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OBJECT SHIFT AND MOVEMENT IN THE PHONOLOGICAL COMPONENT IN THE DBP FRAMEWORK

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ABSTRACT

In this paper we examine Chomsky's (1999) accounts of two typologically different types of movement, namely the operation known as *Thematization/Extraposition*, and the familiar *Object Shift* of Scandinavian languages. With respect to the former we consider the consequences of attributing this occurrence of movement to the phonological component. In particular we try to show that the formulation of the operations of the phonological component as proceeding *in parallel* to narrow syntax gives rise to some conceptual problems. The most important of these undesired consequences is that some overt computations of narrow syntax should then have no effect on the PF. The alternative we propose is to assume that the operations of the phonological component have only access to the completed strong phase, hence to the output of all overt computation at each (strong) phase.

With respect to Object Shift we note that Chomsky's (1999) account of the phenomenon is not entirely free from the accusation of discourse-linking. We interpreted the introduction of features INT and INT' used for "encoding" two types of interpretation in the formulation of the OS parameter and in the operations of narrow syntax, as an instance of global "look ahead". Our alternative is to leave the determination of interpretation entirely to an interface level of "information structure" which should determine itself how the orders allowed by the computational options should be interpreted.

1. Introduction

Consider the following two quotations from Chomsky (1998):

(1) "Other systems of the mind/brain have to be able to access expressions generated by states of FL (language faculty) ((I-) languages), to 'read' them and use them as 'instructions' for thought and action." (Chomsky 1998: 7)

(2) "Language is an optimal solution to legibility conditions." (Chomsky 1998: 9)

The significance of (1) and (2) lies in that they quite accurately characterise the part of the author's current interests. (1) expresses a postulate that there is a point where the language system meets with the systems of the mind external to language. Two such external systems appear particularly prominent in relation to language. These are the system of thought and the system of sensory perception. Their role is to interpret the products of language-internal derivations and this interpretation in turn is only possible if the "interface" representations provided by the language system are construed solely of the elements legible to these external systems. Thus, if we consider the system of thought, the elements present at the interface level must be semantically and logically interpretable, hence only such elements are legible for the system of thought. It is thus necessary to strip an ultimate linguistic (syntactic) representation of any formal elements which do not carry any semantic or logical value, and might only have a formal role to play within the language system itself. On the other hand, the elements must be phonetically and acoustically interpretable because only such elements are "legible" to the system of sensory perception based on hearing. An interesting alternative is, however, an interface representation which may be "legible" to the other senses, e.g. the sense of seeing. Such a situation would arise in the case of a deaf person using a sign language.

As for (2), the major aim of linguistic inquiry becomes the characterisation of these properties of the language faculty system which are "designed" to meet the needs of the external systems. Optimally and ideally, but perhaps unrealistically, it may be assumed that the whole of the language system should be designed in this way. But, the crucial task of a minimalist inquiry must be first to put every single principle, device, idea used in linguistic description under scrutiny to determine whether it is really needed, i.e. whether it is not derivable from "general conditions of computational efficiency" (cf. Chomsky 2001: 3). The minimalist enterprise is thus to find and characterise the simplest, most efficient way in which the language meets the requirements of the external systems, in particular, the two systems mentioned above.

This is a brief characterisation of the general premises and the objectives of the minimalist study. What follows is their specific instantiation in the description of the phenomenon of stylistic movement in English known as Thematization/Extraction, and the phenomenon of syntactic displacement known as Object Shift, characteristic of Scandinavian languages. Both these occurrences of movement are accounted for in the DBP (Derivation by Phase) framework of Chomsky (1999). With respect to the former it will be proposed that the characterisation of the rules of the phonological component as proceeding "in parallel" with narrow syntax may lead to serious conceptual problems. With respect to the latter, it will be argued that Chomsky's (1999) account of Object Shift is not entirely free from the fallacious "discourse-linking" which is in conflict with syntactic autonomy.

2. EPP in v*

Within the strongly derivational framework of Chomsky's (1999) *Derivation by Phase*, it is assumed that an EPP feature is present not only in its standard position, i.e. in T, where it enforces the appearance of a Subject, but also in two other positions: C, and v*. This assumption seems necessary for the characterisation of the properties of constructions involving overt wh-movement. Given that v*P is a strong phase, then if a wh-phrase did not first move to Spec.v*P , it would be impossible to move it further to Spec.CP without violating Phase Impenetrability Condition, given in (3):

(3) Phase Impenetrability Condition (PIC)
The domain of H is not accessible to operations at ZP, but only H and its edge.

The domain of H, and the edge of H are characterised as in (4) below:

(4) $[_{ZP}\ Z...\ [_{HP}\ \alpha\ [H\ YP]\ ]\ ]$

The elements of the edge of HP are the Specifier of HP, and the head H. The element of the domain of HP in (4) is YP.

