On Object Shift, Scrambling, and the PIC

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1. A Class of Movements

The displacements characterized in (1-2) have received a great deal of attention. (Boldface in the gloss here is simply to highlight the alternation.)

(1)   *Scrambling* (exx. from Bergsland 1997: 154)
        a.   ...ayxaasigan nagaan slukax   igaaxtakum   (Aleut)
                his.boat   out.of **seagull.ABS** flew
                '... a seagull flew out of his boat'
        b.   ... quganax   hlagan kugan   husaqaa
                rock.ABS his.son on.top.of fell
                '... a rock fell on top of his son'[1]

(2)   *Object Shift* (OS)
        a.   Hann sendi sem betur   fer bréfið   niður.   (Icelandic)
                he   sent as   better goes **the.letter** down[2]
        b.   Hann sendi bréfið   sem betur fer niður.
                he   sent **the.letter** as   better goes down
                (Both:) 'He fortunately sent the letter down'

[1] According to Bergsland (pp. 151-153), a subject preceding an adjunct tends to be interpreted as definite (making (1b) unusual), and one following an adjunct tends to be indefinite; this is broadly consistent with the effects of scrambling cross-linguistically. Here I have used examples with sentence-initial adjunct material (omitted), to eliminate the possibility that the subject in (1b) is topicalized.

[2] The phrasal adverbial here, *sem betur fer*, approximately meaning 'fortunately,' has the distribution of a sentential adverb. The use of the particle *niður* 'down' shows that the adverb is not right-adjoined in (2b), on the assumption that particles do not move rightward.

These alternations have several properties which distinguish them from the canonical cases of A- and A'-movement; relevant for this paper are the properties listed in (3).

(3)   Distinctive characteristics of OS and Scrambling
       a.   **They are interpretation-driven**: They are conditioned by interpretive factors, rather than morphological ones
       b.   **They are optional**: They can be characterized as 'optional' in the sense that both the (a) and (b) examples are well-formed
       c.   **They are very limited**: They do not cross an overt c-commanding head

Each of these properties can be contested. For example, with respect to (3a), overt morphology does sometimes covary with scrambling (e.g. in Turkish; cf. Enç 1991). (3b) is perhaps less disputable once it is granted that such movements may be understood to be 'obligatory' once (3a) is taken into account. (3c) is more controversial: the restriction is encoded in Holmberg's Generalization (Holmberg 1986, 1999), but certainly languages show interpretation-driven movements that do not obey (3c). However, the general correlation between Scrambling and OV seems to support it, and I will assume that all movements which do not obey (3c) are motivated, like *wh*-movement in English, by language-specific 'strong' features, or are analyzable in other ways (cf. Chomsky's (1977) analysis of Topicalization in English as base-generated).

      The following alternation can be argued to have the characteristics listed in (3) (cf. Svenonius 1999):

(4)   *Subject placement in Germanic*:
       a.   Gestern   haben die meisten Leute doch getanzt.   (German)
            yesterday have **the most   people** indeed danced
       b.   Gestern   haben doch   die meisten Leute getanzt.
            yesterday have   indeed **the most   people** danced
            (Both:) 'Yesterday, most people did indeed dance'

In Svenonius (2000), I have argued that (5) also shows a movement with the characteristics in (3), though because of its interaction with adverbs, it is generally string-vacuous:

(5)   *Negative movement in Norwegian*:
       a.   Russerne   valgte $[_{vP} t_s t_v$ ingen]   (Norwegian)
            the.Russians chose   **nobody**
       b.   Russerne   valgte ingen $[_{vP} t_s t_v$ t_o]
            the.Russians chose **nobody**
            'The Russians elected nobody' (Ambiguous; see below)

The normal interpretation of such a string is with sentential negation: 'The Russians didn't choose (or elect) anybody' (consistent with there being no election whatsoever). I argue that on this interpretation, such sentences have the structure in (5b) (cf. Kayne 1998). Here, as with (1-2) and (4), failure to perform the movement results in a marked interpretation (requiring an election in which

a plurality of Russians have checked 'none of the above' on their ballots); thus, I argue, structures with the form in (5a) can only be interpreted with narrow-scope negation, much as examples like (1a) require a non-specific object, in many languages, and (2a) and (4a) have similar conditions. This is easier to see in (6).

(6) a.   Russerne   har   valgt   ingen.   (Norwegian)
            the.Russians have   chosen **nobody**
            'The Russians haven't chosen anybody'
      b. * Russerne   har ingen   valgt.
            the.Russians have **nobody** chosen

(6a) has only the narrow scope reading, and (6b) is blocked, by (3c), though grammatical in other languages, including Swedish, Danish, and Icelandic (cf. Svenonius 2000).

Yet another case that may involve this same type of movement is seen in the VP in VO languages: the tendency of DP objects (in particular, the affected object) to occur very far to the left, typically adjacent to the verb. This fact requires an explanation, particularly for ECM constructions (cf. Postal 1974), but even in monoclausal cases, granted the arguments for structure within the VP (in e.g. Larson 1988, Johnson 1991, Travis 1991).

Adopting the conceptual arguments for Multiple Spell-Out (Chomsky 1998, 1999, Platzack 1998, Uriagereka 1999), I try in this paper to extend Chomsky's (1999) account of OS to accommodate the properties in (3) for this class of movements more generally. In the phase-based model of Chomsky (1998, 1999), various restrictions on movement are derived from the fact that chunks of the derivation go to Spell-Out quite frequently, inhibiting movement out of them. The intuition pursued in this paper is that in OV structures, and in structures in which the verb moves overtly, Spell-Out is delayed slightly, making additional movements possible.

In the specific implementation, I argue for a connection between the morphophonological realization of heads in an extended projection and the Spell-Out of parts of that projection; this leads to a recasting of the Phase Impenetrability Condition (PIC) (Chomsky 1998). What emerges is far from being a full-fledged theory of Scrambling, but seems to hold some promise. I show that it handles OS without Holmberg's (1999) assumptions about government of focus or the language-specific mechanism DISL[ocation] (Chomsky 1999).

