WHAT HAPPENS WHEN PHASES GET INDIVIDUALISTIC: ON LF-ONLY & PF-ONLY PHASES*

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Introduction

The notion of cycle has played an important role in linguistic theory from the beginning, when it was defined on completed clauses as a point at which all the operations and rules were applied, to the latest developments of the Minimalist Program and the Phase theory (Chomsky 2001). In phase theory, a cycle/phase is a complete stage in the derivation from the numeration to the units at the two interfaces. A phase starts with its own numeration of lexical items, which are merged together to build structure. Lexical items in this view are of type {S,P,F}-bundles of semantic, phonological and formal features. All parts of the initial structure therefore begin the derivation at the same time, but since some items might move out of their source phase, it is obvious that not all are spelled-out (sent to the two interfaces) at the same time-in the same phase. Since we already have a phase mismatch between what enters the derivation and what exits when a phase is completed, we can expect the mismatch will be actually even bigger (either we have full matching, or else we have no matching). So the question is, where else can we find mismatch in terms of things that entered the derivation simultaneously not getting spelled-out in the same phase.

This paper looks at another possible mismatch, a mismatch of phase completion for the two interfaces. The standard assumption is that when a phase is completed features participating in the derivation get shipped to both interfaces at the same time, so that vP and CP would both be a PF and an LF phase. This seems to be the easiest way in which a derivation could go, but it might not conform to the minimal design requirement. In addition, as pointed out above, we already have a mismatch. Suppose that at the point of Spell-Out a phase is either only a PF phase or only an LF phase — that at the point of Spell-Out features can get only shipped to a single interface. Such theory seems to involve less rules and could be therefore preferred.

Allowing phases to be interface specific we can make several interesting predictions. Since pronunciation and interpretation of a particular item do not have to occur at the same time, an item can be interpreted higher than it surfaces or it can get pronounced higher than it is interpreted. Both cases seem to correspond to phenomena in natural language. When something is interpreted lower in the structure than its surface position, it is said to have reconstructed. On the other hand, when, for example, a quantifier phrase gets interpreted higher than its surface position, it is said to have covertly moved.

(1)   interpretation > pronunciation → instance of **Covert movement**
       pronunciation > interpretation → instance of **Reconstruction**

These ideas have been anticipated to some extent in the literature. For example Nissenbaum (2000) describes the difference between *covert* and *overt movement* as a difference in timing between Spell-Out and move. If movement to the edge applies prior to Spell-Out, movement is overt, but if Spell-Out applies prior to movement to the edge, movement is covert. With the standard assumption that Spell-Out is simultaneous, movement to the edge should not be possible after Spell-Out.[1]

As for the other case, Aoun & Benmamoun (1998) treat total reconstruction to be the result of PF movement. Sauerland & Elbourne (2002) extend this proposal and claim that only things that are already shipped to LF at some earlier point, at some intervening phase, reconstruct.

In this paper I look at the latter phenomenon and show that is not really a case of PF movement, as claimed by Aoun & Benmamoun (1998), but rather a case of an LF phase being inside a wider PF phase (an LF phase being smaller than a PF phase). In section 1 I describe the problem, and give the proposal. In section 2, I discuss two controversial claims made in the proposal — the existence of split phases and the agreeing PF features. Section 3 discusses some potential problems and section 4 concludes the paper.

1. Total reconstruction

As it is well known, the examples in (2) are ambiguous. That is, both indefinite subjects in (2) can be interpreted non-specifically, in the scope of *likely*. To be more specific, there need not be any particular Basque in (2a) that has the property of being likely to win the Tour, nor need there be anyone specific from Xabier in (2b) who has the property of being likely to win the lottery. It could be that it is just likely that some Basque cyclist wins the tour or that a resident from Xabier will win the lottery.

(2)   a. *A Basque is likely to win the Tour (in the coming years)*   likely > a Basque
       b. *Someone from Xabier is likely to win the lottery*   likely > someone from Xabier

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[1] The truth is, he wasn't talking about simultaneous shipment, since, at the time, Spell-Out was just a point where phonological features got separated from the derivation, which continued its way to LF.

Since the surface position of *a Basque* is higher than the position of *likely* in (2a), the DP is said to have reconstructed. The DP is interpreted in the lower clause from which it originates, but it does not surface there, therefore some operation had to either move it up for pronunciation or move it down for interpretation.

Both of these possibilities have been explored. One of the earliest analysis of reconstruction took it to be a lowering operation at the LF, after syntax has done all its upward movements (May 1985). In particular, the cases in (2) were analyzed to involve total reconstruction, lowering of the entire DP constituent to a lower scopal position, something like what is depicted in (3), where *A Basque* first raises over *likely*, and finds itself in the highest surface position (at the point of Spell-Out), but is later lowered to the clausal boundary where it takes lower scope. With this kind of lowering operation, the derivation returns to a previous stage of the derivation. The lowering operation is thus an undoing operation and as such unwanted. In an ideal language design we would not want to do something just so that we can undo it later.

(3)　a.　[*A Basque*]$_i$ *is likely to t$_i$ win* …　　　(in syntax proper)

　　b.　__ *is likely* [*a Basque*]$_i$ *to t$_i$ win* …　　(at LF)

Chomsky (1993) proposed a different approach to reconstruction which does not involve undoing operations. According to the *copy theory* of movement, movement leaves a copy of the moved material rather than a trace in every position it moves from. At the two interfaces one of the two copies must be deleted but that is not necessarily the same copy at both interfaces. In case of total reconstruction as in (2), the first-merged constituent is not pronounced at PF, but it gets interpreted at LF, while the remerged higher copy doesn't get interpreted at LF, but it is interpreted at PF — pronounced.

Although we don't have any unwanted undoing operations, we are still left without an answer to an important question: "How do we know/determine which copy is pronounced and which interpreted?" There is a further problem since this approach leaves the interpretation at the two interfaces as optional. But having things as optional is not an optimal design feature.

It should be added that the kind of reconstruction we are interested in, total reconstruction, is different from the better known and more widely discussed *binding reconstruction* or *partial reconstruction*, as in (4) (this short discussion is a summary of Sauerland & Elbourne's).

(4)　[*Which article about himself$_k$*]$_i$ *did every politician$_k$ read t$_i$*?