The postulation of the presence of the feature EPP in v* is thus operative in overt wh-movement, and may be thought of as a kind of "escape hatch", similar to VP-adjunction postulated in the *Barriers* framework. It is less clear why it is also necessary to have an EPP feature in C, given there is a standard [+wh] feature in C which could make C a probe for a wh-phrase. We will leave this issue open and focus only on EPP in v*.[1]

Thus, as a result, of the first instance of internal merge (movement) of a wh-element, the following structure is built:

(5) $[v^*P\ what_i\ [v^*P\ you\ saw_j\ [VP\ t_j\ t_i]]]$

The Specifier position may be recursive, hence there are three elements of the edge of v*P in (5): *what*, *you*, and *saw*. The domain of v*P are the two traces t_j and t_i. There appears to be a very interesting consequence of the assumption of the Multiple Spell Out at a strong phase level, essential in Chomsky's (1999) framework. According to this assumption, with a completion of a strong phase, the lexical material which is not at the edge of the (strong) phasal category is immediately spelled out, hence unavailable for any further syntactic computations. This appears to render the

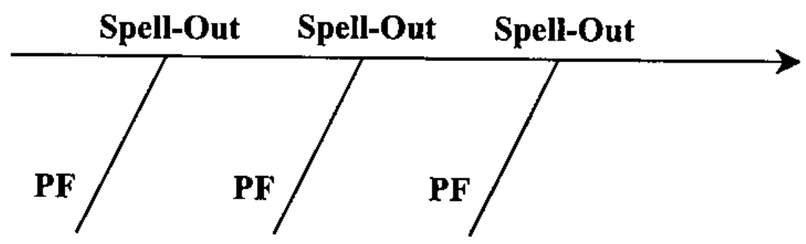
[1] The question of the presence of EPP in C and v* is related to the issue of the validity of CP and v*P as strong phases. We do not raise the issue here. See Epstein and Seely (2002) for a discusion of the stipulation of strong phases.

PIC redundant for strong phases; if an element is not at the edge of v*P or CP it is instantly spelled out, hence may not get involved in any syntactic operations, anyway, independent of the formulation of PIC.

3. Movement in the phonological component

In this section we will examine the operations of the phonological component, as discussed in Chomsky (1999). Let us first consider what may be understood by Spell-Out. The characterisation of the Spell-Out point as a point at which a syntactic object is sent for phonetic representation seems intuitively appealing. It may be tempting to interpret, then, 'spelled out' as prepared for pronunciation. It should be clear, however, that pronunciation itself is an aspect of speech production, thus part of performance, not competence. Therefore what may be meant here by prepared for pronunciation is only "arranged in such a way that the features of a phonetic (not phonemic) representation are included and arranged in a sequence". This sequence would be determined, first of all by the linear order, which in turn, would be established as a function of a hierarchical structure, according to Kayne's (1994) LCA, using the notion of asymmetric c-command.[2] Thus, the Spell-Out point is the single point at which all final properties of PF are determined, hence the graphic characterisation of the computational system as in (6) below:

(6)



Some interesting complication of the neat picture is the inclusion of the movement rules of the phonological component. The two alleged instances of such movements known from generative literature might be Stylistic Fronting in Icelandic (cf. Maling 1990, Poole 1995), and some instances of scrambling in Japanese (cf. Saito 1985, 1989, 1999, Kitahara 2002). Their most crucial characteristic is that they are "semantically vacuous", in that the results of their application are just stylistic variants, not involving any change in meaning, not even in the change of emphasis or focus. These are rules of the phonological component, which in terms of Chomsky (1999) means basically that they apply in parallel to the rules of narrow syntax, but without any effect for narrow syntactic computations or LF.

[2] Note however that Kayne's (1994) system is not fully compatible with Chomsky's (1999). Most importantly the former explicitly prohibits multiple specifiers, assumed in Chomsky's (1999) framework. Also, on more conceptual grounds, Chomsky assumes that LCA is a condition of PF only, and not of syntactic phrase markers. We leave these issues aside, assuming that there is a need for an appropriate adaptation of the original Kayne's theory to the DBP framework.

In English, as discussed by Chomsky (1999) there is an idiosyncratic rule called Thematization/Extraction (TH/EX) with properties similar to those of Japanese scrambling and Stylistic Fronting in Icelandic. This operation is responsible for the derivation of two (arguably) grammatical alternatives, given under (6) and (7) below:

(6) There were several packages placed on the bench.

(7) There were placed on the bench several packages.

(6) and (7) are assumed to be derived from the common base form:

(8) [$_{TP}$There were placed several packages on the bench]

(8) is ill-formed in English but it is OK in other languages (e.g. Italian, Dutch), and it represents a uniform (well-formed) LF form in all these languages. The ungrammaticality of (8) appears an idiosyncratic property of English.

Chomsky's (1999) provides the following account of the relevant facts: in English a Verb–Direct Object sequence is barred for unaccusative/passive constructions. This sequence may be avoided by a standard internal Merge (A-movement) of the Direct Object to Spec.TP resulting in a passive or unaccusative construction. Under this option the expletive there is not selected. But the availability of instances (6) and (7) calls for a different account. In these examples the expletive *there* is selected, and still the Direct Objects are moved to a pre-verbal position. Chomsky (1999) assumes that the TH/EX operation is a phonological rule which moves object to the edge of VP (weak phase only) prior to Spell-out, a movement rule of the phonological component. As for the mechanics of these dislocations, the options considered are: adjunction to VP for a rightward movement (as in (7)), and substitution movement to Spec. VP (to saturate some EPP feature) for left dislocation (as in (6)).