2. The Phasal Account of Object Shift

Consider again what the movements listed in §1 have in common, from the perspective of a phase-based model. First, in the cases I am concerned with they are DP movements,[3] and we may assume that they are triggered by certain features in a head position, a *Probe* (I will continue to refer to features which

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[3] The scrambling possibilities for other elements seem to be drastically limited, compared to DPs. This may have to do with the kinds of features that motivate movement, e.g. Case is associated with -features.

trigger overt movement as 'strong' features, covering Chomsky's 1998, 1999 EPP features and P-features). Second, they have a fairly consistent effect on interpretation (3a); DPs further to the left may be specific, presupposed, old information, strongly quantified, etc. (cf. Holmberg's 1999 -Foc, Chomsky's 1999 INT), while low DPs are in focus, weakly quantified, etc. (cf. Holmberg's +Foc, Chomsky's INT'). Third, the movements do not appear to be triggered by any *obligatory* feature of the Probe (3b); that is, in the absence of the informational factors associated with the movement, a DP may remain in the low position. This suggests that they may be cases of Indirectly Feature-driven Movement (IFM), in the sense of Chomsky (1998: 21). Finally, the movements at issue do not cross an overt c-commanding head (3c); even if there are movements across the head in OV languages, either remnant movements of the type discussed by Haegeman (2000) or the individual licensing movements discussed by Zwart (1997), they are obligatory and not associated with discourse-informational factors like the Scrambling movements discussed here (also, note that licensing movements affect categories that scrambling does not, since nonscrambling PPs, small clause predicates, selected adverbials and the like also appear preverbally in OV languages).

Holmberg (1999) accounts for (3a-c) in Scandinavian OS by assuming that non-focused DPs bear a feature –Focus, and that that feature must be governed by something that is +Focus. A –Focus object moves leftward to be close enough to the verb, which is +Focus, by assumption. Other c-commanding heads which block OS, such as P, are +Focus as well, while adverbs, which do not block OS, are not, according to Holmberg. The dependency of OS on verb movement follows from the assumption that the verb, but not its trace, is +Focus.

Chomsky (1999) provides an analysis of OS that treats the same properties. The idea is that there is a language-specific rule assigning a special interpretation (INT') to an element at the left edge of vP. Just in case the verb leaves vP, an object DP will generally be in this position. If the object DP is not compatible with the interpretation INT', then a strong feature may be inserted in v in order to draw the object up to the left, where another language-specific operation, DISL, can remove it from the left edge of vP.

The possibility of feature insertion of this type is forced by the assumptions of the phase-based model. A basic guiding principle is that strong phases are small, and as each one is built, the previous, embedded one goes to Spell-Out, making its complement opaque for extraction, as stated in the Phase Impenetrability Condition (PIC; cf. Chomsky 1998: 22, 1999: 10-11).

(7)   *Phase Impenetrability Condition*: In a strong phase HP, in the configuration $[_{ZP} Z ... [_{HP} \quad [H\ YP]]]$, ZP the next strong phase:
   a.   The domain of H (here, YP) is not accessible to operations at ZP, but only H and its edge
   b.   Interpretation/evaluation for PH_1 (HP, here) is at PH_2 (ZP)

The edge is defined as the specifiers and/or adjuncts of HP (the 'escape hatch'). (7a) states that YP is opaque to features in and above Z; the only way anything can be extracted into or beyond the checking domain of ZP is if it is first moved to the space between Z and H. (7a) follows from (7b), if HP is interpreted or

evaluated at Spell-Out, and if only the specifiers and head of HP are still available to the derivation from Spell-Out (and only until the next strong phase is sent there).

These assumptions require that movement occur in short hops, from strong phase to strong phase; a *wh*-expression in VP, for example, will not be able to escape from VP once *v*P goes to Spell-Out. This means that a *wh*-expression must first move to the space between C (the next higher strong phase head) and V (the part of *v*P that becomes inaccessible); if no strong feature causes this movement, then one can be inserted, for example in *v*. This prevents the VP from going to Spell-Out with an unvalued feature, so it is forced by (7b), if Spell-Out does not tolerate unvalued features in YP. The availability of freely insertable features may vary by language; thus, a language with A-scrambling may have freely insertable Case features, while A'-scrambling may involve a topic- or focus-type of feature;[4] furthermore, languages may vary according to which heads permit multiple specifiers (Richards 1997, Ura 2000).

Chomsky's account correctly captures the fact that only an element that is the leftmost phonologically overt element in the VP ever undergoes OS; however, like Holmberg's account, it does not capture the fact that only DPs undergo OS; it is unclear why a PP or a predicate could not be assigned INT'. The account also correctly captures the fact that OS is dependent on movement of the verb, and allows that that movement need not be head-movement, as argued by Holmberg (1999), on the basis of examples like (8) (Swedish); to appreciate the movements involved, consider the subordinate clause in (9), where the only movements are A-movement of the subject and V-to-*v*.

(8) $[_{CP}$ Kysst $[_{C'}$ har $[_{TP}$ jag t_T henne $[_{XP}$ inte $[_{AuxP}$ t_{Aux} $[_{vP}$ t_o t_s t_v $[_{VP}$ t_V $t_o]]]]]]$
        kissed   have   I   her   not
       'I haven't KISSED her'
(9) $[_{CP}$ $[_{C'}$ at $[_{TP}$ jag T $[_{XP}$ inte $[_{AuxP}$ har $[_{vP}$ t_s kysst $[_{VP}$ t_V henne $]]]]]]]]$
            that I   not   have   kissed   her
       '...that I haven't kissed her'

Holmberg assumes long head movement of the participle to C, in (8); I have also included a trace for the object in an outer Spec*v*P, following Chomsky.[5] Note that the strong feature inserted in *v* moves the object string-vacuously, leaving up to DISL the task of getting the object to the left edge of XP, to the left of the adverb (XP is a segment of AuxP, if the negative adverb is adjoined).

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[4] Similarly, *wh* in situ presumably involves a locally inserted Q operator allowing deletion of uninterpretable features on the *wh*-expression. The fact that English *wh* in situ requires a higher *wh* in SpecCP, I take to demonstrate that the Q operator in English has *wh* features which must enter into Agree with a C of the appropriate type, while the appropriate type of C also has the property that it attracts a *wh*-expression overtly.

[5] Note that Chomsky refers to the movement of the object to Spec*v*P as 'Object Shift'; in the Scandinavian literature on Object Shift, the term has always been used for the reordering of adverbial material and nominal dependents of the verb. I suggest that the movement of nominals to an outer Spec*v*P of the lexical verb be called Case Shift; Case shift plus DISL, on Chomsky's analysis, is the traditional Object Shift.