As evident from the indexing, part of the moved *wh*-constituent must reconstruct in order for the universal quantifier to c-command the reflexive at LF. But the question is what part reconstructs. As Saito (1989) pointed out, reconstruction found in (4) is not comparable to the one in (2) for the simple reason that in (4) it is not the whole *wh*-constituent that reconstructs. This can be most clearly seen in (5). If the whole *wh*-constituent reconstructs leaving in the upper most scope position only the Q marker, we would expect (5a) to be the LF representation of (5b).

(5) a. *Did Maggie ask* [*which cousin*]$_i$ *to call t*$_i$?
    b. [*Which cousin*]$_i$ *did Maggie ask whether to call t*$_i$?

But it is not just the Q marker that is interpreted high. (5a) and (5b) are two different questions. In these cases only parts of the moved phrase occupy a lower position at LF, (6) being an LF representation of the question in (4).

(6) *Which*$_i$ *did every politician*$_k$ *read* [*article about himself*$_j$]$_i$

Whatever the best analysis of these cases turns out to be, they are crucially different from the phenomena discussed here — total reconstruction, where the entire moved phrase occupies a lower position at LF. Total reconstruction is not available with *wh*-movement.

1.1. Total Reconstruction as PF Movement

All proposals so far analyzed total reconstruction as involving the initial overt movement followed by an optional undoing operation, either lowering or deletion of the remerged element. To avoid the undoing operation, Sauerland & Elbourne (2002) defend a proposal by Aoun & Benmamoun (1998) that total reconstruction comes as a result of PF movement. Aoun & Benmamoun show that PF movement is involved in certain Clitic left dislocated phrases in Lebanese Arabic, which are also subject to total reconstruction. As they explain, since these dislocated phrases only move in the PF component of the derivation, they do not affect their LF structure, which remains as it is at the end of the common syntactic derivation at the point of Spell-Out. Sauerland and Elbourne (2002) extend and strengthen this claim by claiming that total reconstruction is available only as a result of PF movement.

The subjects in (1) are part of the common syntactic derivation, which they call *stem derivation* to the point of the first TP phase. When the derivation reaches TP, Spell-Out occurs, the subject is frozen in its position, and later sent to the interfaces. After the stem syntactic derivation, the subject moves higher in the PF component, to satisfy a PF interface condition.

Since all operations occurring at PF must follow Spell-Out, at which point material is shipped to the interfaces, they also follow the stem derivation. Since at the point of Spell-Out the derived structure is also sent to the LF interface, all subsequent PF only operations fail to have any effect on the LF. There is no path from the PF interface back to LF, therefore PF movement cannot affect interpretation. All PF moved constituents get interpreted at the point where they were located at Spell-Out (unless there are some further LF operations transposing them).

1.2. Why is total reconstruction not just PF movement

In order to get their analysis going, Sauerland & Elbourne (2002) have to make several controversial assumptions. They have to argue that the (standardly syntactic) need to have a filled SpecTP —the EPP— is satisfied with a PF movement, that EPP is in effect a PF condition. In addition, it is a bit strange, that PF movement can target specific syntactic positions, especially if PF consists of no more than

phonological features, but views of the structure available in the PF component differ and this should not be taken as an objection.

Sauerland & Elbourne's analysis of (2) also makes one crucial wrong prediction. If at the point of TP the derivation reaches a phase and all the material is frozen or shipped to the interfaces, we would predict that the DP later PF-moved to a higher position does not have any affect on the higher portion of the sentence, that it does not participate in the later syntactic derivation. In particular, the low-interpreted DP —with narrow scope interpretation— should not trigger agreement on the verb/T from the matrix clause, since its *phi*-features are already spelled out and have already left the syntactic derivation. But if nothing moves to check the features on T, they could only get default values (if any at all), but this is not what we find. The plural DP in (7) is subject to total reconstruction and it also agrees with the upper T.

(7) a. *5 Basques **are** likely to win all the jerseys*   likely > 5 Basques
    b. *Scissors **are** likely to be in the drawer*   likely > scissors[2]

Unless we put agreement in the PF side of derivation, we would not be able to derive sentences in (7). But having agreement in PF is also not permitted by Sauerland & Elbourne (2002). They need agreement in the stem derivation to explain facts like (8) from British English. As seen in (8), even without overt plural marking, collective names can trigger plural agreement (supposedly with [Mereology: plural]). Interestingly, when they do trigger plural agreement in the sentences under discussion, the subject is not subject to total reconstruction (the indefinite only gets the specific reading), which suggests it was LF interpreted in its surface position. Since the agreement on the verb is forced by [Mereology: plural], which is a semantic feature that never spells-out to PF, it could not have been sent to LF at the lower TP phase, otherwise there would be nothing to interpret in the matrix clause and no features to trigger agreement.

(8) a. *A northern team is likely to be in the final.*   ∃ > likely, likely > ∃
    b. *A northern team are likely to be in the final.*   ∃ > likely, *likely > ∃

With this in mind, a PF moved DP should not be able to trigger any agreement in the matrix clause, yet as we see in (7) it does.

1.3. A different approach to PF movement

The proposal made here that avoids these problems is already hinted at by Sauerland & Elbourne (2002: 315):

> Slightly extending Chomsky's idea, we propose that actually the edge of a phase can be distinct for LF and PF and that a phrase in only the LF or PF edge of a phase is accessible only for LF or PF movement, respectively, in a later phase.

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[2] More about the plural agreement and pluralia tantum nouns in section 2.2.

I want to elaborate this line of thinking and show how it can explain the data correctly. If we accept that phases can spell-out/ship features to PF or LF alone, we can retain all movements in (2) in syntax proper. Syntactic elements/objects would move in syntax proper, but whatever moves, would not be a standard syntactic object/item anymore. The item moved after such a partial Spell-Out would only have specific PF-only characteristics, with all the relevant LF-only features spelled-out.