Why does it have to be a phonological rule, and not a computation of narrow syntax? Two arguments are provided. First, the result of Thematization/Extraction is semantically vacuous. The generalisation which is adopted in this respect is that "surface semantic effects are restricted to narrow syntax". By extension, this generalisation may restrict all operations without surface semantic effects to a phonological component. This restriction appears to be on a par with a model of grammar

with a PF-LF split; in which the operations of the phonological component have no access to LF, hence do not contribute in interpretation.[3]

The second argument for a phonological status of the TH/EX rule is empirical. Chomsky (1999) observes that the result of TH/EX is immune to the operation of wh-movement, as illustrated by examples (9) and (10) below:

(9) *[How many packages]$_i$ were there placed on the bench t_i
(10) *[How many packages]$_i$ were there t_i placed on the bench

Examples (9) and (10) illustrate the two options of the operation of the TH/EX rule. Within a lower (VP) cycle the wh-phrase might be moved to the edge of VP (right or left). From either of these positions it should be possible for the wh-phrase to be extracted by wh-movement to Spec.CP position, and examples (9) and (10) should be well-formed. This is not the case though, indicating that the wh-movement is blocked in such instances. Why? The answer is straightforward if prior to a possible wh-movement, at a lower VP weak phase, the wh-phrase is designated for a phonological movement at a lower VP weak phase. The role of such a movement is to establish the ultimate word order, which cannot be undone by any other syntactic operation.

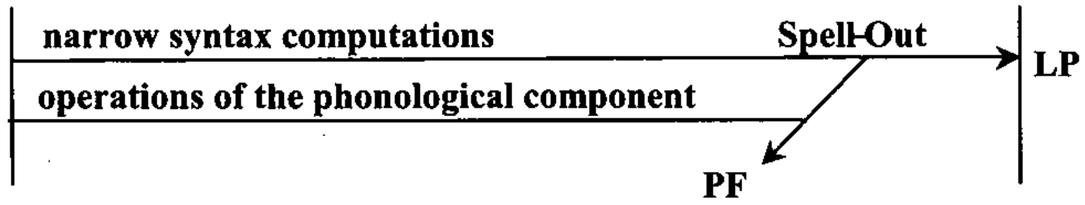
What does it actually mean that the rule of the phonological component applies in parallel to narrow syntax? Chomsky's interpretation is that the trace left by a phonological operation is available for all subsequent narrow syntactic operations, except movement. This follows from the assumption that movement requires Pied-Piping, and Pied-Piping requires phonological content, there may not thus be any movement of an empty category.[4] Since derivation proceeds by phases, the transfer to the phonological component recurs at each strong phase level.

The above interpretation of the role and status of the movement rules of the phonological component may have to result in the modification of the characterisation of the derivational framework in (6) above. The following modified graphic image of the relevant dependencies could be proposed:

[3] Cf. Tajsner (2003) for a discussion of the concept of LF emerging in Chomsky (1999).

[4] As rightly pointed out by the *PSiCL* anonymous reviewer, such a general formulation of the restriction appears problematic for PRO movement and empty operator movement. Thus, the restriction should be limited to non-pronominal empty categories; traces cannot be moved but other empty categories can. In view of such a limitation there emerges an open question of the general validity of the formulation of movement in terms of Pied-Piping.

(11)



(11) represents the following features of the derivational framework, not accounted for by (6) above: (i) narrow syntax computations and the operations of the phonological component proceed in parallel, (ii) they both lead to the Spell-Out point, (iii) they have no mutual access, i.e. the results of the phonological component are immune to narrow syntax computations, and vice versa, (iv) narrow syntax computations have effect on LF (they are semantically relevant), while operations of the phonological component have no effect on LF (are semantically vacuous) (v) they are both strong phase-bound (the vertical lines indicating the limits of a strong phase).

There seem to be some problems with the determination of the two derivational paths as proceeding in parallel, since parallel means not crossing, meeting or joining at any point. If phonological operations and narrow syntax computations are really parallel, then they cannot both lead to the same Spell-Out point. A possible interpretation may be that a phonological derivation leads to a phonetic Spell-Out, while narrow syntax computations lead to an LF Spell-Out, both at a strong phase level. But then a necessary consequence would be that no overt movement may be part of narrow syntax, hence this would have to result in the change of the PF representation. No narrow syntax computation could then have any effect on the phonetic Spell-Out.

If all strong phase-bound overt movement was to the edge of a strong phase, then the complication noted above might not arise, at least not until the very last strong phase was reached (the root node). A phrase moved to the edge of a strong phase would not be spelled out at this phase anyway. But what about strong phase-internal overt DP raising? Consider the case of Subject Raising to Spec.T position for EPP valuation. At the relevant stage in the derivation structure (12) would be derived:

(12) T [$_{v*P}$ Subject VP]

Since the subject in (12) is at the edge of v*P, here it has not yet been spelled out at the v*P phase and thus may be merged in Spec.T position. If T is filled with a modal verb, e.g. *may*, the resultant ordered string may be derived:

(13) John may come to the meeting.