Thus, Chomsky's account captures the peculiar characteristics of OS, but at some cost; in order to extend the account to Scrambling generally, it is necessary to be more explicit about what forces the object to move across the adverbs.

The reason against postulating insertion of a strong feature in a higher head is that OS cannot be shown to have any of the hallmarks of A-movement, for example binding anaphors, and the typical A'-movement diagnostics fail as well, e.g. parasitic gaps (cf. Holmberg & Platzack 1995, Holmberg 1999). However, there are other movements which also show precisely the characteristics of OS, for example Negative Movement (NM) in Norwegian, as I argued in Svenonius (2000). NM was exemplified in (5-6) in §1. Recall from (6a) that only a narrow-scope reading is possible on a negative quantifier that has not moved from VP; when such a reading is implausible, as in (10a) below, the sentence is deviant (generally regarded as ungrammatical). However, the sentential negation reading is available if the participle is topicalized, as in (10b) (cf. Holmberg's example (8) above).

(10) a. # Jeg har kysst ingen.   (Norwegian)
           I   have kissed nobody
      b.   Kysst har jeg ingen.
             kissed have I   nobody
             'I haven't KISSED anybody'

This shows that NM is subject to the same peculiar condition HG (Holmberg's Generalization), but here it does not seem to be because an interpretation is assigned to the left edge of *v*P; rather, it seems that sentential negation requires a licenser outside the *v*P (as argued by Christensen (1991) on the basis of the Norwegian facts), but no feature can be inserted to move the negative DP unless the verb moves.

Assuming that OS belongs to the family of Scrambling movements, some strong feature is inserted into the head of XP (a phrase hosting an adverb, cf. (8)), to attract the object, just when the verbal heads are spelled out above XP. I argue below that this should be thought of as being allowed, and therefore forced; in other words, a case of Earliness (cf. Pesetsky 1989), rather than Procrastinate (Chomsky 1995). I suggest that it is allowed because Spell-Out is delayed by the movement of the verb; I argue that it is forced because it allows the overt syntactic structure to better correspond to the information structure relevant at LF.

3. Spell-Out and the Verb

Given that OS (like Scrambling, to which I turn below) never crosses an overt verb, it follows from the assumptions of the framework that OS generally moves a DP to a node along the extended projection of the V-*v* complex where it gets its Case (in fact, always, if we ignore inter-clausal Scrambling of the Japanese type). This means that a strong feature (possibly Case, for A-scrambling) is inserted somewhere along that projection line. Since OS places a DP to the left of sentential adverbials (cf. (2b) in §1) and discourse particles, the feature can

apparently be inserted relatively high in the TP-domain, perhaps even somewhere in the C domain, depending on how complex that domain is (cf. Rizzi 1997); but restricting attention to the core functional categories C, T, and *v*, OS can more grossly be characterized as movement to *v* or T.[6]

Consider the kernel of Chomsky's account, that OS occurs when a strong feature is inserted to avoid an incorrect interpretational effect (a nonfocused DP being assigned the interpretation INT'). Recall, however, that DISL does the heavy lifting, removing the object from the Case-checking position in Spec*v*P and placing it to the left of adverbs. Holmberg's example in (8) above showed that OS moves even further than the left edge of the main *v*P (i.e. the minimal *v*P containing the main verb), escaping even a higher VP (AuxP in (8)). Furthermore, the group of movements introduced in §1 insinuates that HG is a more general phenomenon.

Therefore, rather than assuming that OS is forced by an interpretive rule at the left edge of the lexical *v*P, assume that it happens in the broader context of the TP or CP: the clause, at LF, is split into a (partial) topic-comment structure;[7] sentential adverbs (of the type used as OS diagnostics) mark a boundary in this structure (in the case of multiple adverbs, there may be embedded structures). A DP viable for OS is one that is not part of the lower structure (e.g. the comment).[8] LF movement of DP is possible to remedy the situation, but if possible, overt movement is preferred (cf. Earliness). If this is the right characterization of the situation, then verb movement gives the object the possibility of moving, while a V in situ prevents it.

4. Forcing Early Spell-Out

In the phase model, the desired result can be had if a non-moving head prevents OS because a phrase (phrase, not phase) with a low head goes to Spell-Out too quickly for OS to occur. The idea is this: in the English derivation in (11), the VP, though not a strong phase, goes to Spell-Out (signaled here by boldface) at stage (11b), before OS can occur, because its head has reached its final landing site. The rest of the derivation goes to Spell-Out in (11d) (I explain below why *v*P and XP fail to go to Spell-Out at stage (11c)).

(11) a.   [$_{VP}$ **kissed her**]
       b.   [$_{vP}$ I kissed [$_{VP}$ *t*$_V$ **her**]]
       c.   [$_{XP}$ never [$_{vP}$ I kissed [$_{VP}$ *t*$_V$ **her**]]]
       d.   [$_{TP}$ **I T** [$_{XP}$ **never** [$_{vP}$ *t*$_s$ **kissed** [$_{VP}$ *t*$_V$ **her**]]]]

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[6] With the verb in C, OS may appear to move to TP, below the subject, but OS occurs in Icelandic control infinitivals, with V movement but possibly only to T.

[7] Following Platzack (1998), it might be better to call this level 'Discourse Form,' since Scrambling-type movements are typically more sensitive to discourse information than to quantification, the traditional realm of LF. Cf. also Meinunger (1995) for an implementation of this notion of LF, recasting Diesing (1992) in terms of information structure.

[8] As Holmberg (1999) notes, any semantic characterization of the element undergoing OS must be a negative one, since even expletives undergo OS (in ECM contexts).

The derivation does not crash, because LF movement of the pronoun is possible to create the preferred information configuration.

In the Norwegian derivation in (12), the VP cannot go to Spell-Out at (12b), because the head has not reached its final resting place: C; Norwegian does not have independent V to T, thus I depict the verb as remaining in v in (12d) (I return to this below).

(12) a. $[_{VP}$ kysste henne]
      b. $[_{vP}$ jeg kysste $[_{VP}$ t_V henne]]
      c. $[_{XP}$ aldri $[_{vP}$ jeg kysste $[_{VP}$ t_V henne]]]
      d. $[_{TP}$ jeg T $[_{XP}$ aldri $[_{vP}$ t_s kysste $[_{VP}$ t_V henne]]]]
              I   never   kissed   her

Even at TP, then, the Norwegian main clause contains an unmoved verb, so no part of the derivation goes to Spell-Out.[9] I argue here that it is this delay that gives Norwegian the opportunity to insert a strong feature in X (the head of the phrase hosting the adverb) in (12).

