Prepositions and scrambling: potential consequences for the architecture of language

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1   Introduction

The traditional view of phases starting from Chomsky is that Spell Out of a phase is an operation on the complement of the phase head; that is, if XP is a phase, and YP is the complement of X, then YP is sent to the interfaces. That means that the status of X, the phase head, in terms of such characteristics as uninterpretable features, is not a consideration when XP is spelled out.

An older analysis suggests that the status of phase heads matter at Spell Out. The phase head matters because it is not merely a phase head, but shares an origin with a larger class of syntactic objects that we will call "phase owners" when we describe them in more detail in this paper. Describing the nature of phase heads (or owners) is best done by describing the relations into which they enter.

There is a relationship between case assignment and the position of the assignee in the phase. Uriagereka [forthcoming] analyzes case assignment as happening always by agreement with a preposition, and he holds that prepositions emerge from more fundamental interactions in the grammar, some of which can be explained in phasal terms. We would expect, then, for these interactions to improve our characterizaton of phases.

We make use of one particular type of phenomenon: scrambling and preposition-stranding illuminate the kinds of operations required to license Spell Out of a phase. These kinds of operations require us to define the concept of the phase owner, which in turn implies that the status of the phase head is relevant to the operation of Spell Out.

2   Scrambling

2.1   Scrambling as a phenomenon

Here we briefly describe the characteristics of scrambling. Scrambling is not a single phenomenon. There are many types of scrambling phenomena, such as object shift, long-distance scrambling, and so on.

Here are some characteristics of scrambling from Svenonius [2000]

(1)   **Interpretation-driven:** Conditioned by interpretive, rather than morphological factors[1].

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[1]We often take this to mean discourse-related motivations such as topic and focus.

(2) **Optional.**

(3) **Limited:** they do not cross an overt c-commanding head.

Though there may be evidence for exceptions, Svenonius says that they hold for most object shift examples. We will focus primarily on the specifics of the object shift phenomenon that we see in languages like Japanese and German, which consists, on the surface, of the object preceding the subject.

2.2 Object shift and phases

Object shift in Norwegian and German, both OV languages, does not cross c-commanding heads. Objects seem to move with verb-raising. What process could make the movement of an NP dependent on the movement of a verb?

Svenonius cites Chomsky [1999] for a proposal. In Chomsky's view, there are language-specific rules that assign special interpretations to the left edge of a given phase—in particular, discourse-related rules. If the verb is raised out of v, this moves the edge of the phase leftward. Sometimes the leftmost DP/NP, at that point, may not comply with the discourse interpretation of that phase (it may have the wrong focus feature, for instance).

The system saves the derivation by inserting special features in v that allow movement of the DP/NP to Spec$v$P. Object shift is thus allowed by the Phase Impenetrability condition. ie, Spec$v$P is an escape hatch for object shift. (We'll call this insertion "feature hallucination". The use of this term will soon become clear.) We can extend this model into long-distance scramblng, particularly for cases like that in Japanese where the scrambled element ends up at the beginning of the matrix clause [Nemoto, 1999]:

(4) [Mary-ga   John$_i$-ni okutta tegami]$_j$-o kare$_i$-ga [dareka-ga   t$_j$ nusumiyomisita to]
     Mary-Nom John-to sent   letter-Acc he-Nom someone-Nom took-a-peek-at   that
     omotte iru (koto)
     thinking
     'The letter Mary wrote to John, he thinks someone took a peek at'

Svenonius' notes that Chomsky's account doesn't handle the fact that only DPs undergo object shift.

2.3 Spell Out and scrambling

Given an explanation for scrambling that involves the insertion of features, it is natural to ask what motivates this type of feature insertion, and Svenonius does so.

A relevant issue is that there are instances of scrambling that go all the way into the CP, perhaps in the manner of the articulated CP of Rizzi [1997]. An analysis like this permits us to presume that a sentence has a Topic-Comment form at LF. Then, using an earliness principle (perhaps that described in Epstein [1992]), overt movement can be motivated to satisfy this LF requirement. As mentioned for Norwegian and German above, V *in situ* prevents this, because V is a c-commanding head.

Svenonius provides a justification for this: the grammar allows V to go to Spell Out early if all its features have been satisfied—which is, in a sense, the very definition of V *in situ*.