When the derivation of (2) reaches the TP phase the Spell-Out doesn't spell-out to both interfaces, but only to LF. TP is not a standard phase boundary therefore we would not expect it to behave like other phase boundaries. Sauerland & Elbourne (2002) suggest that, in addition to vP and CP, TP should be considered a phase, but for them, every phase is a bi-interface phase and as we have seen, their approach runs into problems. Rather than taking TP as a usual/standard phase boundary, I suggest it is an LF-only phase induced by the scopal predicate *likely* in the sense of Wurmbrand & Bobaljik (to appear). Since whatever would normally be sent to PF in a complete phase (CP and vP) stays in the derivation, it can participate in further syntactic derivation (of course with some limitations). Accepting this kind of approach, we retain all the movements in syntax proper. The derivation for the particular item (parts of which were sent to LF) would not be a typical *stem derivation* anymore, since not everything participating in it would be sent to both interfaces when the next higher phase is reached.

The lower clause is derived in the usual way by stem derivation. The feature bundle of the subject checks the EPP of the lower TP as it moves from Spec-vP to Spec-TP, (9a). As said, when *likely* is merged into the structure, it induces an LF phase, (9b). When the projection of *likely* (whatever it is) is complete, the LF related features ($[_{LF}$ x]) of the complement of *likely* are frozen in its place/sent to LF, where the complement of *likely* creates a semantic unit, a proposition. But since *likely* only induces an LF phase, all the PF related features ($[_{PF}$ x]) are left untouched.

A lexical item is standardly viewed as having three types of features, semantic, phonological and formal. Chomsky (1995b) claims each lexical entry is of the form {P, S, F}, where P (phonological features) yield π (pronunciation), S (semantic features) yield λ (interpretation), and F (formal features) participate in the derivation, but must be eliminated for convergence. Since the feature we are interested in at the moment, [Plural] on the DP, is interpretable at LF, it seems natural to treat it as a semantic feature. But if it is a semantic feature, then it should get spelled-out/frozen when the derivation reaches the induced phase. Yet as shown in (7), plurals can get non-specific interpretation and trigger plural agreement. Phonological features are the kind of features that have no influence on interpretation (they are sent to PF). But if plural has overt morphology on nominals, than [Plural] also has to reach the PF interface (or more precisely the Morphological component on the way from Spell-Out to actual pronunciation). In addition, *Pluralia tantum* nouns are not necessarily interpreted as plural entities, yet they have overt plural marking and in addition trigger plural agreement, suggesting, that the phonological [Plural] ($[_{PF}$Plural]) can trigger plural agreement just as well as purely semantic $[_{LF}$Plural] does.

Since $[_{PF}$Plural] is a phonological feature, one could suspect the whole verbal agreement occurs in PF, thus saving Sauerland & Elbourne's (2002) analysis. But notice that agreement on the verb can be triggered both by purely semantic features

like [$_{LF}$Mereology] as claimed by Sauerland & Elbourne (2002) and by purely phonological features like [$_{PF}$Plural]. This shows that agreement cannot happen in only one part of the derivation (either only in PF or only in LF). Further, the fact that in our case plural agreement is derived with non-specific interpretation, suggest that agreement is also not restricted to stem derivations. We will return to the issue of what exactly [$_{LF}$ x] features and [$_{PF}$ x] features are in section 2.2.

When the rest of the upper clause is constructed, the subject (actually just its PF part - lacking [$_{LF}$ x]) can move up to Spec-TP, to check the EPP and the phi features ([Φ]) of the upper T. Since [$_{PF}$ x] of the subject include [$_{PF}$Plural], agreement on the upper verb is not surprising.

(9) a.

b. induced LF-only phase

c. induced LF-only phase
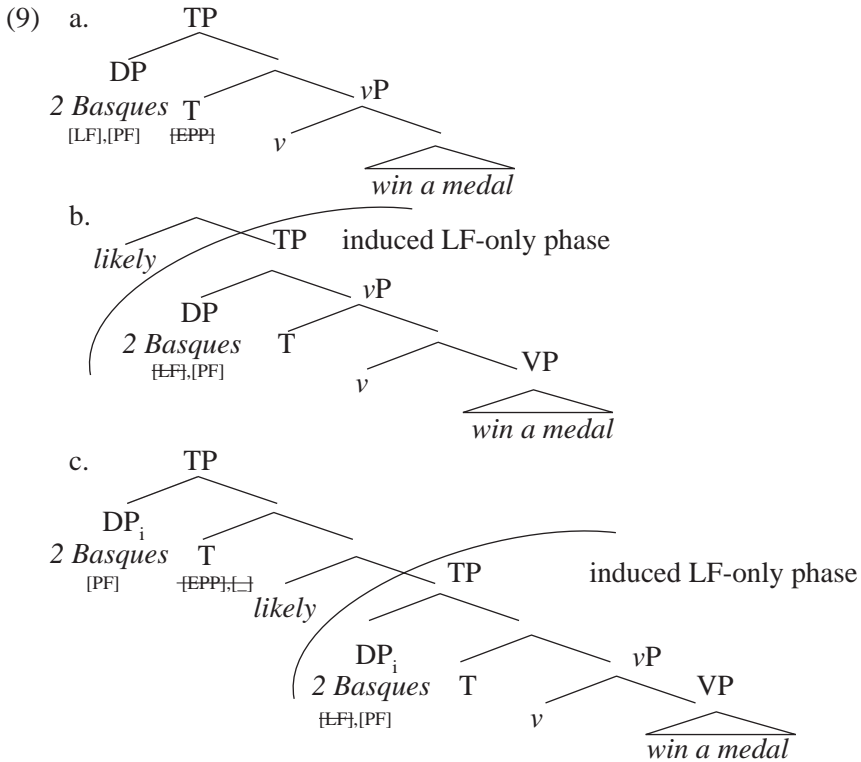
At the end, when the entire sentence is constructed and the top CP closes the sentence, everything is spelled-out to both interfaces. But since the phases were mis-aligned the DP *2 Basques* is pronounced in the upper subject position, where its [$_{PF}$ x] features end up, and interpreted in the lower subject position (within the scope of *likely*), from where it was sent to LF. Thus we end up with sentence (10a), interpreted as (10b).

(10) a. *2 Basques are likely to win a medal.*
       b. *It is likely that 2 Basques win a medal.*

(10) is underivable for Sauerland & Elbourne (2002), for whom the *phi*-feature [Plural] spells-out at the lower TP phase where both interfaces are fed. A purely PF movement that follows should not target a specific syntactic position and check the features of the upper T thus triggering plural verbal agreement. Agreement comes with the subject's checking the uninterpretable *phi*-features on T (Chomsky 1995a, 2000). Only a syntactic movement can trigger agreement with the required features. I proposed there are [$_{PF}$ *phi*] features that are not affected by the LF-only phase and can trigger agreement, since a DP with phonologically overt Plural, e.g. in (10), has its [Plural] features visible both at LF and at PF. For non-specific reading, only the DP's [$_{LF}$ x] features get frozen in the lower clause, while the rest of the DP continues the derivation and checks *phi*-features on T in the upper clause with its [$_{PF}$ *phi*] features.