The claim, then, is that Spell-Out happens even more quickly than demanded by the PIC: even before the TP structure is complete, a verb phrase goes to Spell-Out if (i) it no longer contains any unvalued features and (ii) its head has reached its final landing site. These two conditions can be collapsed into one if head movement involves unvalued features in the 'movee' head: finite V in a language like Norwegian has unvalued features which can only be assigned value by C, whereas finite main V in a language like English does not. Various implementations are possible, and questions arise as to how forced movement of this type should be reconciled with the strong features that force XP movement. I return to some of these issues below.

Granted that a movee head always bears unvalued features, it can be assumed that any phrase XP, whether strong phase or not, goes to Spell-Out immediately if it no longer contains any unvalued features.[10] For now, take this as an addition to the PIC as stated in (7); however, it will be seen that it significantly reduces the burden on (7).

(13)   If XP (a maximal projection) contains no unvalued features, evaluate XP immediately
       a.   If XP can be mapped onto a well-formed PF and LF, do so
       b.   If XP cannot be given a well-formed PF and LF, send it back

[9] Except perhaps the noun phrases, once their Case has been checked; such an assumption requires that the positioning of DPs can take place after they have been sent to Spell-Out, much as must happen–for example, for strong phase vP–in the case of CP fronting. on Chomsky's assumptions.

[10] Cf. Chomsky 1999: 4: if uninterpretable features are distinguished from interpretable ones in that only uninterpretable ones are unvalued upon insertion, then after Agree, when values are assigned, the two are indistinguishable; this may motivate access of Spell-Out as early as possible. Alternatively, early Spell-Out may be motivated by a principle of "Minimize Information," as suggested to me by Juan Uriagereka: the derivation has to keep track of whatever is in the working space, and sending it to Spell-Out reduces the computational burden.

(13b) gives the derivation another chance to make something better, a sort of granting of an extension. In this section and the next I will consider extensions induced by LF ill-formedness; in §7 I will also examine some possible cases of PF ill-formedness leading to temporary rejection of a derivation; possibly, even the cases I examine here could be thought of as involving PF more directly, following the line of Reinhart (1995), Neeleman & Reinhart (1998), or Ishihara (this volume).

In either event, (13) will not prevent obligatory movements like *wh*-movement in English, if they involve unvalued, uninterpretable features on the goal (the movee), inducing IFM (the insertion of strong features; cf. Chomsky 1998: 21ff and footnote 2 above). However, it will inhibit 'optional' movements, such as those which make the syntax more isomorphic to LF, like OS, and any movements that depend only on properties of the Probe, rather than of the Goal. I examine various consequences in the next subsections, but first, I return to the simple derivations above.

First, recall that in the English example (11) above ((11b-d) are repeated here as (14a-c)), I assumed that VP went to Spell-Out early, but *v*P and XP did not. VP maps onto a well-formed LF expression, by assumption: an open one-place predicate. It has only argument structure and no discourse structure, but LF does not require of a predicate that it have discourse structure.[11]

(14) a. $[_{vP}$ I kissed $[_{VP} t_V$ **her**]]
      b. $[_{XP}$ never $[_{vP}$ I kissed $[_{VP} t_V$ **her**]]]
      c. $[_{TP}$ **I T** $[_{XP}$ **never** $[_{vP} t_s$ **kissed** $[_{VP} t_V$ **her**]]]]$

Given (13) it can be assumed that the unvalued Nominative features on the subject in (14) prevent *v*P and XP from going to Spell-Out before T is Merged. However, since VP has already done so, it is too late for OS. Here the question is what LF expects of a TP: the prediction is that there might be some information-based reordering in English in the space between T and the lexical verb; but only contingent on English having appropriate strong features to force such movement, and on (13b) above sending a TP back to the syntax for readjustment. I argue in Svenonius (1999) that subject-adverb order (cf. (4) in §1 above) reflects discourse-structure-driven organization within TP. Another potential case would be the 'short V movement' effects discussed for English by Johnson (1991) and Pesetsky (1995).

Note also that Semitic, which has V-to-T (Shlonsky 1997), also seems to have OS (cf. Shlonsky 1997, Ch. 10). On the assumptions of Platzack (1998), the TP domain is not where discourse form is evaluated, so no such reordering would be expected. This would predict that V-to-T never induces OS, apparently right for Romance, and requiring a different analysis for Semitic pronoun placement.[12] I provide some evidence in §7 below that V-to-T is sufficient to license Scrambling, in at least some OV languages.

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[11] On Platzack's (1998) assumptions, this is even clearer, but there PF is not accessed as early as it is here.

[12] Icelandic has OS in controlled infinitives (as noted above), where the verb moves at least to T, but it is difficult to exclude the possibility that the verb moves to C there.

Turning to the Norwegian derivation begun in (12) above ((12d) there is (15a) here), recall that the TP had not spelled out, because of uninterpretable features on the verb. Next, C is Merged.

(15) a. $[_{TP}$ jeg T $[_{XP}$ aldri $[_{vP}\, t_s$ kysste $[_{VP}\, t_V$ henne]]]]
      b. $[_{CP}$ jeg kysste $\;[_{TP}\;\;\; t_s\, t_T\; [_{XP}$ aldri $[_{vP}\, t_s \;\;\;\; t_v \;\;\;\; [_{VP}\, t_V$ henne]]]]]
               I   kissed   never   her

When C is Merged, strong features on C force the verb to move there; this specifies the values of the features in V. Other strong features attract the subject to SpecCP; at last, the features in VP all have values; but so, too, do the features for the entire clause. Thus the entire clause is sent to Spell-Out together, by (13). But Spell-Out is the interface not only with PF but with LF; thus, LF evaluates the clause as a whole and finds that it does not ideally match the information structure desired. By (13b), the clause is then 'sent back' to the working space, where a strong feature is inserted to move the object up, the 'IFM' option.

(16) a. $[_{CP}$ jeg kysste $[_{TP}\, t_s\, t_T \;\;\;\;\;\;\;\;\;\; [_{XP}$ aldri $[_{vP}\, t_s\, t_v\, [_{VP}\, t_V$ henne]]]]]
      b.   **$[_{CP}$ jeg kysste $[_{TP}\, t_s\, t_T\, [_{XP}$ henne $[_{XP}$ aldri $[_{vP}\, t_s\, t_v\, [_{VP}\, t_V \;\;\; t_s \;\;\;]]]]]$**
               I   kissed   her   never

At this point Spell-Out may proceed, yielding the OS order. Note that LF movement must be allowed to 'fix' the English order, at LF, if the problem is discovered too late; but that overt movement is preferred, if it is done in the time afforded by the delay in Spell-Out.