Svenonius notes a major problem with this answer: Object Shift could never happen at all. The grammar would not be able to detect that a strong feature for Topic-Comment structure will be inserted later in the derivation, blocking Spell-Out of the phase and permitting V to move later on. But he has a solution: weaken the PIC with the following:

(5) 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.

We can call this a "busy waiter" Spell-Out procedure. Its main advantage is that it allows for further PF moves in order to satisfy topic-comment form at LF, even after the phase is technically "completed" by the standard of the original PIC. In other words, the "send back" process allows the waiter to add features to the phase, in the sense of feature hallucination.

Svenonius' answer has considerable advantages. First of all, it captures scrambling in terms of PF-requirements. If a phase can be Spelled Out at PF, any further scramblng is impossible. Secondly, it provids a justification for Chomsky's proposal that strong features are inserted in order to satisfy LF structure.

But it also has some disadvatages. Svenonious recognizes (as an advantage) that this implies that long-distance scrambling requires head-final complementization; in head-initial complementization, the complementizer is already in a c-commanding position, and no further moves are possible, if we follow his proposal. But what about languages like Latin that have long-distance scrambling with head-initial complementization? It also weakens the concept of the phase; do we need phases still? This is only a disadvantage, however, if we want to preserve other results that depend on the existence of phases [Uriagereka, forthcoming].

It is also important to note that his account suggests that Spell Out of the phase is dependent on the status of the phase head—ie, if it can move, the phase can't be Spelled Out. This is an observation that we exploit in our solution to the same problem.

2.4   Preposition-stranding and scrambling

Looking at other phenomena in language, we can see that there are things that have a similar PF characterization. The question is, do the variety of phenomena support Svenonius' account?

For instance, Brazilian Portuguese lacks preposition-stranding, except under sluicing.

(6) A Maria dançou com alguém, mas eu não lembro com quem.
    The Maria danced with someone, but I NEG remember with whom.

(7) A Maria dançou com alguém, mas eu não lembro quem.
    The Maria danced with someone, but I NEG remember who (she danced *with*).

The deleted component [Almeida, 2005] is not spelled out at PF, and consequently it can contain a c-commanding P head that has been apparently crossed by its constituents.

Another interesting situation is that of Latin. Latin has NP discontinuous constituency, except over a preposition. Once again, the Spelling Out of P prevents further activity.

But, interestingly, Old English actually has scrambling out of overt PP. From Kroch [2007]:

(8) & seofon ærendracan he him hæfde to asend (ACS Parker, 905)
and seven messengers he *him* had *to* sent

Though Latin has head-initial Ps and no scrambling inside PP and head-final V with scrambling inside, it also has, as above, head-initial complementizers and long-distance scrambling. Presumably, CP is spelled out when C is in a c-commanding position. It should be identical to the PP situation in Latin, wherein nothing is allowed beyond the c-commanding ambit of P. For these long-distance scrambling cases, why would the busy waiter send back the CP before Spell Out in order to allow the NPs to escape the CP?

Only some scrambling situations are fully accounted for under Svenonius' proposal. The send-back process captures a generalization that scrambling is a PF phenomenon, but it is still inadequate. In the following sections, we will propose that we need to expand or generalize the concept of the phase itself, rather than allow failed Spell Out attempts as in Svenonius' busy waiter process.

3   The "Prepositional Case Throughout" Hypothesis

3.1   The origin of case

We must briefly interrupt our discussion of scrambling to introduce a set of concepts and a hypothesis that will motivate our solution to the problem of scrambling and its place in language. This digression involves one proposed solution to an old and well-known question: whence case? There are very few firm generalizations about the role of case in the grammar. One of these more certain generalizations is that prepositions definitely assign case to nominals.

A standard configuration:

(9)
```
                          PP
                         /  \
                        P    …
                             |
                             NP
                            /  \
                           N    …
```

But there are far more instances of case assignment than this situation. What could those other instances have in common with this configuration? One possible story story is that case emerges from the dynamics of subject-predicate relations: that all such relations are mediated via prepositions, a hypothesis that we examine below.