One obvious problem comes to mind. A phase boundary is not only the point where the completed phase is Spelled-Out but also the point where the new phase is started. Thus if the endpoints of the LF and PF phase differ, does it mean the starting points of new phases differ also? Since a phase is defined as a complete cycle including the numeration and derivation, having completely independent phases would suggest completely independent numerations consisting of only PF or only LF related material/features. But that would suggest matching of PF and LF is a result of pure coincidence and seems plainly wrong.

It seems natural to say that at the point of Spell-Out the numeration has to be emptied, but if at the point of Spell-Out derivation is not shipped to both interfaces, the phase is not really completed and maybe the lower numeration could still give items to the derivation, but than it also wouldn't be emptied. Thus, it seems, even at the point where only a partial phase is completed, the numeration has to be completely empty. But if it is empty, than of course the new phase has to bring in items relevant for both interfaces. Thus any partial phase, acts as a starting point for both phases. I see this as a welcome result. Notice that it doesn't matter how much material is being shipped to the interfaces at the point of Spell-Out since a phase regularly accepts items that joined the derivation in a previous phase and moved out. In this particular case the next PF phase would spell-out structure constructed from two enumerations—the lower TP (that was already shipped to LF) and whatever would get constructed on tope of it. In a way thus phases do remain parallel and have one to one corresponding, is just that in some cases they don't Spell-Out to both interfaces simultaneously.

2. On two non-standard claims

Two non-standard assumptions were used in order to derive the desired non-specific reading of (10). First, I claimed that phases —stages in the derivation— do not have to be the same for the two interfaces, that a phase in the derivation of the LF representation, does not necessarily have a correspondent PF phase. Second, I claim there are [$_{PF}$ *phi*] features, independent of their LF correspondents, that can also check T's *phi*-features and thus trigger plural agreement on the verb. In this section, we will look at both claims/assumptions in more detail in try to provide independent motivation for them.

2.1. Phases in the derivation

As proposed by Chomsky (2000, 2001), derivation proceeds in stages at the completion of which the constructed structure is no longer accessible for any further operations, which follows from the Phase impenetrability condition (cf. Epstein *et al.* 1998, Chomsky 2000, 2001, Uriagereka 1999). At the next higher phase, the lower phase is sent to the two interfaces — PF and LF. Phase is a self-contained subsection of the derivation, from Numeration→…→Spell-Out→PF/LF. Since, at the point of Spell-Out, the derived structure is divided into what goes to LF and what goes to PF, we can talk about the structure being composed of these two parts even before Spell-Out. Therefore PIC actually talks about specific kinds of features being unavailable for specific operations. Namely, $[_{LF}$ x] being unavailable for all the operations LF features are involved in and $[_{PF}$ x] being unavailable for the kind of operations they would usually participate in.

Chomsky (2000, 2001) further proposes there are two strong phases in the main structure of the sentence —*v*P and CP— where a strong phase means a point of Spell-Out — point at which structure is interpreted and features sent to the interfaces. What exactly is sent to the interfaces and how the structure is read or what is its importance is not entirely clear. But it is definitely true for the LF that it interprets the whole syntactic structure together with its leaf nodes and their semantic features, since LF interpretation is compositional, meaning, structure is essential. Less clear is this for PF, although it is still accepted that PF phrasing depends on syntactic structure (cf. Chomsky and Halle 1968, Cinque 1993, Truckenbrodt 1999, Kahnemuyipour 2003, Wagner 2004). I leave the question of what exactly participates in the derivation (either actual phonological features that direct our pronunciation or features that are than substituted with lexical items as in Late Insertion, e.g. Marantz 1997) since whatever we decide to adopt we still need some sort of features that are spelled out to PF and ultimately determine what we say.

Phases should also have interface realities —there should be a reflex of phases on the interfaces. According to Chomsky (2001), phases are propositional elements, suggesting that whatever is shipped to LF when a phase is completed forms a proposition at LF (or after the LF goes through all the required LF operations)— proposition can also be seen as a unit of information. Phases also offer a natural point for the calculation of Interpreted Logical Forms (Larson and Ludlow 1993). Interpreted logical forms are units of information and thus nicely correspond to propositional phases. Butler (2003), working in a different semantic framework, gives an account of syntax-semantics interface where every phase corresponds to a quantificationally closed situation. On the PF side, phases are reflected in as phonological units —i.e. prosodic word, prosodic phrase, intonational phrase etc.— they have some level of phonetic independence (cf. Marvin 2002, Marušič 2001).[3]

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[3] It should be mentioned here, that it is not the identity of the phase that determines what kind of semantic or phonological unit a particular spelled-out constituent is. Rather, it is the amount and type of the material inside this unspecified chunks of structure that are thrown into the computation at the interfaces that determines whether something is an event, proposition … or, on the other side, an intonational or a prosodic phrase.

Standardly a phase is said to be both the point of PF and LF Spell-Out — freezing and shipping of the features to the two interfaces is said to happen simultaneously (Chomsky 2001, Legate 2001, 2003). But since phases are reflected as units at the two interfaces and if this is the only way interfaces units can be created, if every PF phase has a correspondent LF phase than every PF unit should have a correspondent LF unit and vice versa. Intuitively, this is not the situation in natural languages. We have both complex semantic constituents that form a single PF unit like compounds and complex PF constituents that form a single simple LF unit — idioms. In addition, it is not clear why we would want to restrict this possibility in a minimally designed grammar if it doesn't follow from anything else.

I will call non-simultaneous phases *Split phases* (shipping material to either only PF or LF interface). Split phases have been proposed and were discussed also by Felser (2004), Wurmbrand and Bobaljik (2003) and Marušič and Žaucer (2004). We will now look at some further evidence for the existence of split phases.