Crucially, an ordering relation (via the LCA hierarchy) between *John* and the modal verb is established, which is a property of PF, as a result of a narrow syntax computation. But the relation of *John* to the modal could not in principle have any bearing on the phonetic representation, if only the phonological component, and not narrow syntax, could lead to the phonetic Spell-Out.

The situation may become even worse, if some rule of the phonological component would have applied to the v*P phase proceeding in parallel to a narrow syntax computation. For example, this could be a phonological rule adjoining the subject John to v*P and leaving a silent copy. This copy, according to Chomsky's (1999) formulation, would be accessible to operations of the narrow syntax, but not to the movement operations, as already noted. Thus, since the DP *John* has been transferred to the phonological component, the narrow syntax operation of Subject raising to Spec.T could not apply at the higher CP phase.

Consider now the potential wh-movement structure at a weak VP phase like (14) below:

(14) [$_{VP}$ placed how many packages]

(14) might be an input to both the rules of the phonological component and narrow syntax proceeding in parallel. The phonological operation moves the wh-phrase by adjunction to VP, as in (15) below:

(15) [$_{VP}$ how many packages$_i$ [$_{VP}$ placed t_i]]

As already noted, according to Chomsky's (1999: 19) formulation, the trace left by the phonological operation is a silent copy which enters possible further narrow syntax computations other than movement which requires Pied-piping of the phonological material. Thus a wh-movement which would apply at the strong v*P phase cannot apply to structure (15) because the wh-phrase is no longer available to narrow syntax, since it has already been transferred to the phonological component. But, all the same, it is assumed that the traces left by a phonological movement are accessible to further operations of narrow syntax. This assumption seems contradictory to the assumption that the results of the phonological operations are inaccessible to narrow syntax computations. Still the presence of the silent copy is a result of the phonological operation.

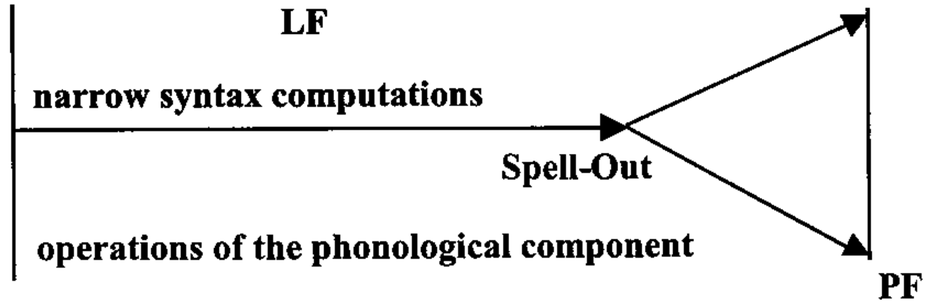
Such considerations might lead to a necessary revision of the layout in (11). It seems impossible to assume that the operations of the phonological component and narrow syntax computations could proceed in parallel without mutual access. The conceptual problems mentioned above could be overcome if the operations of the phonological component started not earlier than at the Spell-Out point, and did not

actually proceed in parallel to narrow syntax. In the cases considered above, the following results would be achieved. For subject raising; on the completion of the strong v*P phase, a part of the derived structure, namely *come to the meeting*, would be spelled out, hence transferred to the phonological component. The subject in the Spec. v* position would be immune to Spell-Out at this phase, and hence moved to Spec.T at the next CP phase. A next phonological cycle could start only with the completion of the next strong phase, i.e. CP. Thus, the result of overt subject raising would inevitably be represented at PF, as desired.

In the case (12) above, involving a wh-phrase, the DP phrase *how many packages* could not enter any phonological operation before the completion of the v*P phase. At the completion of this phase, however, the DP would already be at the edge of v*P (in the outer Spec. position), hence, again inaccessible to the rules of the phonological component, unlike a non wh-DP *several packages* of example (8), which could be, after Spell-Out, adjoined to VP by Thematization/Extraction, as discussed above.

In conclusion, a new layout showing the dependencies of the two derivational paths could be proposed as in (16):

(16)



The interpretation of the diagram is as follows: (i) both narrow syntax computation and operations of the phonological component are strong phase-bound, as indicated by the vertical lines, (ii) syntactic computations lead to a Spell-Out point, at which a part of the structure is sent to the phonological component. The rest of the structure is not spelled out, which means it is carried over without either a PF or LF interpretation to the next phase, (iii) narrow syntax computations, if they result in a Spell-Out, have a bearing on the PF, (iv) post-Spell-Out operations of the phonological component do not have effect on syntactic computation either in narrow syntax, or after Spell-Out, i.e. on the way to LF.

4. Merge over Move

It has been proposed in the previous section that the operation of the rules of the phonological component is to be postponed till after the completion of the computations of the narrow syntax at each strong phase level. Such a revision excludes the role of the phonological operation Thematization/Extraposition in blocking examples like (9) and (10) above. There must be some other reason why (9) and (10) cannot be derived.