Another point to note is that the Norwegian embedded clause order is basically the same as the English order: verb movement fails to occur (and OS is impossible). Thus V movement is forced by a property of C, not of V. This makes sense if the uninterpretable features on a transient verb are phonological features: one member of the extended word (in the sense of Brody 1997) V-*v*-T-C must have interpretable phonological features; the other members of the chain get values for their uninterpretable phonological features only in the presence of the pronounced member. Main clause C requires phonological content, in a V2 language like Norwegian; so if V has been spelled out too early, the derivation will crash. But otherwise, if the phonological features can be inserted earlier, they will be, by the principle in (13) (I assume that a feature of *v* prevents V from having interpretable phonological features in Norwegian, forcing V-to-*v*, since Norwegian shows the same ordering effects within *v*P as English does; nothing else hinges on this). Thus, head movement is, in a sense, PF movement, as Chomsky suggests.

Note that participle movement in (8) will also have the desired properties, most straightforwardly if long head movement also involves absence of phonological features on the lowest member of the long head chain.

5. Testing Predictions of Early Spell-Out

The principle stated in (13) above constitutes a significant alteration of the PIC. It is important to make sure that this alteration does not make unwanted

predictions. First, consider whether expressions might go to Spell-Out too quickly, preventing movements we know to occur.[13]

Such elements as PPs and adverbs are arguably self-contained, in the usual case. This account predicts that they will go to Spell-Out quickly, unless they are specially marked. The impossibility of OS or Scrambling out of PPs and adverbial phrases supports this. Such phrases as lexical VP may also go to Spell-Out more rapidly than hitherto assumed; consider, for example, an unaccusative VP, which does not go to Spell-Out until CP in a finite clause on the PIC, but which goes as soon as it is clear of offending features, on the assumption (13). This does not pose a problem, however, as an unaccusative argument will not be spelled out with the verb unless it has a Case value; since unaccusatives do not assign a value for Case, VP will not spell out until T is Merged, or the DP argument has moved.

A kind of movement which will be inhibited by early Spell-Out is movement which is motivated only by the needs of the Probe, i.e. where the Goal bears no unvalued features. Call such movement 'externally driven' movement. One example of externally driven movement might be movement to SpecCP in V2 languages like Norwegian. There, some element must appear in SpecCP, and if no other element is more suitable, the subject appears there by default (cf. (15b)). If TP were spelled out too early, then, the subject might not be able to move to SpecCP. However, recall that the PIC allows for an escape hatch (cf. (7a)): the specifier of an element sent to Spell-Out is still available. Thus exactly SpecTP should be available for movement to SpecCP, in case nothing has adjoined to TP (in §6 below I question this assumption and provide an alternative).

Another case is EPP movement to subject position, but the matter is made turbid by the involvement of Case.[14] Nonetheless, an argument can be constructed on the basis of EPP environments that the early Spell-Out model is correct. Consider the small clause structure in (17).

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[13] Chomsky (1999: 14) specifically discusses the case of Icelandic passive participles in this context; the facts have been extensively analyzed by Halldór Ármann Sigurðsson (e.g. 1989, 1991, inter alia), who provided the following examples (p.c.):

    (i)   Það virðast hafa verð veiddir   nokkrir fiskar.   (Icelandic)
               it   seem   have been caught.M.NOM.PL [some   fish(M)].NOM.PL
               'There seem to have been some fish caught.'
    (ii)   Við töldum hafa verð veidda   nokkra fiska.
               we   believe have been caught.M.ACC.PL [some   fish(M)].ACC.PL
               'We believe there to have been some fish caught.'

The point is that in (i), the form of the participle is nominative, but no finite T is available to provide the nominative value until the main clause T is Merged; similarly, the accusative value on the participle embedded under ECM in (ii) cannot be determined until the main clause v is Merged. On Chomsky's account, the delay occurs because the embedded clause is headed by T_{def}, which by assumption does not head a strong phase. On my account, the delay is simply because the Case values have not been determined.

[14] On Bittner & Hale's (1996) account, Nominative is not a Case; if that is correct, Nominatives might get spelled out too early, on this account. Note, however, that Bittner & Hale do postulate a special licensing condition for Nominative DPs, so it is likely that they can be treated like other DPs for the purposes at hand.

(17) a.   The neighbors saw [$_{SC}$ the house [$_{Pred}$ broken into *t*]].
      b. *   The neighbors saw [$_{SC}$ [$_{Pred}$ broken into the house]].

At first blush, it appears that (17a) features externally driven movement, EPP movement (in the classic sense of the EPP, the requirement that every clause have a subject; cf. Chomsky 1982). The DP should have Case from the preposition, and so there is no feature on the DP itself that could force movement; on the assumptions here, that would mean that Pred in (17b) should go to Spell-Out, before movement occurs (assuming it is a maximal projection, cf. Williams 1983, Svenonius 1994a).

However, note that such constructions are strikingly only possible with passive predicates, i.e. they are pseudopassives, where the preposition is reanalyzed with the verb (van Riemsdijk 1978). Norwegian, like Irish, has 'salient unaccusatives' (McCloskey 1996), i.e. verbs with an internal PP argument and no DP argument. In Norwegian, because of the EPP, an expletive subject is always inserted in constructions like (18a) (cf. Åfarli 1992: 138).

(18) a.   Det blåste fra   blåsebelgen.   (Norwegian)
            it   blew from the.bellows
            'Air came from the bellows'
      b. *   Blåsebelgen blåste fra.
            the.bellows blew   from

Now, (18b) could be ruled out by postulating uninterpretable Nominative features on T that are not valued by any nominative nominal;[15] the nominal moving there has non-nominative Case (though Case is only overt on pronominals in Norwegian). But following Pesetsky & Torrego (2000), nominative Case is actually interpretable on T, and the uninterpretable features forcing DP movement are strong -features, which are interpretable on the DP, regardless of where it gets its Case value. Now consider (19).