2.1.2. *The Slavic* FEEL-LIKE *construction*

Marušič and Žaucer (2004a, 2004b) give a thorough description of the Slovenian FEEL-LIKE construction, in which a single verb (root + affixes) is composed of parts belonging to two different clauses. Following Marušič and Žaucer, this apparently monoclausal construction, (11), is given a biclausal analysis with a hidden matrix predicate, (12). The hidden predicate corresponds to the overt verb that appears in the paraphrase.

(11) *Gabru   se je   pilo   koktejle.*   (Slovenian)
Gaber$_{Masc,DAT}$ SE AUX$_{Sg}$ drink$_{3,Sg,Neu,Past}$ cocktail$_{Masc,Pl,ACC}$
"Gaber felt like drinking cocktails."

(12) [$_{TP}$ *Gabru* NON-ACT [$_{VP}$ FEEL-LIKE [$_{FP}$ PRO [$_{vP}$ [$_{VP}$ *drink* [$_{DP}$ *cocktails*]]]]]]]

The construction is apparently monoclausal, since it only has one overt verb, but as suggested already in the glosses, it is interpreted with two distinct predicates, the pronounced verb and the non-pronounced dispositional element. Based on a variety of arguments, including double temporal adverbials referring to two distinct events denoted by the two predicates, two opposing depictive predicates, suggesting again two events occurring at two different times etc. Marušič and Žaucer conclude that the sentence is covertly composed of two clauses with their own predicates denoting separate events possibly occurring at different times. The whole issue of timing of the two events is important because it suggests two separate LF units and thus two phases. Two LF phases are also suggested by the intensionality of the construction, non-specific reading of the object, possible use of non-referring names etc. Last but not least, the construction has been standardly analyzed with a covert modal element, taking a proposition as a complement (cf. Franks 1995, Rivero & Milojević-Sheppard 2003 among others). If phases create propositions, than the complement of the "modal" is an LF phase even in these monoclausal analyses.

What is important for the present discussion is that unlike its apparent LF structure, the construction's PF structure is quite simple. First, there is no apparent clausal boundary that would prevent scrambling and clitic climbing, as shown in (13).

(13) a. *Televizijo se je   Vidu [gledalo t_i že   včeraj]*
     TV$_{ACC}$ SE AUX$_{3P,Sg}$ Vid$_{DAT}$ watch$_{Past,Sg,Neut}$ already yesterday
     "Vid felt like watching the television already yesterday."

   b. *Včeraj   se jo$_i$ je   Vidu [gledalo t_i]*
     Yesterday SE her$_{Cl,ACC}$ AUX$_{3P,Sg}$ Vid$_{DAT}$ watch$_{Past,Sg,Neut}$
     "Yesterday, Vid felt like watching her/it." (e.g. television)

Even more revealingly, tense inflection on the only overt verb actually does not belong to this verb since it modifies the disposition rather than the event denoted by the verb. Thus tense morphology belongs to the hidden FEEL-LIKE predicate. Since the FEEL-LIKE predicate is the matrix predicate in this construction, the tense morphology modifying its event also originates in the matrix tense projection. Therefore the tense morphology from the matrix tense, ends up being attached to the lower verb, forming a single word composed of elements from two distinct clauses.

To show this with actual examples, (14), with future tense morphology, signifies a future disposition towards *sitting outside*, not a present disposition towards a future event of *sitting outside*. To express a present disposition, the verb has to be in the present tense, (15).

(14) *Filipu se ne bo   sedelo jutri   odzuni.*   (Slovenian)
     Filip$_{DAT}$ SE NEG AUX-**FUT**$_{Neut}$ sit$_{Neut}$ tomorrow outside
     "Filip won't feel like tomorrow sitting outside."
     *"Filip doesn't feel like tomorrow sitting outside in the future."

(15) *Filipu se jutri   sedi   odzuni.*   (Slovenian)
     Filip$_{DAT}$ SE tomorrow sit$_{Neut,\textbf{Pres}}$ outside
     *"Filip won't feel like tomorrow sitting outside."
     "Filip doesn't feel like sitting outside tomorrow."

(15) additionally shows that although the verb is given in the present tense it can still appear with a future adverbial. Not surprisingly this is OK. The adverbial modifies the time of the sitting and is located inside the lower clause, which explains why there is no conflict between the present tense on the verb and the future adverbial.[4]

Verb and its tense inflection make up a single word. Note that the verb did not raise out of its position since it is interpreted inside the lower clause, inside the scope of the feel-like predicate (additionally, the verb itself is opaque, for example, it need not refer to an actual event, and one surely can fell-like levitating). With its temporal inflection clearly belonging to the matrix predicate, we have an example of a single word —a single phonological unit (created in a single PF phase)— that is composed of parts belonging to two different semantic units/LF-phases.

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[4] For a discussion on the futurate readings of the present tense and some facts showing this is not related to futurate, see Marušič and Žaucer (2004).

2.1.4. Infinitives and restructuring

Non-finite clauses show transparency for clitic climbing and scrambling, but can still induce scopal effects such as non-specific reading of the embedded object. On one hand they show evidence of lesser structure —they lack the CP projection as argued for by Marušič (2003)— while on the other they get interpretations parallel to those of other clausal complements - the complement is a proposition (cf. Wurmbrand 2001, Wurmbrand and Bobaljik 2003, Marušič 2003).

Scrambling from Slovenian finite clausal complements shows A-bar scrambling properties, while scrambling from non-finite complements shows A-properties: it does not trigger WCO, (16b), and it does not trigger total-reconstruction of the scrambled element, (16a).

(16) a. *Vse punce se   je   nekdo   odločil poklicati po   telefonu __*   ∃>∀, ∀>∃
         all girls REFL AUX someone decided to call$_{INF}$ over phone
         "Someone decided to call all girls"

    b. *Janeza$_i$ je   njegov$_i$ oče   sklenil poslati __ v   semenišče.*
       J-ACC$_i$ AUX his$_i$ father decided send$_{INF}$ to theological seminary
       "His$_i$ father decided to send John$_i$ to the theological seminary."

Clitics can easily climb from Slovenian non-finite complements, (17). Assuming Slovenian second position clitics are positioned in PF (Marušič, in prep), this not only shows there is no CP boundary, but that there is in fact no phase between the matrix clause and the embedded non-finite complement. In particular, it shows there is no PF phase (or at least no more PF phases than there are in a non-embedded sentence).

