Mutual legitimization of verbs and argument projection from lexicon to syntax

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Projection of verbs and their arguments from the lexicon into the computational system has to be legitimized both semantically and syntactically. More exactly, we will argue that while verbs syntactically legitimize their arguments thanks to their head status by providing syntactic positions they subcategorize for, arguments semantically legitimize verbs because they refer to entities in the universe. Both arguments are base generated in complement positions of their respective verb copies. Moreover, no such extra positions as Spec positions are projected prior to feature checking (Chomsky, 1995) at this derivational level. The arguments of the verb will subsequently move to spec positions for the sake of feature checking. As a result, morphological variations such as (morphological) case (nominative vs. accusative) as well as functional relations (subject vs. objects) will reflect the syntactic positions in which the arguments will be in relation with other functional categories such as V and TNS or INFL.

1. Introduction

In the present study, we are going to develop the idea according to which any projection of a lexical head category from Lexicon into Syntax (the computational system) has to be semantically legitimized by an argument. More precisely, we will argue that the number of arguments encoded in an argument structure corresponds to the number of copies contained in the head category. For instance, transitive verbs will be seen as containing two V copies instead of one, although only one copy is expressed lexically. We will show that both copies are semantically legitimized prior to their projection. Once projected into Syntax, each copy provides or subcategorizes for one position only which, in turn, will respectively be occupied by the argument that has previously legitimized them. Among the claims we will make, the one that arguments evolve in a very symmetrical way during the whole process of derivation contrary to the actual asymmetrical way almost standard in theory. Such a hypothesis will have welcome consequences form the morphological and syntactic point of view, namely that heads occupy the right-edge position in a derived compound. Although our discussion will here be restricted to verbs, we believe that this claim is general. Accordingly, our discussion on arguments will focus on the ones encoded in their argument structure.
Before getting into the core of the analysis, we would like to make some clarifications regarding the terminology we will be using. The use of the word Lexicon is to be understood in a more extended meaning than its traditional or standard one, which reduces it to a list of words, encoded in our mental lexicon. More precisely, we mean by Lexicon the part of the mind / brain that is responsible for the decision whereby a lexical item is needed and therefore has to be projected into whatever is the process of sentence making. To make this difference, we spell Lexicon to refer to the latter meaning and lexicon to refer to the former.

Similarly, we use the word Syntax to refer to what Chomsky (1995) calls the computational system, that is, the stage where lexical items are being ordered and reordered so that the derivation (sentence) the speaker intends to form will correspond to the right one and in concordance both with their idea (thought) and the rules of the Grammar of the language in use. Within the same idea, we mean by ‘semantic legitimization’ the relation that raises between the origin of an event or state that is targeted and the verb chosen or selected to express it. Although we do see the use of the part called Numeration in Chomsky (1995), we will ignore it in the present study and therefore consider a direct path from Lexicon to Syntax.

2. Symmetry of internal and external arguments

Let us start our analysis by pointing out to what seems to us as problematic in the derivation stipulated both in GB and the Minimalist Program. On the one hand, some sort of asymmetry between the two arguments encoded in the argument structure of a verb emerges right at the derivation outset mainly because of the way the structure is derived. Derivation of a verbal sentence, for instance, is said to start with the projection of the head V (the lexical verb), which projects a complement position to host the internal argument and a specifier for the external argument. Although the level of structure at which the internal argument is selected is referred to as a V-bar, the relation between these two elements is still seen as direct. However, the nature of the relation the external argument has with the verb seems less direct since two nodes intervene between them (the maximal projection VP and the intermediate projection V-bar).

On the other hand, the terms ‘external’ and ‘internal’ used to distinguish between the two arguments are tokens, which do not denote any feature that can ensure this distinction. That is, no theoretical principle can prevent from selecting the external argument in the place of the internal and the other way round. Put otherwise, nothing in theory prevents us from having a sentence such as (1) with the meaning encoded in sentence (2)

1. The wall hit the car
2. The car hit the wall
The only criteria theory makes use of in order to distinguish between the two arguments are the ones based on case and theta theory. However, these criteria are of no help regarding sentences such as the ones given above for the following reasons: first, Case Filter only requires that any argument realized phonologically should bear Case and this is of no help to the problem raised. Moreover, as only positions account for the difference between accusative and nominative, both arguments can end up in «wrong» positions as in (1) with the sentence syntactically correct although pragmatically wrong. Secondly, the pair of sentences given in (1) and (2) also comes as a problem to theta theory as both arguments may be seen as themes. All what theta criterion says is that only one theta role is assigned to an argument. As to thematic hierarchy, it stipulates that the role «agent» is higher than theme and / or patient but again says nothing when the arguments under consideration are both themes.

