised as shown in (32)

(32) the one

The similarity in these analyses lies in the fact that they both recognise a hierarchy in the construction; in particular, in X-bar Theory this hierarchy is expressed by hypothesizing three layers: one for the head and the complement, another for the adjunct (and this "adjunct layer" can be multiplied, that is, the number of non-complementative modifiers is, theoretically, not limited), and a third which accommodates the specifier. Note that in X-bar Theory optionality of the two modifiers and the specifier is considered as a manifestation of an idiosyncratic lexical feature of the head, which gives rise to parametric variation across XPs while in Allerton optionality is a decisive factor with respect to the content of the syntactic functions he recognizes. It is optionality that distinguishes a specifier from a modifier: while a modifier is always deletable without loss of grammaticality, a determiner is not always so. To sum up, X-bar Theory does not recognize the difference between the article and the two modifiers in relation to the head in terms of optionality, while in Allerton the distinction between the two modifiers is ignored.[6]

The second example is shown is (33):

(33) John will come tomorrow but may not eat the leftover sandwiches

The construction in (33) contains two coordinate clauses conjoined by a coordinator, *but.* In Allerton's grammar, on the basis of these three elements, the construction is classified as a coordinative, illustrating type 11 in the above taxonomy, since it is made up of two lexical coordinates, the clauses, and a grammatical coordinator. The word *but* is a grammatical coordinator and not a pure marker because it may enter into contrast with the other two coordinators. (The reader will remember that a pure marker is not a contrastive element.) In X-bar Theory the analysis of coordinative structures is problematic since on the traditional view the conjoins of a coordinative structure are of the same grammatical type, that is, they have the same syntactic potentials, thus, a coordinative structure is seen as one sentence made up of two clauses and a coordinator. This forces X-bar Syntax to recognise the whole structure as consisting of three main constituents—an impossible situ-

[6] Though at the beginning of his book Allerton insists on the importance of functional analysis that would help us recognize the difference between *Oliver met an expert/Oliver sounded an expert,* the relevant sections of these clauses receive the same analysis: lexical core + lexical specifier, (V + NP). Similarly, X-bar Theory would suggest that the NPs are complements to their respective verbs.

ation with respect to the stipulation that a structure can only be made up of two immediate constituents. This last statement points up an important characteristic of both analyses: the effort to break up a syntactic structure into a binary constituent structure, which, however, encounters difficulties from the perspective of e.g., multi-complement verbs, such as *put, give* &c. Thus, the first clause, *John will come tomorrow* is analysed as an IP in X-bar Theory, headed by the modal auxiliary. Since the clause is also a layered, hierarchical structure satisfying X-bar theoretical stipulations, the functional head takes the VP, *come tomorrow*, as complement, which, in turn, has the lexical verb as head. The next item in the VP, *tomorrow,* illustrates the case when a phrase has only one constituent: the head; it stands in the relation of adjunct to the verb head. The noun phrase in subject position, *John*, is the specifier of the IP. In Allerton's analysis, the clause is an irreducible construction, in other words, a construction which cannot be substituted for by any linguistic expression. (It appears that Allerton ignores data in which a clause or a sentence can be referred back to with the help of the pronoun *it*; also, the relative pronoun *which* may have a clausal antecedent. In both cases a clause or a sentence is reduced to, or replaced by, a pronominal element.) Therefore, it is made up of two cornerstones, which are both lexical: *John*, the subject, and the predicate: *will come tomorrow*. On the one hand, the modal auxiliary and the main verb make up a semi-subordinative construction, the type which contains a lexical core, the verb, and a grammatical specifier, the auxiliary. It should be mentioned that while in Allerton's system all auxiliaries, that is, modals as well as primaries, are analysed as grammatical specifiers, in X-bar Syntax modals and auxiliary *do* are always heads of IPs whereas in some analyses aspectual *be* and *have* are specifiers in the VP, in others these auxiliaries head their own VPs. On the other hand, the verb *come* is in construction with the adverb *tomorrow*, which is in subordinative relation to the main verb. Thus, the verb is lexical core due to its relation to the grammatical specifier *will*, but functions as lexical head in its relation to *tomorrow*, the lexical modifier. The second clause is analysed along the same lines; the only difference is that the verb *eat* takes a complement, the NP *the leftover sandwiches* in X-bar Syntax, which same NP functions as lexical specifier to the lexical core *eat*. The analysis of *John will come tomorrow* is summarised below in (34) and (35):