(17) *Res **sem ji ga** sklenil* [PRO *opisati   __ __*]
     really AUX her him decide   describe$_{INF}$
     "I really decided to try to describe him to her."

Non-finite complementation creates opaque contexts and the clausal complement denotes a proposition, therefore the clausal boundary obviously shows properties of an LF phase. Thus we have a conflict of phases, what appears to be an LF phase, is not a PF phase.

As I showed, we get clear mismatch between phases in other constructions as well. Therefore positing split phases in cases of total reconstruction discussed in this paper doesn't sound as an unsupported assumption anymore.

2.2. On features

2.2.1. PF plural features

According to the proposal advanced in this paper, there are [$_{PF}$ *phi*] features that can trigger verbal agreement. Although this is not an entirely controversial claim, it would be still nice to have some independent evidence for it. First note that Sauerland & Elbourne (2002) discuss a kind of plurality found in British English that has no morphological exponence but can nevertheless trigger plural agreement on the verb, (18).

(18) *The government are ruining this country.* (Sauerland & Elbourne 2002: (13b))

For them, this is a case of the purely semantic plural feature $[_{LF}$ Mereology$]$ triggering verbal agreement. In a similar way as there are purely semantic $[_{LF} \, phi]$ features, one can also think of purely phonological ones. I claim there are (gender and) number features that have morphological reflex but cannot or may not be interpreted at LF, and that in addition, they are part of the syntactic derivation and have the same effect on verbal agreement as the more common LF interpretable *phi*-features.

In Slovenian, the verb has to agree with the nominative subject in person, number, and gender. Since person is not a feature of the nominals (apart from personal pronouns) and gender is a bit tangential to the main point, they will be left out.

First note that there are a lot of plural place names in Slovenian. Insuch cases we clearly refer to a single individual —the town or village having the particular name— but the nominal morphology and the verbal agreement it triggers are both plural. Such names are for example: *Helsinki, Abitanti, Banjsce, Baske, Bate, Benetke, Brezje, Firence, Gorje, Jesenice, Lohke* etc. Although, they are plural only phonologically, only plural personal pronouns can be used to refer to them.

(20) *Lohke   so   majhne. Ampak   večjega kraja   od   njih   na Banjscah preprosto ni.*
    Lohke$_{PL}$ **are** small.   But there is no   place bigger than **them** on Banjsce.

Apart from these peculiar place names, there are also plenty of pluralia tantum nouns, (21), that trigger plural agreement on the verb, (22), but refer to a single entity/item and fail to show any signs of semantic plurality. These kind of nouns can be used also with the numeral *one* (interpreted not as an indefinite but as a true numeral counting the number of items referred to), (22).

(21) *hlače,   očala,   skarje jetra sanke*   (Slovenian)
    trousers, glasses, scissors liver sled
(22) *Razbila so   se   mi samo ena očala.*   (Slovenian)
    broken AUX$_{Pl}$ REFL me only one glasses$_{Pl}$
    "Only one pair of glasses have fallen apart."

In addition, they cannot be used with a floating quantifier, which can only be used with semantically plural arguments, (23). Thus we can safely conclude these nouns are, despite their plural morphology, semantically simply not plural. Or at least not plural in the usual sense.

(23) **The trousers have all been very dirty, since M$^{\underline{a}}$José doesn't want to take them off*

Semantic plurality should license also the use of reciprocals. But again, as we see in (24), such use is not grammatical with the pluralia tantum nouns, when they refer to a single item. The plural that is realized with plural morphology is thus not spelled-out to the LF interface, suggesting we are dealing with a PF-only plural feature — $[_{PF}$ Plural$]$.

(24) **Svoje edine hlače sem drgnil ene ob druge.*
    *I rubbed my only trousers against each other.

To confirm that we are really dealing with the same kind of plural features here and in the non-specific plural examples in (7), we have to show these same nouns with $[_{PF}$ Plural$]$ triggering plural agreement can also trigger plural agreement when they are

interpreted non-specifically. The understanding of these facts advanced here predicts plural agreement would not interfere with the scope of the indefinite. This prediction is confirmed in (25) (=(7b)), where we don't have to be talking about any specific scissors, even when we don't mean more than one pair of scissors. Just to make it easier to understand, we can imagine we have more than one pair of scissors at home, but the drawer in the table can only fit one of them. In this situation we can utter (25) without thinking of any specific scissors, but still talking about a single pair of them.

(25) *Scissors are likely to be in the drawer.*   Likely > ∃

Thus we have established the existence of [$_{PF}$ Plural] features and shown they are indeed responsible for verbal agreement. This, of course, does not mean they are the only plural features that can trigger agreement. If they were, then verbal agreement might have been a PF operation and we could maintain the movement of the non-specific subject in (2) and (25) in phonology. But as it was already shown above (taken from Sauerland & Elbourne 2002), in British English morphologically singular nouns can trigger either singular or plural agreement, (26).

(26) a. *The Government **is** ruining this country.* (from Sauerland & Elbourne 2002)
      b. *The Government **are** ruining this country.*

The fact that agreement on the verb can be triggered both by purely semantic features like [$_{LF}$ Mereology] and by purely phonological features like [$_{PF}$ Plural], shows that agreement cannot happen in only one part of the derivation (either only in PF or only in LF). Therefore it has to happen in syntax proper. Further, the fact that in our case plural agreement is derived with non-specific interpretation, suggest that agreement is also not restricted to stem derivations in the sense of Sauerland & Elbourne (2002).

2.2.2. More on features

Floating quantifiers like *all* require semantically plural DPs in their clause. Therefore we can use floating quantifiers as a test to see whether semantic plurality indeed accompanies the type of reading — specific vs. non-specific. As it turns out, it does. (27) with the floating quantifier below *likely* only requires plurality to be in the clause below *likely*. And indeed (27) has a non-specific reading of the subject. There aren't any 5 specific Basques that have the property of being likely to be among the top than, it is just likely, that among the top 10, there will be 5 Basques.

(27) *5 Basques are likely to all be in the top 10*   likely > 5

(28), on the other hand, with the floating quantifier preceding *likely*, only has the specific interpretation, with 5 (specific) Basques all sharing the property of being likely to end up among the top 10 (e.g. on next year's Tour de France). This is as said not surprising. The floated quantifier requires a semantic plural argument in its clause, therefore, to license the floating quantifier, the subject had to move to the upper clause entirely (including its LF plural features). This resulted in the wide scope interpretation of the subject.