One of our aims here is to show that, in the case of transitive verbs, both arguments evolve in a strict symmetrical way. Moreover, we will state that neither case theory nor thematic hierarchy are responsible for their ordering. Instead, subject / object distinction will be viewed as a consequence raising from the final landing sites of the two arguments respectively. Before that, all the difference lies in the two V copies of the verb. It will turn out that what is referred to as the Hierarchy principle is just a relation between these copies and their respective arguments based on pragmatics. This relation will be accounted for by the principle mentioned in the title referred to as «semantic legitimization». As a matter of consequence, this will make it possible to match the verb copies with their respective arguments in syntax and this matching will be referred to as «syntactic legitimization».

3. Semantic legitimization of verbs

The claim we would like to make here is that any argument has to be related to one verb copy only prior to its projection into Syntax. Similarly, any verb projected has to be related to one argument only. Such a claim may sound ambiguous for transitive verbs in that their argument structure is composed of two arguments although there is only one verb. Underlying our claim the idea that the categorial structure of transitive verbs is complex as compared to that of intransitives which is simple. A transitive verb describes an event composed of two sub-events while transitives denote simple events. A compound event may be considered from two different points of view: its starting point and the target. In a sentence such as the one given in (2) reproduced below

3. The car hit the wall

The starting point of the event is encoded in the car while the wall represents the target. These two sub-events may be paraphrased as follow:
4. The car hit / hit the wall

What (4) shows is that each of the arguments contained in the event corresponds to a sub-event. Underlying this observation the fact that these arguments are individually linked to a copy of V. More particularly, all structures of transitive verbs are composed of two V copies while those of intransitives are composed of only one copy. This idea stands in conformity with the now standard view expressed by Larson (1988), Hale and Keyser (1993) and Chomsky (1995) among many others. However, our claim regarding intransitives alike goes contra Chomsky’s statement on unergatives.

Arguments refer to entities within the universe be them concrete (real objects) or abstract (ideas or thoughts). For an event to take part, it has to have a starting point, an endpoint and possibly intermediate stages. As far as intransitive verbs are concerned, they are of two sorts. Events involving unergatives may be described from the starting point of view only like in

5. John phoned

Such events denote an undertaken event from its starting point but does not say anything about its target. The only «extra» information we are provided with is tense and/or aspect reading, namely that the event took place (Aktionsart). Unaccusatives denote either a process, a state or change of state. These may be described from the target point of view as in the following example:

6. John arrived

The sentence in (6) provides information about the target (along with tense / aspect) without precising the starting point of the process in question. The difference between unaccusatives and unergatives is well illustrated in theory by referring to their arguments respectively as internal and external when compared with those of transitive verbs. However, we have seen that as far as transitive verbs are concerned, the representation of the two arguments is asymmetrical in the sense that one argument starts as a complement while the other as a specifier. In the approach advocated here, not only subjects of unergatives and transitives are treated alike, but subjects of unaccusatives and objects of transitives are also treated the same way, that is, all arguments stand as their V complements respectively.

Remember from what we have said earlier that transitive verbs are a compound of two V copies. For convenience sake, we refer to the first copy as V1 and to the second as V2. Similarly, we will refer to their arguments as arg1 and arg 2 respectively. As we will see, the argument structure of transitives reflects those of intransitives in the sense that

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1Note that such compositions are stipulated in the literature, in particular Napoli (1989).
2 Chomsky (1995: 316) considers the structure transitives and unergatives alike, while he assumes that unaccusatives are composed of one V.
3Although tense might have the argument value from the Aktionsart point of view, we just ignore this possibility here.
arguments of unergatives correspond to arg1 while those of unaccusatives correspond to arg 2 of transitives.