(34) *John will come tomorrow* = lexical coordinate
*but* = grammatical coordinator
*may not eat the leftover sandwiches* = lexical coordinate

*John* = lexical cornerstone
*will come tomorrow* = lexical cornerstone

*will* = grammatical specifier
*come* = lexical core

*come* =lexical head
*tomorrow* = lexical subordinator

(35) $[_{\mathrm{IP}}[_{\mathrm{NP}}$ John$][_{\mathrm{I'}}[_{\mathrm{I}}$ will$][_{\mathrm{VP}}[_{\mathrm{V'}}[_{\mathrm{V'}}[_{\mathrm{V}}$ come$]]$ tomorrow$][_{\mathrm{Coord}}$ but$][_{\mathrm{IP}}$ may not eat the leftover sandwiches$]]$

**3.2** In this subsection, I will compare the approaches against the background of five questions.

1 What is the relationship between syntactic function and word form?

On the one hand, Allerton's (non-explicit) answer partly follows tradition: the syntactic functions he identifies can be linked to words, as well as groups of words and clauses. Note that the traditional parts of speech labels have no theoretical status in the text. On the other hand, Allerton broadly distinguishes three types of word, as pointed out above: (a) pure markers, (b) grammatical items and (c) lexical elements, and there seems to be few restrictions on these types of words to appear in any function. In other words, practically all the three types may occur as head, base, cornerstone, modifier. However, there seem to be some restrictions on the distribution of some items: there is no lexical convertor, grammatical and pure marker core, only lexical, and further, there is no pure marker specifier. The explication of the correspondance between words and functions is not particularly informative since the membership in the three classes Allerton recognizes is not stable: one and the same expression can appear once as a grammatical item once as a pure marker. It should be mentioned at this point that his syntactic functions are just as unorthodox as his word classes. In contrast to this, in X-bar Theory the answer is more straightforward: words can function both as heads of phrases and phrases, as well. In the NP *a three-legged Bactrian camel with two humps* the noun *camel* is the head of the NP while the preposition *with* is the head of the PP *with two humps*, and *humps* is the head of the NP, *two humps*, which is the complement of the P. However, in the clause *Humps are useful for camels* the subject is a noun, an N-bar, and a NP at the same time, $[_{\mathrm{NP}}[_{\mathrm{N'}}[_{\mathrm{N}}\ \textit{humps}]]]$, in virtue of the fact that it performs a clausal function. In X-bar Theory the same XP can appear once, say, as an adjunct once as a complement, that is, there is no one to one correspondence of phrasal categories to syntactic functions. Also, a word which in one structure occurs as head can function as some modifier in another.

2 What is the relationship, if there is one at all, between a group of words (i.e., a phrase) and a corresponding clause (such as *the furiously barking dog – The dog barks furiously*)?