(28) *5 Basques are all likely to be among the top 10*   5 > likely

To license *all*, semantic plural features have to be present in the movement, which means the DP cannot be sent to LF inside the lower phase. (28) is comparable in its effect to the British English facts reported by Sauerland & Elbourne (2002), given in (8).

3. Further Issues

3.1. On apparent optionality

Both sentences in (1) are actually ambiguous between the specific and non-specific reading of the subject. The apparent problem for the argued optimal design of the theory is optionality of the specific reading. Sauerland & Elbourne (2002) claim the specific reading of (29), the one presented as ∃ > *likely*, comes from stem-movement of the DP to the upper position. But how can such stem-movement be allowed, how can the DP move after it was spelled out? Obviously it has to move to the edge of the phase to avoid that, but how can it move if it doesn't have to? How can such movement be optional?

(29) *A Bull is likely to run over a tourist in Iruña.*

This problem is actually shared by all approaches taking specific reading as a result of the indefinite moving out of the scope of *likely*. I do not want to go into this discussion too far. The same "optionality" is present in all cases of the indefinite taking wide scope discussed by Fodor and Sag (1982). I do not give any definite answer but only try to avoid stipulating any kind of optionality. Having or not having a phase cannot be optional. Nor does it sound acceptable to treat as optional the moving of the DP to the edge of the LF phase.

Specific interpretation can be seen also as a special case of the non-specific one. This is either done by saying indefinites are ambiguous between a true quantifier and a choice function (Kratzer 1997) or that their restriction, being a set, can be a singleton resulting in a so-called *singleton indefinite* that behaves just like a referential noun phrase (Schwarzschild 2002, von Fintel 2000). In both cases the specific/referential reading is not derived by movement, but is a result of some property of the indefinite quantifier and the consequences this property has on the form of the LF representation.[5]

3.2. Universal quantifiers and complex likely predicates

Sentences with a universal quantifier in subject position, (30), are a bit tricky — judgements are not really clear, but some sort of agreement can nevertheless be established. The universal quantifier can definitely be interpreted outside the scope of *likely*, but the reading with the quantifier taking narrow scope is less clear.

(30) *Every Basque cyclist is likely to be among the top 10*   ∀ > likely, likely > ∀

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[5] Note that in some cases, like the one where [mereology] of the collective DP triggers plural agreement on the matrix T/verb, the subject does appear to move to the matrix clause in (stem) syntax and not get shipped to LF in the lower clause. So there need to be some optionality allowed here, and if it is allowed in this case, we could also let it deal with other specific readings. A case of subject moving to the matrix clause (in that case obligatorily) might be also required for cases with more than one raising verb in a sequence (cf. section 3.5).

The confusion comes form two sources. One is the meaning of the predicate *likely*, the other is the entailing relations among relevant situations. *Likely* is commonly interpreted to mean something like "with the likelihood (much) higher than 50%". But this kind of interpretation only applies to a situation where we are comparing two possible situations (e.g. in coin tossing, the result is either head or tails). In such a case, the situation that is likely has a higher probability of occurring than the other one —is more likely to occur. But in case there are more than just two possible outcome situations, likely can either mean "more likely than not" or "more likely than any other single situation". In the first case, the actual probability would still need to be higher than 50%, but in the latter case the actual probability could be smaller than 50% as long as it is higher than any other probability of a single situation. With this in mind we can return to the interpretation of (30).

There seem to be two possible interpretations of the narrow scope universal quantifier. We are either comparing probabilities of single situations (situation with all Basques among the top ten vs. situation 1 with a particular (non-Basque) cyclist in place of Iban Mayo, situation 2 with a particular (non-Basque) cyclist in place of Haimar Zubeldia, etc.) or else we are comparing the likelihood of occurrence of a situation with all Basques among the top ten versus the probability of its non-occurrence (which is the sum of probabilities of all situations where it is not the case that all Basques made it to the top 10). The thing is that the first interpretation follows from the wide scope interpretation of the universal quantifier, while the second one entails the wide scope interpretation of the universal quantifier. Let me explain this a bit further.

We'll Start with the narrow scope reading of the universal quantifier and >50% chance interpretation of *likley*. If it is true that it is likely that all Basques finish the race among the top 10, then it is also true for every Basque that he is likely to end up among the top 10. The individual probabilities would get very high and would be definitely different from the probability of the situation where all get placed among the top 10, but since *likely* doesn't specify the degree of likelihood, such entailments are allowed. Thus, the narrow scope reading is just a special case of the wide scope. Notice that under such interpretation of the sentence, the sentence obviously cannot be true if there are more than 10 Basques competing, since 11 participants cannot have a chance higher than 50% to be among the top 10 (just like the two sides of a coin cannot be both likely for the coin to land on).

And if it is true for every Basque that he has the property of being likely to be among the top ten, than we can say that the situation where all of them are placed among the top 10 is more likely than any other single situation in which an outsider occupies a position where a favorite could be. Thus the two possible narrow scope reading seem to be reducable to the wide scope interpretation of the universal quantifier. Since I the second possibility is possible but not necessarily actual, I conclude the universal quantifier in (30) only has wide scope.

The same apparent ambiguity, as observed in (30), seems to be also available for other quantifiers, e.g. *most* in (31). Here again, under the >50% chance interpretation of *likely*, if it is true that it is likely that most Basques will finish among the top 10, then it is also true for most Basques that they have the property of being likely to finish among the top 10 (and there are at most 19 Basques participating). Thus the narrow reading entails the wide scope reading suggesting the narrow scope reading is again just a special case of the wide scope one.

(31) *Most Basques cyclists are likely to be among the top 10*   most > likely, likely > most

The situation changes with more complex *likely* predicates that specify the degree of likelihood. Total reconstruction of an indefinite is possible over a more complex *3% likely*, (32). Of course, both sentences in (32) have also the specific reading, which can be said to have either the wide scope indefinite or is triggered by singleton indefinites.

(32) a. *A Basque is 3% likely to win a gold medal*   3% likely > ∃
     b. *A Basque is somewhat likely to win a gold medal*   s/w likely > ∃

But when a complex *likely* predicate is combined with a universal (or any other quantifier) the ambiguity of (31) disappears.[6] (33) is unambiguous with the universal quantifier taking wide scope. The "reconstructed" interpretation from (31) is impossible.