(19) a.   Smeden   hørte [$_{SC}$ det [$_{Pred}$ blåse fra   blåsebelgen]].   (Norwegian)
            the.smith heard   it   blow from the.bellows
            'The smith heard air come from the bellows'
      b. *   Smeden   hørte [$_{SC}$ blåsebelgen [$_{Pred}$ blåse fra]].
            the.smith heard   the.bellows   blow from
      c. *   Smeden   hørte [$_{SC}$ [$_{Pred}$ blåse fra   blåsebelgen]].
            the.smith heard   blow from the.bellows

Here it could be argued that (19b-c) are ruled out by the failure of the verb to 'check' Accusative Case. Various accounts have argued essentially this (cf. e.g. Martin 1999, Boecx 2000), but the fact remains that potentially transitive verbs quite commonly appear without direct objects, sometimes with PP complements, as seen with the same verb in (20).

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[15] Alternatively, uninterpretable features involved in Nominative Case assignment could be in C, as in Koopman (1984), Platzack (1986), or Pesetsky & Torrego (2000).

(20) a. Smeden hørte blåsebelgen.   (Norwegian)
          the.smith heard the.bellows
          'The smith heard the bellows'
     b. Smeden   hørte på blåsebelgen.
          the.smith heard at the.bellows
          'The smith listened to the bellows'

Therefore, a plausible analysis of (19) is that movement of a nominal is externally driven movement, in the sense that it is forced by the EPP, but is dependent on Case only because if the DP already has a Case value, then Spell-Out occurs too quickly for a small clause to be formed. This is what happened in (19c): the PP containing the DP has gone to Spell-Out too quickly for externally driven movement to affect it. This result is not derivable by the PIC, but is derivable on the quick Spell-Out account (13) developed here.[16] What makes a pseudopassive like (17) different is that unvalued Case features on the DP delay Spell-Out long enough that the small clause head, with strong EPP features, is inserted. Possibly, this is another case of IFM, if the only freely insertable Case features are bound up with -features; cf. Chomsky's (1999) proposal that only -complete heads can have strong ('EPP') features.

6. Preventing Unwanted Meddling in Syntax by LF Demands

I argued in §5 that the assumption that phrases go to Spell-Out when they are free of offending features was not obviously harmful, and in fact yielded some good results. But recall that in my analysis of OS I made another assumption, the assumption that strong features could be inserted into a clause if they allowed the part of the derivation then going to Spell-Out to map more directly onto an LF structure (or discourse structure). Here I will consider whether that assumption might have unwanted consequences, in conjunction with the assumption about early Spell-Out.

     If there is one uninterpretable feature in an expression XP in a larger projection YP, then 'optional' (i.e. OS-like) movements of other elements ZP out of YP might be permitted. However, in practice, this will not occur, because IFM features will be inserted to eliminate the offending features before IFM features are inserted to satisfy LF demands. Consider a concrete situation: an embedded non-interrogative CP, containing a *wh*-expression in a non-final stage of successive-cyclic movement, in the derivation of a sentence like *Who do you think he supports?* (omitting VP for the sake of simplicity).

(21)   [$_{CP}$ who C [$_{TP}$ **he T** [t_o [$_{vP}$ t_s **supports** t_o]]]]

At this point TP will have gone to Spell-Out, all features having been assigned values, but recall that specifiers of expressions that have gone to Spell-Out are assumed to be available for extraction. Since the *wh*-expression has offending

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[16] Holmberg 2000a also argues, on rather different assumptions, that (certain) small clauses must go quickly to Spell-Out, and that their specifiers are not available for extraction.

(uninterpretable) features, CP cannot go to Spell-Out, on my assumptions, so the danger is that the subject might be able to scramble across *who* into the higher *v*P, as shown in (22).[17]

(22)   [$_{vP}$ he [$_{vP}$ you think [$_{CP}$ who C [$_{TP}$ t_s T [$_{vP}$ t_s **supports** t_o]]]]]

Actual interclausal scrambling is attested, but not conditioned by long *wh*-movement. The step in (22) is correctly blocked if access to Spell-Out occurs every time an XP becomes free of unvalued features, as stated in (13). When the matrix verb is Merged, the only offending features in CP are the Q features on *who* (cf. Chomsky 1998, Pesetsky & Torrego 2000). If IFM features can be inserted at this point to extract that *wh*-expression, they are, and CP is sent to Spell-Out immediately, because the subject does not have unvalued features.

(23)   [$_{vP}$ who [$_{vP}$ you think [$_{CP}$ t_o C [$_{TP}$ he T [$_{vP}$ t_s **supports** t_o]]]]]

According to (13) and the assumptions here, only CP is evaluated for LF and PF at this stage. CP is well-formed, since the relative scope of the subject and the matrix verb does not arise at this point. Later, when the matrix *v*P is sent to Spell-Out, readjustments may have to be made, but at the point at which CP is free of offending features, no readjustments need be made and therefore none can be.

So far, no problems seem to arise, and in fact some go away. The problem discussed here is in fact a non-problem if the escape hatch of specifiers is closed in Spell-Out, contrary to (7a) above. The escape hatch, at this point, is only necessary for externally driven movement. I showed that in small clauses, externally driven movement (the EPP) was always redundantly driven by Case requirements; if there was no unvalued Case feature in the predicate, then the predicate was spelled out, and interpreted as something other than a small clause predicate, eventually leading to a crash.

The other case of externally driven movement examined here was that of the V2 subject-topic: when there is no more suitable element in TP for topichood (i.e. when nothing is marked with uninterpretable features), then the subject appears in SpecCP. This is not a problem if TP functions as an escape hatch, as I noted above (cf. the discussion in §5 of (15)). But even without the escape hatch, there are at least two solutions: one, C may be involved in nominative Case assignment, in languages like Norwegian (as noted above), in which case the subject might have unvalued Case features until such time as C is Merged, at which point the subject would be attracted by the strong features in C before TP could be evaluated. Alternatively, if nominative Case is not Matched by C, it might be the case that subject-initial main clauses are TP in V2 languages (cf. Travis 1984, Zwart 1991; but cf. also Vikner & Schwartz 1996 for arguments against this view).

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[17] Invoking a strong version of Shortest Move would block this, but Scrambling of an oblique across a direct object and subject is possible in roughly the same configuration, so whatever licenses that movement would license this one (cf. Richards 1998).