3.2   Category typology

We first have to establish what a preposition is, before we discuss what other categories have in common with it. A familiar way to organize well-known categories (V, N, etc) is by +/-N an +/-V features. The ordinary classification is this:
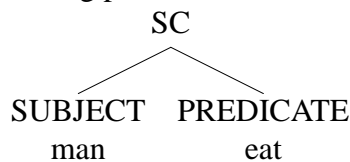
$$(10) \quad \begin{array}{ll} \text{A} & \text{[+N, +V]} \\ \text{N} & \text{[+N, -V]} \\ \text{V} & \text{[-N, +V]} \\ \text{P} & \text{[-N, -V]} \end{array}$$

If we accept this typology, then it is likely that most entries in the lexicon are adjectival: [+N, +V]. This requires a discussion of lexical semantics and acquisition that we do not have space for here. This does capture an intuition, however: P [-N, -V] is a closed class, and members of both N and V tend to have adjectival forms. Uriagereka suggests a learnability argument to explain this point.

3.3 Subject-predicate relations

With this typology, Uriagereka proposes a theory of compositional relations that has every predication emerge from a base-generated small clause. For example, take the sentence "The man eats". It contains a subject—"man"—and a predicate—"eat".

(11) Starting point for "The man eats":

```
              SC
             /  \
        SUBJECT   PREDICATE
          man        eat
```

Producing this structure that reflects the relationship between these concepts is the first step in the derivation of "The man eats." What remains for us to describe, then, is how Uriagereka finds that these small-clause predications can be realized as sentences.
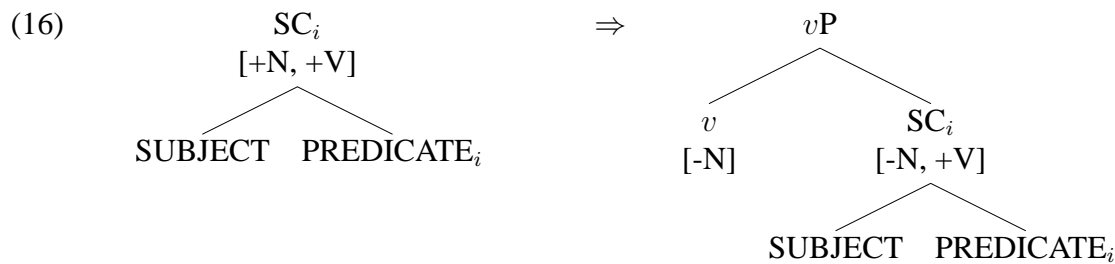
3.4 Anticategories

So how does this system assemble a predication structure into a sentence? There needs to be an initial, "symmetry breaking" kick-off step. We can derive this step from Distributive Morphology. Distributive Morphology starts from the assumption that small-clause predications have no types. Then it uses special "morphemes"—that we will call n and v—to turn these predications into NPs and VPs. These are their definitions and roles:

(12) n is an "antiverbal" and nominalizes a predicate.

(13) v is an "antiverbal" and verbalizes a predicate.

Since everything starts off with the character of an adjective, as above, we say that small-clause predications have the type [+N, +V]. Given the roles of n and v, we can describe them in terms of features and their interactions with small clauses:

(14) n provides a -V feature (to obtain [+N, -V]).

(15) v provides a -N feature (to obtain [-N, +V]).

This happens via merging n or v into the small clause:

(16)

$$\text{SC}_i \quad [+\text{N}, +\text{V}] \qquad \Rightarrow \qquad v\text{P}$$

```
(16)        SC_i                    ⇒           vP
         [+N, +V]                            /      \
         /       \                          v        SC_i
   SUBJECT   PREDICATE_i              [-N]      [-N, +V]
                                                /        \
                                          SUBJECT    PREDICATE_i
```

And thence we obtain a vP from a small clause.

3.5 Feature collisions and release

You may legitimately wonder how merging v with [+N, +V] results in [-N, +V]. Uriagereka provides a "feature collision" mechanism. He writes it as:

(17)   "When category X with features [α F_i, +/-F'] combines with anti-category Y with feature [- α F_j], then category X becomes [- α F_j] and feature α F_i gets released.

More formally, we can express this in terms of the MERGE operator:

(18)   MERGE([+X, +Y], [-X]) $\Rightarrow$ [-X, +Y], +X

So, for example, MERGE([+N, +V], [-N]) will result in [-N, +V]—the type of a verb phrase—and a +N. Thus, we are left with a question: what happened to the +N, then? It turns out that the answer might lie in case assignment, the very question we were trying to answer in this section.
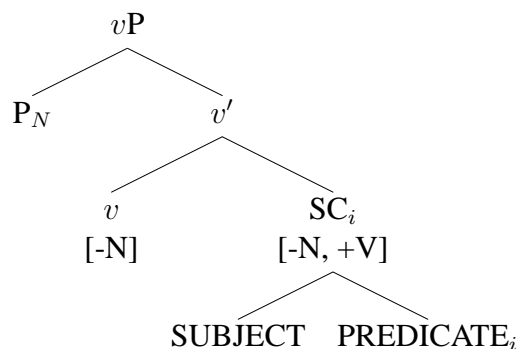
3.6 Case assignment