In fact, it seems that the instrumental role of this phonological operation in wh-extractions in relevant cases described above becomes dubious given some consequences of the application of the principle known as 'Merge over Move'. Note first that the postulate of the preference of Merge over Move is preserved in Chomsky (1999), but is interpreted now as a function of the composition of LA (lexical array). In simple terms, if a lexical item is present in the LA, then in the case it competes with an element already present in the structure being derived, it has preference over this element. Let us examine now the two possible derivational paths which may be involved in the cases discussed above, disregarding the effect of the phonological operation TH/EX:

Option 1: *there* is part of LA (initial numeration):
Start with stage (17):

(17) were placed how many packages on the bench

Next *there* merges (obligatorily, as a result of Merge over Move principle) resulting in (18):

(18) there were placed how many packages on the bench

The appearance of there enforced by *Merge over Move* apparently cuts the wh-phrase off a possible Case checking position, namely Spec.T. Now, let us assume that wh-movement applies to the wh-Direct Object, resulting in (19), which is ill-formed:[5]

[5] The *PSiCL* reviewer raises two questions relating to examples (17)-(19). First, if the suggested interpretation is correct, then why is (18) out even without wh-movement or, e.g. with *two* in place of *how many*? It seems there is a problem with Case transmission to the associate (or LF movement of the associate to the expletive) over the participle (though it is only a weak phase, and hence cannot be attributed to the effect of PIC). The transmission appears to be blocked across a participle, though it is not blocked in structures without it, like *There were two packages on the bench*. Consistently, wh-movement (across *there*) in such a case is unproblematic, e.g.: *How many people were there at the party?* The well-formedness of such examples was the second issue raised by the reviewer. Case transmission blockage might then be the reason behind the ungrammaticality of (8), apparently an idiosyncratic property of English. We realise the issue is far from settled, though, and the status of Case theoretic explanation we invoke here is only tentative.

(19) *how many packages were there placed t on the bench

Option 2: *there* is not part of LA:
We start with (20):

(20) were placed how many packages on the bench

Next, the wh-Direct Object moves to Agree with T, and saturates the EPP feature in T. Then, wh-movement to Spec.CP follows, resulting in a well-formed (21):

(21) How many packages t were placed on the bench

The conclusion to be drawn from these observations is that the derivation illustrated under the first option is independently blocked, even if TH/EXT is not to apply in the phonological component in parallel to syntactic computations and prior to the completion of a strong phase. The relevant assumption in Chomsky's (1999) system seems to be that it is blocked by Merge over Move principle.

5. Object shift and Holmberg's Generalisation

The second, typologically different, type of displacement discussed in Chomsky (1999) is the familiar Object Shift operation characteristic of Scandinavian languages. The application of OS has been claimed to be governed by Holmberg's Generalisation, given below:

(22) Holmberg's Generalisation:
Object shift is possible only if the main verb rises out of VP.

Example (23) below illustrates the occurrence of OS in a structure with a negative marker, while (24) is an instance in which OS is blocked, due to the presence of the auxiliary in the position which could be available for subject rising out of VP:

(23) Peter købte **den** ikke.
Peter bought it not
'Peter did not buy it.'

(24) Hvorfor har Peter ikke købe **den**?
Why has Peter not bought it
'Why hasn't Peter bought it?'

As discussed by Chomsky, the form of Holmberg's Generalisation given in (17) cannot be reconciled with the PIC. In short, if the verb is moved out of VP (or, more precisely, the strong phase v*P), then the structure left behind is no longer accessible to further syntactic operations. As a result, an object cannot be shifted. Hence, Holmberg provides a new interpretation of the generalisation, given in (25) below:

(25) Holmberg's Generalisation (recent interpretation)

(i) OS is a phonological operation that satisfies condition (ii) and is driven by the semantic interpretation of the shifted object (new information, specificity/definiteness, focus, etc.; call the interpretive complex INT).

(ii) OS cannot apply across a phonologically visible category asymmetrically c-commanding the object position except adjuncts.

Interestingly, the new formulation of Holmberg's Generalisation does not seem to overcome the incompatibility with PIC if verb movement is part of narrow syntactic computations. If, however, as Chomsky (1999) implies (cf. Chomsky 1999: 30f), verb movement occurs in the phonological component, then, by definition, it does not conflict with the PIC, and the silent copy of the verb does not block OS, in fulfilment of (25ii).

In the preceding section we proposed a different status of the phonological operations, and this proposal should now be extended also to verb movement, hence we are forced to assume that the revised formulation of Holmberg's Generalisation does not in fact overcome the PIC problem But, Chomsky criticises (25) for some other reason. He notes that (25) implies a form of discourse-linking which is generally illegitimate in a purely formal account. Here is a pair of quotations which clearly express his position on the issue of the relation between discourse and narrow syntax:

> "A 'dumb' computational system shouldn't have access to considerations of this kind, typically involving discourse situations and the like. These are best understood as properties of the resulting configurations, as in the case of semantic properties associated with raising of the subject to SPEC-T, which well may be related to those of OS constructions [...].
>
> "We may also say informally that *he's running to the left to catch the ball*, but such functional/teleological accounts, while perhaps useful for motivation and formulation of problems, are not to be confused with accounts of the mechanisms of guiding and organising motion. The same approach seems sensible in the case of OS. The computational system presumably treats it as an option [...], feature-driven by properties of v*, with the option expressed as optional choice of an EPP-feature." (Chomsky 1999: 26).