7. On the Connection between OV Order and a Delay in Spell-Out

My analysis of OS in §4 above is designed to account for (3c) in §1, the postulate that this class of movements never crosses an overt c-commanding head. The machinery may at this point seem rather heavy, however, to account for what appears to be a fairly isolated type of movement. However, I believe that the account above can be directly applied to Scrambling, a well-attested movement occurring in many of the world's languages, in particular very common among OV languages.

The account predicts straightforwardly that Scrambling should be possible when a language has V-to-C and also has the requisite strong features (i.e. features that can be exploited in the IFM manner, freely inserted when needed). This is because V-to-C will always delay Spell-Out until CP is constructed. Interestingly, the account also makes it slightly easier for a language that has V-to-C to have *wh* in situ. This is because interpretable Q features in C will be able to provide uninterpretable Q features on *wh* in situ with a value by Agree, since C and the *wh*-expression go to LF together. In a language without V-to-C, a portion of the clause containing a *wh*-expression will be sent to Spell-Out before C is Merged, forcing insertion of a strong feature, and hence movement, to attract the *wh*-expression, unless a null Q operator is available. OV languages frequently allow *wh* in situ (cf. Bach 1971). In §7.1 I go over some evidence that V moves at least relatively high, in many OV languages.

In some OV languages, however, V clearly does not move to C, as C is initial, and yet Scrambling occurs (even with overt complementizers; e.g. German). If discourse reorganization is possible at the TP level (cf. the end of §6), then this situation is compatible with the account here. Alternatively, in a split-CP model (Rizzi 1997), the overt complementizer might be in a relatively high position, and the structure sent to Spell-Out might be larger than TP after all. In either case, the account here makes a prediction which appears to be correct: interclausal Scrambling of the type attested in Japanese should not be possible across an overt complementizer to the left; this is because if a complementizer is Merged in C, then there can no longer be any unvalued features in the extended word of the verb, and Spell-Out cannot be delayed any longer.[18]

However, interclausal Scrambling does occur with overt complementizers to the right; I argue below that this is consistent with the claims laid out here. The argument hinges on the fact that there is another

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[18] Browning & Karimi (1994) show that scrambling is possible across an overt complementizer in Persian, as in [i] (from their p. 72).

> [i]   Ali een ketab ra fekrmikone ke Mehry be Hassan dad.   (Persian)
>   Ali this book SPC thinks   that Mehry to Hassan gives
>   'Ali thinks that Mehry is giving this book to Hassan'

On the account presented here, this must be because the specific (SPC) marker *ra* has features that must be checked by some IFM feature (Cf. Karimi 1999). The IFM feature can be inserted in C to draw that specific object out of the lower CP before it is sent to Spell-Out. Similarly, focus scrambling may be possible out of a C-initial CP, if focus in itself is enough to induce feature-insertion.

possibility allowed by (13), namely that PF-illformedness causes a delay in Spell-Out in OV languages, and that this delay is sufficient for some reorganization to take place. I show some independent evidence for this possibility in §7.2.

7.1. V-movement in OV Languages

There is substantial reason to believe that OV order is derived, in most cases, by leftward movement, as originally suggested by Kayne (1994). In many cases it can be shown that OV involves the leftward movement of remnants of clausal structure from which the verb has moved (cf. Haegeman 2000, whence (24), Hinterhölzl 1997).

(24)   da Valère a   nie no Gent en-goat   (West Flemish)
         that Valère already not to Ghent NEG-goes
         '...that Valère is already not going to Ghent'

Haegeman argues that the clitic negation *en-* corresponds semantically to the high sentential negation Neg1 of Zanuttini (1997), while the negative particle *nie* is a lower, adverbial negation, as indicated by its position relative to other adverbial elements. Assuming that heads precede their complements, the structure of (24) must be somewhat as in (25) (Haegeman assumes that the subject moves up independently, as indicated; the exact position of t_v is moot, as long as it is in XP).

(25)   da Valère [$_{XP}$ a   nie no Gent t_v] en-goat t_{XP} (West Flemish)
         that Valère   already not to Ghent   NEG-goes

This analysis reconciles antisymmetric phrase structure with the substantial evidence that certain OV languages have V-to-I movement. The connection between overt agreement morphology and verb movement is particularly well documented in the historical literature (cf. e.g. Roberts 1985, Falk 1993), but is also evident synchronically (cf. e.g. Pollock 1989, Rohrbacher 1994, Holmberg & Platzack 1995, Guasti & Rizzi 1999). Considering that many OV languages have overt agreement morphology, it is expected that the verb in those languages has risen to an extra-verb-phrasal head position.

On the assumptions in §3-6 above, this only ensures that Spell-Out will be delayed for the portion of the phrase structure that is the purview of the finite verb. However, nonfinite verbs follow their complements as well, in OV languages; West Flemish has a complex assortment of orders, as does Urdu, but the unmarked order in OV languages is typically V-Aux, as in (26) (from Butt 1994: 69, with simplified gloss).

(26)   Anjum xat   lik^{h}tii hai   (Urdu)
         Anjum letter writing is
         'Anjum writes a letter'

If OV were simply a matter of finite V-to-I followed by remnant VP fronting, then the order would be SVOI, which is virtually unattested in the world's languages (cf. Holmberg 2000b: 135). The derivation of OV order is more complex.

7.2. Roll-up Derivation of OV Structures

There is in fact another way to derive OV structures, even assuming a very close fit between overt morphology and overt syntactic movement.

Strict subcategorization for morphosyntactic features (c-selection), unlike semantico-thematic selection (s-selection), appears to be strictly limited to c-selection by a head for the head of a complement. This is the same configuration that is observed to allow head movement (Travis 1984). In Svenonius (1994b), I suggested that c-selection involves overt or covert head movement.

Holmberg (2000b) and Julien (2000, ch. 5) argue that c-selection may also be effected in the absence of head movement, by the fronting of the selected phrase across the selecting head (implementing a suggestion in Kayne 1994). Holmberg argues that OV order is a prerequisite, in effect, for this movement: c-selection requires phonological adjacency, and if complements of the selected head appear to its right, the selected and selecting heads will fail to be adjacent. Thus (27a) is bad, because the object intervenes between the verb stem and the tense suffix, but (27b) is good, in Finnish, where *kirjoitti* is the (third person singular) past tense form of the verb *kirjoitta* 'write.'