We could merely throw the extra +N away. If we were merely discussing a formal, logical system, we would find that there is no cost to losing an object whose underlying character is merely a logical representation. But Uriagereka is not willing to assume that this is merely a formal system with throwaway representations. Instead, he asks us to accept a final and important leap of faith in the hope that this can be cashed out later in unified explanations for diverse syntactic phenomena.

(19)   *Conservation of features.*
       Every feature must survive to the end of the derivation to avoid derivational cancellation.

This way, we can explore what happens when we must somehow reincorporate the +N into the derivation: the stray +N feature must be reanalyzed as a category. We already have a mechanism to provide features to objects that require them, feature hallucination. We then reanalyze +N as the least featureful category, [-N, -V] (the learnability argument does not apply to formal objects arising in the system). This happens to be the features of P. This kind of preposition we denote as P_N, as it is derived from a +N feature. It merges into the structure, and we get the following:

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(20)

$$vP$$

```
              vP
             /  \
           P_N   v'
                /  \
               v    SC_i
             [-N]  [-N, +V]
                    /    \
              SUBJECT   PREDICATE_i
```

The original feature collision allowed the system to turn the small clause into a vP, but saved the stray feature by feature hallucination; the new object discharges its features on merging with the vP via Agree (Probe-Goal), conferring case on the subject of the small clause[2].

In constructing a vP this way, it should be noted that we are thus provided the construction of one of the two types of phases.
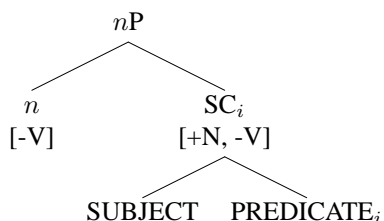
3.7   Similarities

Uriagereka's motivations for proposing this kind of a system are slightly different from ours. He uses this system to establish a typology of cases depending on the phase. vP gives accusative/Core Case, CP gives Final Case (usu. nominative or accusative-under-ECM), and so on. The intuition for this is based on that idea that if we can unify case assignment under prepositions, then we can expect similar behaviour in other case assigning situations. CP and vP are phase heads; they
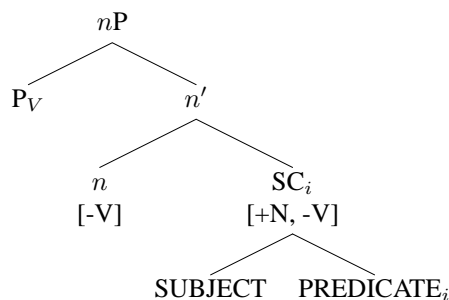
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[2]Actually, the subject of the small clause will sometimes (usually) be an true NP, itself generated via a small clause relation. These emerge from collisions between small clauses and n ([-N]) elements. These set up concord relations between a noun and its adjuncts, and is capped by a quantificational element. That looks like this:

(1)

```
              nP
             /  \
            n    SC_i
          [-V]  [+N, -V]
                 /    \
           SUBJECT   PREDICATE_i
```

Which releases a +V feature which becomes a P_V as in

(2)

```
              nP
             /  \
           P_V   n'
                /  \
               n    SC_i
             [-V]  [+N, -V]
                    /    \
              SUBJECT   PREDICATE_i
```

Uriagereka suggests that P_V is a convenient culprit for adjectival concord.

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should demonstrate certain similarities. That is, as subjects of vPs are accusative, subjects of CPs are canonically nominative.

As we noted above, PP also assigns case, just as vP and CP assign case. CP and PP demonstrate some fairly obvious similarities. From English:

(21) "I got it for him."

(22) "for him to talk. . . " (ECM, but still interesting.)

In order to establish this similarity, however, it is not merely enough to discover that they sometimes use similar words and assign similar case. Other necessary evidence lies in their status as islands for movement. If they block or permit extraction of material under them in a similar way, then we can more easily make the case that they are actually the same object in some fundamental way.