In Allerton's system there are no clauses and there are no phrases either as units of analysis. In my understanding these expressions are not technical terms, they are used to facilitate the explication, they have no theoretical impact at all. In any case, the analysis of all linguistic units is the same: they are considered as groups of words which are, then, broken up into binary constructions. For instance, the clause in (36)

(36) Oliver saw Fagin

is, first of all, broken up into two constituents: *Oliver* and *saw Fagin.* These two expressions make up an irreducible construction featuring two lexical cornerstones. Next, the verb phrase, *saw Fagin* which, again, consists of two lexical items, exemplifies a core-specifier sequence, that is, a semi-subordinative construction, in which the verb functions as core and the noun, *Fagin*, as specifier. Thus, the relation between clauses and phrases can be captured through the process of analysis in that both are seen as a group of words which can be parsed in very much the same fashion. Similarly, in X-bar Theory there is no theoretical distinction between clauses and phrases; clauses only differ from phrases in that they have different heads: as already mentioned above, clauses have functional heads, such as verbal inflections or modals in IP; number and gender agreement in AGRP; subordinating conjunctions in CP; on the other hand, phrases have nouns, adjectives, prepositions or verbs as heads. Technically speaking, both clauses and phrases are phrases, that is, XPs, which may have the same constituents: head, specifier, complement and adjunct.

3 How do we identify the members of a phrase (i.e., how do we establish which words belong to a particular phrase)?

Allerton has no explicit statement about this; however, if we examine the difference between exocentric and irreducible constructions, it turns out that the most important difference is that an exocentric construction is pronominalisable while an irreducible one is not. In other words, pronominal substitution (or, reduceability) identifies a construction for us on syntactic grounds. This is one of the explicit approaches in X-bar Theory for recognising constituents, that is, function-bearing structures. Besides pronominalisation, transposability is also available as a test, which involves the process of moving a word or a group of words to another clausal position. The sequence of words or an individual word that can undergo such a transposition without changing the grammaticality of the structure is recognised as a constituent.

4 How many syntactic functions are there?

As shown above, the syntactic functions suggested by Allerton are head-modifier, core-specifier, base-convertor, and, finally, cornerstone. In X-bar Theory, on the other hand, the categories of head, specifier, complements and adjunct are recognised.

5 How does one identify a syntactic function?

Allerton identifies syntactic functions, that is, dependencies by four syntactic test: (a) optionality, (b) item substitutability, (c) construction substitutability and (d) pronominalisability or more in Allerton's spirit: reduceability. In X-bar Theory, we have (a) pronominalisability of part of the phrase (e.g., *one* to identify the specifier and the rest of the phrase) (b) transposability of a constituent of a phrase (e.g., to distinguish complements from adjuncts). There is, however, an important difference between Allerton and X-bar Theory: in Allerton optionality has a crucial role; an optional element bears a different relation to another element than an obligatory one. The reader will remember that this is the basis of the subordinative/semi-subordinative distinction. In X-bar Syntax optionality is a general feature but it has no functional content: it is considered as parametric variation which is determined by the lexical properties of the head. However, considering optionality as a parametric feature deprives the grammarian of the ability to motivate his choice of the head element in a particular phrase. More specifically, the identification of the head of, for instance, a PP happens by stipulation rather than by some syntactic method since both the head and the complement are obligatory in many PPs. Thus, if it was not by stipulation that the head of a PP is a P, we could not identify it since there is no syntactic way to do so.

**3.3** As a general summary, we can assert that the content of the syntactic functions that are recognised for analysis in both Allerton and X-bar Syntax are grammatical in the sense that the functions, such as adjunct, core, specifier &c. have the syntactic content which define these terms. In other words, an element can only bear the function, say, core, if it can be subjected to some but not to other syntactic processes, such as omission, pronominalisation, transposability &c. Put differently, the terms naming the various syntactic functions can be seen as abbreviations of more complex statements describing the discovery procedures that distinguish between elements of different distribution. The differences in potential to take part in the syntactic processes enumerated and explained above also determine what type of element the expression in question is with respect to the whole system which comprises the relevant syntactic processes. It is, however, not at all clear at this point whether the potential of an item to take part in some syntactic processes but not in others is the consequence of non-syntactic causes, and how this fact can be related to Martinet's proposal. A plausible suggestion would be to assume—following tradition—that the semantic characteristics of lexical and grammatical elements of a language determine their syntactic potential but there is no evidence of this, thus, at this point, I leave the issue open.

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