Now that we have highlighted the parsing between arguments and their respective V categories, we can express the semantic legitimation between verbs and arguments under the following condition.

7. Projection of a V copy from Lexicon into Syntax is semantically legitimized if it has an argument that stands as the origin or target of the event or state it describes.

The generalization stated in (7) ensures that we can have one V corresponding either to arg1 or arg 2 or two V copies each corresponding to either arg.

4. Syntactic legitimation of arguments

In some languages such as Berber, there is indeed morphological evidence to the statement made above, advocating two V copies for transitive verbs. In fact, although the language has simple causative verbs, there is a class of verbs called derived causatives involving a causative morpheme s- as in the following:

8. a. ghli (V. Root meaning to fall)
   
b. S-ghli (Derived V meaning cause to fall)

Sentences involving such minimal pairs show that the introduction of the causative morpheme s- corresponds to the appearance of another argument of the agent type while the argument of the intransitive remains within the domain of the lower V. Such a situation is illustrated in the following:

9. y-ghli wezru
   3m.sg-fell stone
   a stone fell down

10. y-S-ghli Yidir a zru
    3m.sg-caus-fell Yidir a stone
    Yidir caused a stone to fall

Berber is known as a VSO language. The sentence in (9) is a simple intransitive one involving an intransitive verb ghli. The sentence in (10) may apply to the same situation as in (9) by introducing or focusing on the author of the event. As a matter of consequence, the argument which is the subject in (9) has become the object4 in (10),

4The morphological difference shown on the same item as subject and object is refered to state alternation and is discussed in Achab (2000).
while the newly introduced agent (Yidir) occupies the subject position. In terms of our analysis, the unique verb in (9) corresponds to the homophous part of the derived verb in (10) and its argument is also the same as the one in (10), that is azru (see note 3). The de-promotion of this argument into the object does not come as a surprise since it belongs to the «unaccusative» V copy. The latter subcategorizes for one position only in the most standard fashion, that is V____. The only argument that can be selected for this subcategorized position is the one that has semantically legitimized its projection. Consequently, the syntactic legitimization of arguments into the computational system may be generalized as follows.

11. (i). A semantically legitimized verb provides one and only one syntactic position in the computational system (one side sub-categorization).
   (ii). The syntactic position provided by any semantically legitimized verb is to be occupied by the argument which has contributed to its semantic legitimization only.

On the one hand, (11a) states that once in the computational system, a V copy provides one position only. On the other hand, (11b) ensures that the position which the V copy has sub-categorized for will be occupied by the argument which has contributed to its semantic legitimization as generalized in (7) above.

It is a well known fact that neither unaccusative verbs nor unergatives constitute homogenous semantic classes and neither of them resist all semantic diagnostics across languages (Rosen, 1984; Levin & Rappaport, 1995). Combined together, the generalizations formulated in (7) and (11) illustrate the relation between verbs and their arguments and show how unaccusative verbs are related to target type arguments and unergatives to origin-type ones while it guaranties at the same time their correspondence with transitive copies and their respective arguments.

What we have just said radically changes the way predication is defined and structured in theory. In fact, instead of merging a structure like VP-NP (object) with a subject NP (for transitives), we merge two similar structures V-NP with V-NP. The first belong to sub-event 1 and the second to sub-event 2. Thematic relations are then seen as a direct relation between Vs and their complements even before merging the two sub-structures. In the following sub-section, we will provide more arguments against thematic and case theories as they have so far been formulated in literature.

5. Against thematic role assignment

In theory, verbs are said to have the capacity to assign thematic roles to their arguments in accordance with their stipulated argument structure. Intransitive verbs are said to assign one thematic role while transitives might assign two different roles. While this might be sensible for intransitives as they subcategorize for one argument position only, and therefore stand in a direct relationship with their arguments, extending such a
relation to transitive verbs suffers difficulties. Let us consider what we see as problematic regarding transitive verbs and their thematic structure before getting back to intransitives.