4 Prepositions, case, and extraction
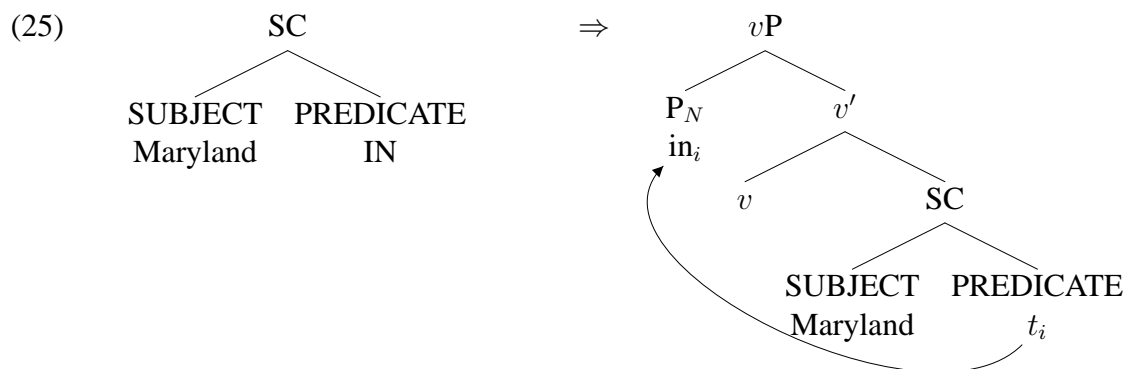
4.1 Proposal

Our original goal was to demonstrate the relevance of the status of the phase head to the status of the phase itself. We described an overall family of phenomena that are related to the information structure underlying the phase—scrambling and, in particular, object shift. Then we discussed a proposal by Uriagereka that related the structure of the phase to its case assignment properties; of special note are the similarities between CP and vP as phase heads and case assigners and, more importtnatly, the potential that CP and PP may also be similar in some fundmantal way. Here, we establish what that way may be via our main proposal:

(23) All [-N, -V] elements emerge from collisions–including overt P.

(24) Overt P also emerges from small clauses and collides with v.

For example:

(25)

SC $\Rightarrow$ vP

SUBJECT PREDICATE
Maryland IN

P_N v'
in_i

v SC

SUBJECT PREDICATE
Maryland t_i

We are thus treating "in" as arising in a predicate in the manner one also expects for the origin of a verb. We capture yet another linguistic intuition in this manner: that "in"-ness is a state that is conferred by the subject "Maryland", roughly analogous to the relationship between "eat" and

"man" in "The man eats". It head-adjoins to v to form a PP. If it were "eats" instead of "in", it would form a VP. Other features of P and V heads ultimately make the difference between them.

Furthermore,

(26) The hallucination of the P_N is the point at which discourse-related features are also hallucinated.

(27) Merge of a P_N is the end of a phase.

This allows us to accomodate object shift out of a PP—it is the same as object shift out of a vP. Do we need to accomodate object shift out of a PP? The some of the instances of preposition-stranding discussed above suggest that we do. We discuss the mechanics of this below.

Also, should the predicate *in* move to the P or to the v? If it moves to something other than P, then we can have a number of fishy movements from v to random other T and so on. Such prepositions also never agree in person or number with the subject either. That *in* adjoins to P, however, is thus merely a description of the fact that it does not share the agreement characteristics of V; but in the next section, we describe in further detail some facts about agreement that suggest that this can be explained by appealing to more fundamental characteristics of the system.

By the same token, a full verb predicate like "eats" would move to adjoin with vP, enabling it to adjoint to other heads like T and so on and thus display the agreement characteristics that V normally displays. So we can divide predicates into two types: "heavyweight" and "lightweight." And their fate determines the manner in which the phase is headed. From this, we can define a new concept:

(28) *Phase owner*
A phase owner is a predicate of s small clause. It adjoins to the phase head if it is "heavyweight" (like *eat*) or to the phase edge/spec if it is "lightweight" (like IN).
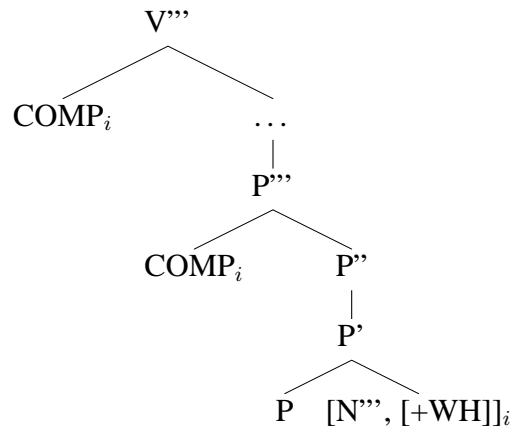
4.2   PF and extraction

Perhaps another way of discerning where the "landing site" of a phase owner happens to be is to ask the question: What allows extraction from a phase? With the above framework, this just reduces to the question: what allows preposition-standing or other general, unmotivated extractions like long-distance scrambling? van Riemsdijk [1978] gives an escape hatch story for preposition-stranding. We can extend this account to our version of phases, including to CP.