(27) a. * Jussi-ko [$_{TP}$ [$_{vP}$ kirjoitt- romanin] –i t_{vP}]   (Finnish)
          Jussi-Q   write- novel   PAST
      b.   Jussi-ko [$_{TP}$ [$_{vP}$ romanin kirjoitt- t_{o}] –i t_{vP}]
          Jussi-Q   novel   write-   PAST
          'Did Jussi write a novel?'

Here the verb stem and the T suffix remain in situ and are combined only by a late phonological operation; but object movement to the left is a prerequisite[19] (cf. Zwart 1997, Koster 1994, Hinterhölzl 2000 for arguments that VP-internal material must move to licensing positions to the left of *v*). The principle of early Spell-Out in (13) above straightforwardly predicts that *v*P in (27) could not go to Spell-Out without TP, since it could not be assigned a well-formed PF, given that the morphological inflection is absent.

Julien (2000) argues that overt tense suffixation, like overt Agreement suffixation, is always an indication of movement, typically movement of the type in (27) above, for OV languages. This allows the strongest possible interpretation of the Mirror Principle (Baker 1985; cf. Brody 1997), without covert movement.

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[19] The account is also compatible with base-generation of objects to the left of V, but note that Finnish is generally a VO language; OV orders are licensed by various types of focus, as Holmberg shows.

Such movement, when iterated, gives rise to what Brody (1997) calls 'roll-up' structures, like the Finnish example in (28) (from Holmberg 2000b: 141) or the Lezgian one in (29) (from Julien 2000: 217; cf. also Koopman & Szabolcsi 1999 for similar structures in Hungarian). Each bracketed phrase has moved into a higher specifier; I omit the traces.

(28)   Milloin Jussi [$_{TP}$[$_{AuxP}$[$_{PrcP}$[$_{VP}$ romaanin kirjoitta]-nut]   ol]-isi]   (Finnish)
         when   Jussi   novel   write   -PERF be -COND
         'When would Jussi have written a novel?'
(29)   Baku.d-a [$_{EvidP}$[$_{TP}$[$_{VP}$ irid itim   gulle.di-z aqud]-na]-lda] (Lezgian)
         Baku-INESS   seven man(ABS) bullet-DAT take.out-AOR-EVID
         'They say that in Baku seven men were shot'

In the Finnish example, the (Perfect Conditional) verbal complex is spelled out as *kirjoittanut olisi*, something like 'written would've,' and is regarded as two words, though obligatorily adjacent; in Lezgian, the complex *aqudnalda* is regarded as one word (Julien draws on work by Martin Haspelmath).

This analysis appears to be very different from the one examined in §7.1; the verb never leaves its *v*P, in (28-29), unlike the situation in (25) above.[20] However, it may be that both are necessary, even within a single language. The order within *v*P for most OV languages is similar to that in typical VO languages (e.g. indirect object-direct object-PP; cf. Haider 1992), as noted above for West Flemish; thus Roll-up must not typically happen within the *v*P, even on Julien's account.[21] In fact, Julien's assumptions about prefixation (that it involves a higher head in situ) would virtually force her to accept something like Haegeman's analysis for the West Flemish example in (25) above, and indeed she does postulate longer movements of clausal remnants.

On the other hand, the collective arguments for Roll-up structures as an option are substantial, for example the c-selectional account correctly handles the obligatory adjacency between selecting heads in OV structures (e.g. V-Aux is obligatorily adjacent, unlike Aux-V), discussed in Holmberg (2000b). Thus the head-movement account of §7.1 must postulate something like Roll-up structures for higher structure (as in fact Haegeman 2000 and Hinterhölzl 1997 do; cf. Holmberg 2000b for discussion of combinations of head movement and c-selectional Roll-up).

Consider what this means for the analysis here. In languages with obligatory Roll-up, a verb phrase moves into a higher specifier, in order to achieve adjacency with a higher head (and in languages with a clause-final complementizer, TP moves to a specifier to the left of C, possibly SpecCP). If there is any material to the right of the verb (or to the right of T, in the CP), then regardless of whether syntactic features are left unvalued, the phonological features of the verbal complex will be. This will provide the necessary delay for

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[20] Note furthermore that in (25), movement cannot be for c-selectional purposes, since XP does not wind up to the immediate left of its selecting head, but crosses Neg1 as well.

[21] If Roll-up were to occur inside *v*P, then indirect and direct object order would be reversed, as would the order of any 'low' adverbs in the space inside *v*P. Pearson 2000 argues precisely this for certain V-initial languages, including Malagasy; Roll-up occurs inside *v*P, followed by V-movement into the higher functional space.

strong features to be inserted, if available. If strong features are not available, then the structure will crash at PF, except when the verb has no complements. Thus it seems that in any event, Scrambling is a prerequisite for this type of operation (assuming an Antisymmetric *v*P); and interclausal Scrambling will be restricted to languages with clause-final complementizers.

8. Conclusion

In this paper I have argued that a certain class of movements can profitably be seen as being driven by a need to make the part of the derivation being sent to Spell-Out fit PF and LF as well as possible, given the materials the language has at hand (e.g. freely insertable features), in effect broadening the scope of Chomsky's 1999 analysis of Object Shift.

I suggested that the difference between constructions which allow such movement and those which do not is in part a function of how much material is sent to Spell-Out at once; if a lot, then a lot of 'optional' movement is possible; if a little, then little optional movement is possible.

This motivated an approach to Spell-Out that focuses more squarely on properties of the item being evaluated than Chomsky's PIC does; I suggested that phrases might go to Spell-Out when they are 'ready,' rather than being sent when the next higher strong phase head is Merged.

One result is that some languages, particularly head-initial ones with little morphology-driven movement, will send expressions to Spell-Out piecemeal, and allow very little discourse-related reordering. In contrast, highly inflected languages, languages in which the lexical verb raises relatively high, and OV languages in general are all expected to send material to Spell-Out in large chunks and to therefore employ substantial discourse-related reordering.

Languages in which V raises quite high are also expected to exhibit reorderings, even if they are not OV, with Object Shift in Scandinavian being a straightforward example.

To complete the shift of power from the higher strong phase head to the lower phrase, it would be necessary to demonstrate that the principle proposed in (13) in §4 can replace Chomsky's PIC (as stated in (7) in §2). In the absence of (7), nothing in (13) excludes unwanted very long-distance relationships. But perhaps these are ruled out independently, for example by locality conditions on Agree; perhaps one strong head cannot enter into Agree with an element that is separated from it by another strong head, in the spirit of Minimality or Defective Intervention. Clearly, such questions require additional work.

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