Certainly, this is an issue of delimiting the interest to the question of the linguistic form and formal devices which the grammar uses, and exclude the question of the function which this form or a formal device may perform. This point may be further highlighted with one more citation:

> "We may say that the function of the eye is to see, but it remains to determine the implementation; a particular protein in the lens that refracts light, etc. Similarly certain semantic properties may involve dislocated structures, but we want to discover the mechanisms that force dislocation." (Chomsky 1998: 36).

As informally noted by Frampton and Gutmann (2002: 95), who consider the issue in a slightly different context, the situation discussed here appears equivalent to that illustrated by the behaviour of animals. The right answer to the question "Why do animals copulate?" should be "Because sex is fun", which is a nicer way of saying "Because they feel sexual desire which they cannot resist". Surely the answer is not "In order to propagate the species". Likewise the right answer to the question "Why do constituents move?" should be "Because there is a driving force for movement" or "Because there is some sort of 'movement desire' in syntax which they (i.e. constituents) cannot resist" and not "In order to be interpreted as specific, or topical".

6. Object Shift. Chomsky's (1999) account

In view of Chomsky's criticism of Holmberg's revised account of Object Shift his own proposals may seem unsatisfactory in a few points. In particular some elements of the account appear to retain "in disguise" some form of discourse-linking, which Chomsky openly criticises in Holmberg's account. Besides, elsewhere, the account appears at odds with some standard minimalist tenets. Consider first, the configurational properties in which OS may, or may not occur. These are summarised in (26):

(26a) OS (Scandinavian): object appears at the phonological border of v*P, and it is subsequently shifted:

Subject v* [$_{v*P}$ Object [$_{v*P}$ $t_{subject}$ t_{verb} [VP t_{verb} t_{object}]]]

(26b) No OS (Scandinavian or English): object v*P-internal:

Subject [$_{v*P}$ $t_{subject}$ v* [VP t_{verb} object]]

(26c) No OS (Romance): object is at the phonological border of v*P:

Subject v* [[$_{v*P}$ $t_{subject}$ t_{verb} [VP t_{verb} object]]]

Under (26a) the verb is moved out of v*P, and the subject is raised to check the EPP feature of Tense. As a result of these two movements, the object is at the phonological border of v*P. This is a configuration in which the object is shifted to the outer Spec of v* (object shift) Under (26b), the verb remains in v*P, hence the object, which stays in situ, is not at the phonological border of v*P. Under (26c), the verb is raised and the subject checks the EPP feature of Tense, so the object stays in situ and remains at the phonological border of v*P. The properties of the configuration themselves are not decisive in triggering OS, though. The rule applies as a parametrical option only in OS languages as a result of the following conditions:

(27)

(i) v* is assigned an EPP-feature only if that has an effect on outcome
(ii) The EPP position of v* is assigned INT
(iii) At the phonological border of v*P, XP is assigned INT'
where (iii) is the parameter that distinguishes [±OS] languages

Under (27i), v* may be assigned an EPP feature only if it is required to yield some new outcome. In English, the new outcome is required in the case of wh-movement, which will result in a new interpretation. Then, the EPP feature is assigned to v*. Under (27ii), an object which has been shifted to check the EPP feature of v* must be assigned a feature INT, distinct from INT'. The essence of the OS parameter is however (27iii). This condition ensures that, if not shifted, the object in OS languages must only be assigned INT', and not INT. Note that (27ii) does not exclude an option that INT may be assigned in some other position, including the position of the first merge of the object. Such a situation occurs in English where the non-shifted object may freely be assigned either INT or INT', since it does not occur at the phonological border of v*P (as in (26b)).

Here is a brief summary of some of the important assumptions made in this analysis:

(i) The EPP is assigned to v* only when necessary. It is necessary when it has an effect on the outcome. It is needed for OS in +OS languages, and for wh-movement in –OS languages. So, e.g., there is no object shift in English in construction (28) because there is no EPP feature in v*.

(28) *John the packages placed on the bench.

(ii) A non-shifted object in English may be interpreted as INT or INT' freely in its in situ position.

(iii) EPP is always present in T.

(iv) The EPP of T may be saturated (valued) by an object (wh-phrase).

(v) The feature [+wh] renders the object active after the valuation of the EPP in T.

Let us consider the elements of the present analysis which may be interpreted as an instance of recourse to discourse linking. First, the role of the features INT and INT' should be evaluated. Their sole purpose in the present analysis is to encode some effect on the outcome of a derivation. But what kind of effect might it be? Presumably, the only effect is in the interpretation of the relevant phrase as specific, definite, or 'thematic' in the sense of the theory of information structure (functional sentence perspective). The discourse linking in 'disguise' seems to be in the present case the encoding of the features relevant to the functional level (if there is one) in the assignment of INT and INT' in narrow syntax. If these elements are formal features, they should not be 'assigned' in the course of derivation, but rather they should be present in the initial numeration. But their status as formal features seems highly dubious. The features present in the initial numeration are, under standard minimalist assumptions, linked to particular lexical items. But INT and INT' are not linked to any lexical items (e.g. to a definite article, or a demonstrative which might select a noun phrase) but rather to specific positions (i.e. the phonological border of v*P, or the EPP position of v*).