The analyses below suggest that the fate of phase owners is relevant to the possibility of Spell Out. The positions of the phase owners, in either specifier or head, affects the ability to extract items from within the phase before the phase is finally sent to PF.
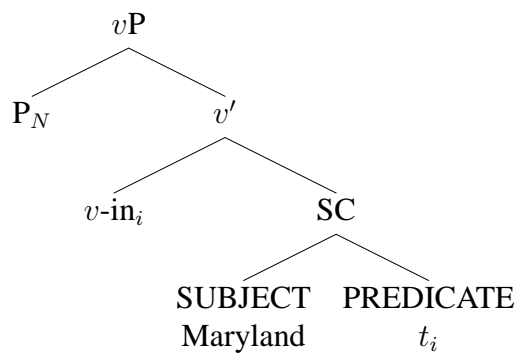
4.3   Preposition-stranding

We mentioned preposition-stranding in several places above. Now we ask: how might preposition stranding fit into our framework? Using a somewhat older framework, Van Riemsdijk proposes this kind of structure for preposition-stranding for wh-movement.

(29)

$$V''' \quad
\begin{array}{c}
\text{COMP}_i \qquad \cdots \\
\qquad\qquad | \\
\qquad\qquad P''' \\
\qquad\text{COMP}_i \quad P'' \\
\qquad\qquad\qquad | \\
\qquad\qquad\qquad P' \\
\qquad\qquad P \quad [\text{N}''', [+\text{WH}]]_i
\end{array}$$

In other words, Van Riemsdijk's proposal requires successive-cyclic movement through SpecPP. In the framework we describe in this work, this looks like:

(30)

$$v\text{P}$$
$$\text{P}_N \qquad v'$$
$$v\text{-in}_i \qquad \text{SC}$$
$$\text{SUBJECT} \quad \text{PREDICATE}$$
$$\text{Maryland} \qquad t_i$$

This allows the P to act as an escape hatch, like van Riemsdijk's COMP. (We will discuss why *in* is realized in the head further below, but we set this issue aside simply to justify the escape hatch itself.)

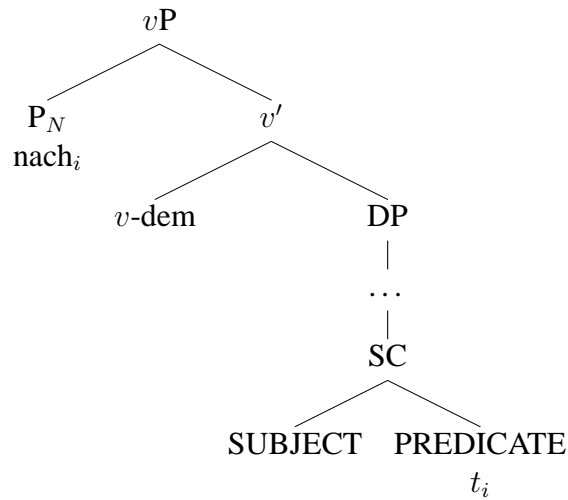Most languages do not allow preposition-stranding, so why do they not have a SpecPP escape hatch available to them? Perhaps the answer lies with languages with overt D, such as German and Ancient Greek.

(31) German: *aus dem* (away from the-DAT)

(32) Ancient Greek: *pros ton* (toward the-ACC)

Neither of these languages have any genuine preposition-stranding. How does this look in this framework?
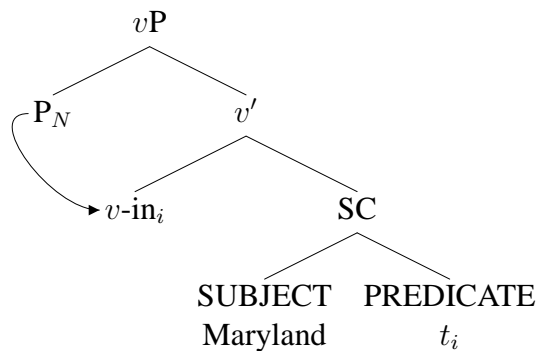
(33)

```
                        vP
                   ╱         ╲
               P_N            v′
              nach_i        ╱    ╲
                       v-dem      DP
                                   │
                                  ...
                                   │
                                  SC
                               ╱     ╲
                        SUBJECT      PREDICATE
                                        t_i
```