The most standard thematic structure that was put forward for verbs in the literature matches with the supposed argument structure. That is, a verb assigns a thematic role to its internal argument for which it subcategorizes, and the new formed structure, say VP-NP assigns an external theta role. Note that the nature of the relation between V-NP cannot be the same as NP-VP in the structure [NP-VP- V-NP] in that in the former the relation is direct while in the latter it is mediated with a somehow abstract maximal projection. This discrepancy raises from the way predication is assumed. As only one V is postulated, there is no way escaping the generalization of the predicative structure to the theta role assignment system and the subcategorization frame (see above). Recently, some changes have been suggested notably by accepting empty Vs for a class of causative verbs. However, this did not affect case and theta role systems or predication. Moreover, the empty V was mostly used for the purpose of accommodating a configuration whereby nominative case is said to be assigned (Chomsky, 1995). Nothing more than what we have said above need to be said as far as thematic relations are concerned, that is direct relation between Vs and NPs whose structure is reproduced below:

12. a. [V1 - NP1]  b. [V2 - NP2]

This amounts to stipulating that both arguments are base generated in complement positions of their respective verb copies contrary to the standard assumption in the literature which stipulates one argument as internal and the as other external. The structure given in (12) highlights the relation between the two V copies with their respective arguments which seems more direct and symmetrical. They are also viewed as an expression of a direct relation that started at the Lexicon level (see above). So considered no such encoded roles within verbs assigned to arguments. As a matter of consequence, the a-symmetry between the two arguments the theory suffers from disappears in the present proposal.

6. Against Case system and Burzio’s generalization

Different configurations were suggested in the literature in the attempt to show how the different cases are assigned to arguments namely since the Case Filter was introduced in GB theory (Vergnaud 1987). Traditionally, accusative case is said to be inherent and assigned to the object under government by the verb. Nominative case, instead, is said to be configurational and assigned to subject under spec-head relation with INF or one of its compounds. Unaccusatives and passives are also said to be assigned nominative under the same configuration as transitive and unergatives with the difference that the argument in question originated as an object (internal argument). Both unaccusatives and passives are said to lack the ability to assign case inherently. This observation was then related to the absence of the external theta role or argument in the
canonical subject position, hence the movement of the internal argument to that position and this was formulated in what has come to be known as Burzio’s generalization (Burzio 1986). In the remaining of this section, we will argue against both abstract case assignment and Burzio’s generalization. To start with, let us consider passive constructions.

Impersonal passives are often cited as a strong argument against the stipulated inability of passives to assign case. In fact, in a language such as Norwegian, objects may remain in their base-generated positions and expletives are inserted into the subject position as illustrated in the example below (from Afarli, 1992: 25)

13.  Det vart slatt eit esel
    it became beaten a donkey
    «There was beaten a donkey    (e.g. (60) in Afarli 1992)

These constructions are very common in Norwegian, which makes them not be treated as exceptions. This passives and unaccusatives5, whose argument do not move show that the hypothesis of argument raising into the subject position is too strong to say the least.

Another argument comes from the fact that in VSO languages, the external argument stays within VP (spec of VP) while the verb moves to T. Such a configuration, where the external argument is said to be assigned nominative case essentially differs from that of SVO languages where the subject moves to spec of TP. In theory, this difference is attributed to a parameter between VSO and SVO languages. Again, this show that case assignment is rather an accommodation which we can get rid at a low cost. Our claim here is that there is no abstract case assignment taking part under government nor an under spec-head relationship. Most of the situations whereby arguments are forced to move can be handled thanks to the D or EPP feature. Instead, following our proposal, we will adopt the position according to which if the D feature may be satisfied by an argument or a nominal inflectional element, then the argument of the lower V stays in the complement position. In minimal terms, the category T attracts the closest argument for EPP feature checking should there not be any nominal property within its domain. For unergatives and passives in languages where expletives are not allowed, the movement to T is forced. As far as unaccusatives are concerned, I can see no reason why the argument should leave its complement position as the EPP feature is checked like usual thanks to the verb inflexion. So considered, case relations are simply the positions hosting the arguments in relation with verbs (or INFL) at the final stage of derivation.