Furthermore, the account of the mechanics of OS appears to have a flavour of circularity; the appearance of the EPP feature in v* is conditioned by some effect on the outcome. But the appearance of the EPP feature is a formal prerequisite for the object shift in the first place. Without the EPP feature in v*, the object has no motivation for the movement into a Spec.v* position. Without the movement, the object would stay in situ, and if placed at the phonological border of v*P, could only bear interpretation INT'. If it is a definite object, it will resist the interpretation INT', and the result would be a severe deviance of the structure. So, in short, without object shift there is no effect on the outcome, and if there is no effect on the outcome there may be no EPP feature in v*, hence no object shift. The only way out of the circle would be to evaluate the effect on the outcome "globally", by a specific instance of 'look ahead' into the level of information structure (discourse).[6]

[6] Some other question which may be raised is about the status of the qualification "at the phonological border of v*P" if verb movement is to be a rule of PF (cf. Chomsky 1999). If v raising to T is a phonological rule it should be "invisible" for evaluation at the higher phase, i.e. CP.

7. The alternative

I would like to conclude with a sketch of a proposal of an account of OS which appears conceptually simpler, and which avoids the two problems noted above, namely the case of fallacious discourse-linking, and the case of circularity in formulating the motivation for object shift. The first element of the proposal is an assumption that the EPP in v* is parametrically present in Scandinavian for all main verbs, (though not for participles), but it is parametrically absent in a corresponding position in English. The lack of EPP in English creates immediate problems for the account of wh-movement with reference to the PIC in terms of Chomsky (1999). If the wh-phrase is not at the edge of v*P, then it should be spelled out in its base position at the v*P strong phase, and therefore, it could not be raised to the matrix C position. But, as discussed by Epstein and Seely (2002), both the motivation for singling out v*P and CP as strong phases as well as postulating any categorial phases at all may be put in doubt. If we subscribe to these views we might recourse to the earlier standard wh-phrase-to-[+wh]C account of wh-movement.

The second element of the proposal is the assumption that there is no general requirement on the object in Scandinavian to move to Spec.v*P. If it is at the phonological border of v*P (i.e. if there is a main verb v*, not a participle) and it does not move, it receives the interpretation INT' (at the external level of functional (information) structure, which has to exist independent of LF). If it is at the phonological border of v*P and it moves to Spec.v*P it receives interpretation INT. This is the formulation of the options of the computational system working at the service of an external system. The external system (information structure) selects from the computational options the one which best meets its needs on a particular occasion. Note that the external system is not a filter in a sense of grammaticality filters (Projection Principle, Theta Criterion).[7] The issue of grammaticality does not arise here, only the question of natural interpretation.[8]

The proposal of the minimalist account of Object Shift facts similarly appealing to the options of a computational system is Groat and O'Neil's (1996). In their account of Icelandic cases of Object Shift, the operation may either be a result of an optional difference in the strength of the nominal feature N in AgrO, or an optional base-derivation of the object in Spec.AgrO, (Spec.v*) or within VP (cf. Groat and O'Neil 1996: 133ff.). In more concrete terms, the two well-formed versions of an Icelandic transitive construction without an auxiliary are (29a) and (29b), which

[7] Cf. Frampton and Gutman (2002) for a discussion of the role of filters like Projection Principle, Case Filter, or Theta Criterion in grammar and their relation to external (interface) filters.

[8] However, the one case in which leaving the object in situ rather than moving it by Object Shift to Spec.v* might result in ungrammaticality is the case of pronouns, with an inherent [+definite] feature. In our account such DPs have to be shifted to check their unvalued [+definite] feature. See also Tajsner (1998) for a similar analysis of object scrambling in Polish.

Groat and O'Neil quote after Holmberg (1986):

(29a) Jón keypti ekki [$_{VP}$ t_V **bókina**].
John bought not book.the
'John did not buy the book.'

(29b) Jón keypti [$_{AgrOP}$ **bókina** ekki [$_{VP}$ t_V]].
John bought book.the not
'John did not buy the book.'

English translations of the two instances seem to indicate that the two sentences are synonymous, but there is a difference in a functional dimension; the two objects are both marked definite, but the one in (29b) is additionally interpreted as topical or specific. The core of Groat and O'Neil's account is the assumption that the objects are moved in both (29a) and (29b), but they may be visible in different positions in the two cases. This follows from the principle that "strong features may be checked only in a checking relation with a node specified for phonological features" (Groat and O'Neil 1996: 124). It has to be assumed, therefore, that AgrO bears weak N-features in (29a), but strong N-features in (29b). This preliminary assumption is then revised by the authors who note that assuming two possible values for a parameter of feature strength is undesirable. Their revised proposal is that AgrO always has weak N-features, but the object in (29b) is simply base derived in Spec.AgrO position. Given another principle they adopt that "moving phonological features to the head of a chain is more costly than leaving them in the tail of the chain" (Groat and O'Neil 1996: 124) the object is thus pronounced in its base position. The immediate problem with theta-role assignment is avoided if the object is in the Internal Domain of the V-chain, under Chomsky's (1993) definition (cf. Chomsky 1993: 11-17).[9]

Under any of the alternative accounts presented above, the placement or phonological realisation of the object in a 'shifted' position is an obligatory consequence of the choice of one of the computational options/derivational paths. Either the feature strength value differs between (29a) and (29b), or if the verb does not merge with the object in the first instance of merge, then the object must later be merged in an OS position, without movement.[10] In either case the object has to or cannot be

[9] Note, however, that Groat and O'Neil's (1996) proposals may not compatible with DBP framework in a few points. The postulate of base generation of "shifted" objects in Spec.AgrO position (re-interpreted as Spec.v*) would still be compatible with PIC, but, as pointed out to me by Jacek Witkoś (personal communication) it is not clear how this internal domain of the V-chain is translated into AGR-less minimalism. Is the object still in the internal domain of the V-chain?