The *dem* ends up in v as both the head of a concord chain bearing ϕ-features and the recipient of spec-head agreement obtaining case, a D-to-v raising. It is thus trapped, as is its VP.
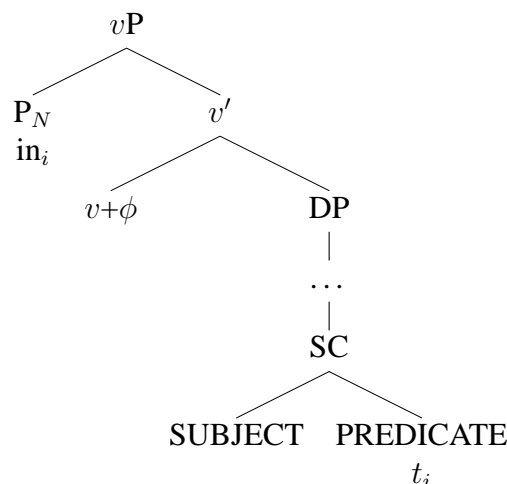
How does this work in preposition-stranding languages? When the v is empty, it is completely devoid of anything but its [-N]. The *in* is pronounced in the head, leaving a PF escape hatch at the P, as above (repeated):

(34)

```
                       vP
                   ╱        ╲
               P_N           v′
                           ╱    ╲
                    v-in_i       SC
                              ╱      ╲
                        SUBJECT     PREDICATE
                        Maryland       t_i
```

This sort of operation is not unprecedented. Brody [1999], in a discussion of null subjects and clitic climbing, suggests that specifiers can get cliticized onto heads if all their features agree with their respective heads. Here, we say that this is blocked when the head participates in some other agreement relation. So why is preposition-stranding unavailable in languages like Latin with no overt D? This may have to do with agreement through a silent D that is propagated throughout the NP. This D carries the ϕ-features of the concord.

(35)

```
                        vP
              ┌─────────┴─────────┐
             P_N                  v′
             in_i          ┌──────┴──────┐
                         v+φ            DP
                                         │
                                        ...
                                         │
                                        SC
                                   ┌─────┴─────┐
                               SUBJECT     PREDICATE
                                               t_i
```

Another way of thinking about this is via the weight metaphor. The lightweight preposition predicate "sinks" into the head when the head is fully empty. But when a determiner or the top of a concord chain already occupies the head, the downward cliticization is impossible—the preposition does not share those features.

Preposition-stranding may be motivated by features that are different from those of object shift, but the structural geometry and derivation of preposition-stranding does not appear to differ greatly from that of object shift. Granted, verbal predicates tend to become V heads, not SpecVP, but the motivation for object shift comes from the information structure-related feature hallucination allowed by the language.
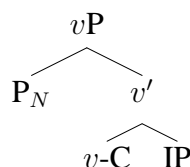
4.4   CP and escape hatches

At this point, we can show the similarities that CP has to PP and vP. Subordinate clauses allow long-distance scrambling in Latin. From [Kessler, 1995]:

(36)   Tametsi   *tu*   scio   *quam sis*
       Although you-NOM-SG know-IND-PRES-1SG how   are-SUBJ-PRES-2SG
       curiosus
       interested-NOM-SG
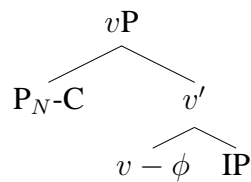   'Although I know how interested you are' (Caelius at Cicero, Fam 8.1.1)

If *quam* is a C head, then we have a case for an escape hatch. Indeed, complementizers in subordinate clauses in Latin do not need to enter a concord relation with anything side the clause. Then this matches up with both the object shift situation and the preposition-stranding situation in terms of geometry; and given the lexical overlap in some languages between P and C, we can propose this analysis of CP as vP:

(37)

```
                vP
           ┌────┴────┐
          P_N        v′
                 ┌───┴───┐
               v-C      IP
```

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Complement relative clauses have complementizers that agree with the embedded NP. These would be in SpecCP (= Spec$v$P)for agreement with the NP, and hence, there would be no escape hatch.