(33) a. *Every Basque is 3% likely to be among the top 10*   ∀ >3% likely, *3% likely >∀
     b. *Every Basque is s/w likely to be among the top 10*   ∀ >s/w likely, *s/w likely >∀

Firstly, we have to note that the cases with the universal quantifier are genuinely different. As we have seen for (30), unlike with indefinites that get reconstructed, the universal quantifier is interpreted outside of scope of *likely*. We saw earlier how the narrow scope reading of the universal was just a special case of the wide scope reading and noted that this kind of entailment from narrow scope to the wide scope was possible because *likely* alone is a predicate of unspecified probability (as long as it is (much) bigger than 50%). Notice that the same entailment/inference is not available with a specific degree of likelihood. If it is 3% likely that everybody will be among the top 10, that doesn't entail mean that everybody has the property of being 3% likely to be among the top 10. If the probability for the situation in which everybody is positioned among the top 10 is 3%, then the probabilities for the individuals to get among the top 10 are different, but regardless of the actual number, they are not 3%, they should be much higher.

Although ambiguity was observed in (30), it is not surprising we don't find it in (33), since, as explained, (30) is ambiguous because of the undetermined *likely*.

3.3. Elided facts

Ellipsis is standardly taken to be licensed by some form of LF sameness of the antecedent and the elided part (Merchant 1999). A combination of LF sameness and the analysis presented here, where the high surfacing subject gets interpreted low because that is where it is located at LF, predicts ellipsis of a conjunct, should not really be possible, (34a) gets interpreted as (34b).

(34) a. *A Swiss is likely to be among the top 10 and a Czech is likely to be among the top 10 too.*
     b. *It is likely for a Swiss to be in the top 10 and it is likely for a Czech to be in the top 10.*

But as shown in (35), ellipsis in such cases is possible. The two indefinites are both read non-specifically, which according to the proposal advanced here is a result

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6   This was pointed out to me by Andrew Nevins.

of the early LF spell-out of the lower clause. But if the subject is really interpreted in the lower clause, the elided clause is not LF identical to its antecedent.[7]

(35) *A Swiss is likely to be among the top 10 and a Czech is too.*

But we should ask ourselves if ellipsis is really conditioned solely by LF identity? I do not offer an answer, I simply want to point out to another case of ellipsis where LF identity seems to be violated. Consider the sentences in (36). Since the reflexive and the possessive in the subject are co-indexed with the subject of the embedded clause, the subject seems to be interpreted in some lower position inside the embedded clause.

(36) [*Three pictures of himself$_k$*]$_i$ *is a lot for Peter$_k$ to take t$_i$*
      [*Three pictures of himself$_k$*]$_i$ *are a lot for Peter$_k$ to take t$_i$*
      [*Three pictures of his teacher$_k$*]$_i$ *are a lot for anybody$_k$ to take t$_i$*

Since reflexives and quantifiers co-indexed with pronouns are commonly used as diagnostics for reconstruction and as a general interpretation location search, I take the claim that (36) involves reconstruction to be correct. Note that this is not a *though construction*, which is standardly taken to lack reconstruction properties (*Everyone is though to please =/= It is though to please everyone*). Without going any further into this construction, let me just point out that this construction also allows ellipsis, presumably without LF identity.

(37) [*3 chickens is **a lot to eat***] *and* [*3 melons is too*].
      [*3 chickens are **a lot to eat***] *and* [*3 melons are too*].
      [*3 pictures of himself is **a lot for Peter to take***] *and* [*3 pictures of his mother is too*].

Since this construction exhibits reconstruction properties and allows ellipsis of a constituent that is not LF identical with its antecedent, I conclude (35) does not represent a counterexample for the analysis presented in this paper.

3.4. A sequence of raising verbs

Aoun (1985) gives examples with two raising verbs one of which is *likely* and claims the indefinite subject cannot get the lower ("reconstructed") interpretation, (38). This appears to be problematic for the approach advanced here. If *likely* induces an LF phase, the indefinite should get interpreted in the lower clause regardless of how many additional raising verbs are merged into the structure.[8]

(38) *Some politician seems to be likely to address John's constituency.* (Aoun 1985: 84,
                                                                                          (12))

Although this objection seems valid, it appears that the problem comes in with the raising verb *seem*, which appears to behave strangely, rather from our understanding of *likely*. First notice that such a sentence is impossible with the indefinite in its supposed base position, (39a). There is nothing wrong with expletive occupying the topmost subject position when there is just one rising verb in the sentence, (39b,c).

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[7] This was pointed out to me by Thomas Leu.
[8] This was pointed out to me by Richard Larson.

(39) a. ?**There seems to be likely to be someone in the room.*   (Aoun 1985: 81, (1b))
    b. *There is likely to be someone in the room.*
    c. *There seems to be someone in the room.*

Although (39a) isn't completely bad, it is still significantly worse than other comparable examples. Regardless of (39a), what is really revealing about the weirdness of *seem* is that it is not the case with all raising verbs that they block reconstruction (or trigger antireconstruction a term used by Wurmbrand and Bobaljik 2004). Actually even if we put more than two in a sequence it seems that the subject indefinite can still get the non-specific/narrow scope interpretation, as is the case in (40).

(40) *A politician is **expected** [to give a speech at the convention]*
    *A politician **appears** [to **be likely** [to give a speech at the convention]]*
    *A politician **is expected** [to **appear** [to **be likely** [to give a speech at the convention]]]*
    *A politician **was believed** [to **be likely** [to give a speech at the convention]]*

Without any answer on the account of (38), I conclude that since some raising verbs follow predictions, there is something about *seem* we are yet to understand.

4. Conclusion

When the derivation reaches a phase (or the next higher phase) features do not necessarily get shipped to both interfaces (PF and LF), since a phase can be an exclusively PF or exclusively LF phase. Features not spelled out at partial/split phases continue the derivation and can check the uninterpretable *phi*-features of T. A DP has both LF and PF *phi*-features semantic/interpretable at LF, like the number feature of a DP, should be part of what is shipped to PF. Allowing split phases opens the door also for a syntactic derivation of quantifier raising and other covert movements.

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