[10] Still another problem noted by the reviewer is that the delay in the insertion of the object into the structure postulated by Groat and O'Neil (1996) is incompatible with the opinion expressed in MI and DBP that operation Merge should apply to satisfy the φ features of the predicate as soon as possible. Also, this would be problematic for the idea of the compositionality of theta role assignment (first object θ role, then subject θ role, the latter compositionally by the predicate and the internal argument).

placed in a 'shifted' position. Our understanding of the computational options is different. We follow here the sense ascribed to it by Poole (1996), where a movement rule may or may not apply to the same part of the structure and given the same composition of LA. The difference between the application of the rule of OS so defined, and the rules of Stylistic Fronting in Icelandic and Japanese Scrambling discussed by Poole (1996), is that the former but not the latter two involves semantic effect, hence, presumably, must be part of narrow syntax leading to LF.[11]

The computational options ultimately meet the requirements of the external systems, they are, as if, 'at the service of' information (functional) structure. This is not to say, however, that they are motivated by the (properties of) information structure. They are either unmotivated syntactically, or motivated entirely by inherent formal properties of the elements of LA or by the derivation itself. These formal properties may simply push some objects to a new, shifted position, or enforce their appearance otherwise in such positions. An example of formal properties in question are lexical features of the DP pronominal object. In the instances when object shift is necessary because of the lexical properties of the DP object (when it is a definite pronoun), its [+definite, +specific] feature is unvalued and has to necessarily Agree in Spec.v*P, and saturate the EPP. However, in the instances in which there is no such lexical feature, the DP object may either move to v*P and saturate the EPP there, or stay in situ. It will then be interpreted accordingly at the relevant level of structure (functional level), as specific (definite, topical, etc) or not.

A problematic point might be the way in which the EPP feature in v* is saturated in the instances when the object is not shifted. For such cases we would like to postulate tentatively that the EPP feature of v* is saturated by the subject in Spec. v*P. The subject is still active after the saturation of the EPP feature in v* through unvalued Case and ϕ feature, and may move to Spec. of TP to saturate the EPP in T.[12]

We realise that our proposal would require an elaboration of the technical details which the present paper does not provide. Our main purpose has been however to point to an alternative which takes a rather fundamentally different view of move-

[11] We assume OS to be part of narrow syntax in the present context. But it is possible, and may be preferable, to re-interpret the operation as an instance of the rule of a phonological component. Such an account might be motivated by the fact that the semantic effect of OS is strictly limited to functional or pragmatic differences, but does not involve a change of logical relations or lexical meaning, hence may not in fact affect LF, under its standard formulation (cf. Tajsner 2003 for a discussion on the scope of LF in DBP). On the other hand, given the LF-PF split at the Spell-Out, the input to functional interpretation should rather be PF, which is linearised, and not LF, which is not linearised. We find the issue of major importance but leave it open in the present context.

[12] Jacek Witkoś (personal communication) suggests that this tentative idea may be linked to the timing of the [+EPP] feature insertion into the derivation; when it is introduced on v* in the Numeration, the subject can satisfy it, when it is introduced post-cyclically, after the formation of v*P, as proposed in MI, the object is shifted.

ments like Scandinavian OS which may be interpreted as "functional" re-orderings feeding information structure.[13] Such operations should not be "encoded" anyhow in narrow syntax, since such encoding seems to require a global "look ahead". Rather the functional dimension is mapped on the syntactic structures provided by the computational options in the grammar.

8. Conclusions

Concluding, we would like to sum up the advantages of our proposal. First, no recourse to arguable INT and INT' features in narrow syntax has to be made. As a matter of fact, Chomsky (1999) does not explicitly talk of INT and INT' features, but rather of specific elements being assigned INT and INT', but a reasonable interpretation of such points seems to be that INT and INT' mean different interpretations which are somehow "encoded" in narrow syntax. Second, in our account, EPP has a firm lexical basis; it is lexically linked to main verbs (v*) in Scandinavian, but not in English. Third, narrow syntax computations are not formally linked to the properties of interpretation, which generally is a desirable result, given also Chomsky's (1999) own critique of Holmberg's recent proposals. Fourth, the proposed derivations representing the computational options involved in OS structures are specifically "crash-proof"; unless the object has a feature which triggers its movement, it may move or not, and either derivation is successful in leading to a possible interpretation.

Finally, in out terms it is possible to account for the range of instances of object shift and scrambling as computational options satisfying various requirements of the external system (information structure) in agreement with the postulate of the grammar's optimal design.

[13] In Tajsner (1998) an analysis of scrambling phenomena in Polish and German is suggested along similar lines.

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