7. Limits of the proposal: Merge

What remains as an unsolved problem yet with the analysis advocated here is how

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5Cf. sentences such as «there arrived three more people».
to accommodate the merge process of transitive V1 and V2 with their respective complements operate regarding transitives. Remember that Merge of each V with its complement takes place before merging the two V categories as shown above in (12) and reproduced below:

14. a. [V1 - NP1]  b. [V2 - NP2]

Merging these two sub-structures must not be seen as NP1 selecting V2 but as V1 selecting the whole sub-structure. Such a process equals the PP's selection by a transitive or intransitive verb. That is, the process of selection and merge is more of V’s concern than its complement. After Merging the above given sub-structures we get the following structure:

15. [V2i + V1- NP1 [ ti - NP2]]

Further movement may be supposed such the one of the NP1 from the complement position of VP to its specifier and then to other higher positions such as spec, TOP P^6. We do not pursue other possibly movements such as those of the arguments from complement positions to the specifiers of their respective Vs. Note that the movement of V to T enlarges the its proper domain and make it possible to the subject NP to move upwards.

At this level, our analysis is still confronted to an other problem namely the discrepancy between the order of the derived causative elements in the Berber example given in (10) and that of the structure resulting from the movement of V2 to V1 as given in (15) if we admit left-side adjunction. We concluded above that the agentive morpheme S corresponds to V1 (unergative pendent) while the lexical verb corresponds to V2 (unaccusative pendent). That is, the morphology of the verb and the structure simply do not match. It should be noted that this problem rises mainly because of the order in the projection of V1 and V2. We did not really motivate the order of their projection and the numbers were only used for the sake of clarity. The main criterion that distinguishes these 2 Vs is the opposition refereed to the starting point to the target of the event and this does not tell us anything about the order. However, consider for a while the nature of the two distinct elements of the derived causative verb given in (10) above. The base of the derivation corresponds to a full verb (namely the unaccusative pendent) while the causative morpheme is an affix. Once in the computational system, it is very likely for the affix to move as required by the affix principle than to the morphologically base verb. We have seen that the affix corresponds to V1 and the base verb to V2, all we need is invert the order so that the base verb (V2) should be higher to make it possible for the causative morpheme (V1) to move upwards and adjoin it. This guarantee the matching between the morphology of the causative and the resulting structure as given below.

16. [V1i + V2- NP2 [ ti - NP1]]

^6We have discussed this point in Achab (2000).
Subsequent to the movement of the complex causative V to T, NP2 and NP1 stand at an equidistant point from the position spec of V and, as a matter of consequence, only the latter will be attracted to that position by virtue of its Agr features (subject) it bears with the verb. The complete derived structure is illustrated below:

17. [TP V+T [VP subject -object]]

Note that without the movement of the NP subject, the order would be VOS. The NP subject has to move to spec of VP. This movement has to take place prior to the movement of the lower copy (the affix) to the higher one so that the two NPs become equidistant. The subject NP movement may be seen as required by the EPP principle of the same nature as the one requiring INFL P to be saturated. In such a case, VPs and TPs must be distinguished from oblique predicates.

8. Summary

The study provided here analyses the categorial structure of transitive verbs as composed of two V copies. Each copy is individually related to an argument. What is referred to as external and internal arguments of transitive verbs are here analyzed as belonging to different copies of the same lexical verb. By so doing, the difference of the thematic relations between a verb and its arguments are also seen as individual relations between those arguments and their respective copies. This relation starts at the Lexicon level due to the principle requiring any copy of V to be semantically legitimized. Once in the computational system, each copy of V subcategories for one position only and hosts the argument that has legitimized prior to its projection into Syntax. Intransitive verbs are viewed as being composed of one V copy only. Unaccusative and unergative verbs along with their respective arguments are analyzed as corresponding to the different copies of transitive verbs and their arguments alike. Case relations are also reformulated in terms of final positions. That is, no case assignment principle is required and both unergatives and unaccusative verbs are analyzed as subcategorizing for one complement position.

The final landing of the subject-NP in the spec of VP is required by the EPP principle requiring non-oblique predicates to be saturated by an argument on their left. The notion non-oblique was introduced to distinguish VPs from PPs for which such condition does not hold.

References

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