(38)

$$
\begin{array}{c}
v\text{P} \\
\diagup \quad \diagdown \\
\text{P}_N\text{-C} \qquad v' \\
\qquad \diagup \ \diagdown \\
\qquad v-\phi \quad \text{IP}
\end{array}
$$

Agreement with the $\phi - feature$ results in a situation similar to that of PPs that do not allow preposition stranding. An example of something that forbids extraction:

(39) amo   leonem   qui   parva   animalia   consumit
      love-1sg lion-ACC who-NOM small-ACC animals-ACC eats-3sg

      'I love the lion who eats small animals'

qui takes nominative case as the subject of the relative clause. The relative clause is an island. In this way, we can establish a common framework for the structure of CP and PP as phases.

4.5 Preposition-stranding asymmetries

There is at least one empirical obstacle to this manner of analysis, a complement-adjunct asymmetry in English. It turns out that one cannot strand a preposition from an adjunct, but one can from a complement PP.

(40) a. I spoke with that woman.
      b. Who did you speak with?
      c. I spoke with great reluctance.
      d. *What did you speak with [manner]?

This sort of thing presents a problem for a van Riemsdijkian "escape-hatch" theory of P—what is the difference between adjunct and complement PP that one has an escape hatch but the other does not.

One way of dealing with this problem is to make use of the reanalysis story from Hornstein and Weinberg [1981]:

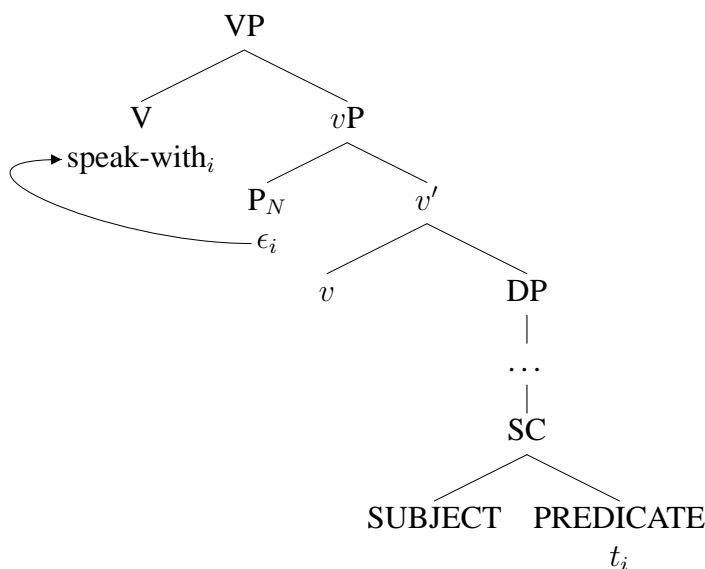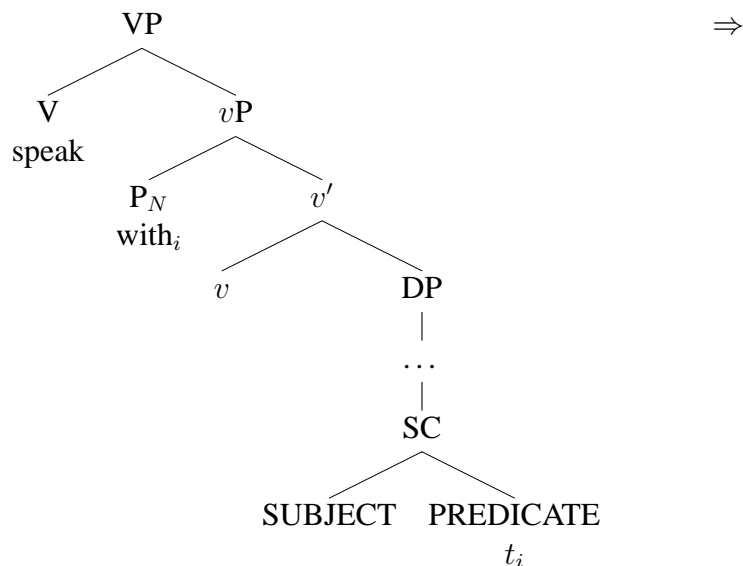(41) V [PP [P NP]
      ] $\Rightarrow$ [V+P NP]

In this story, the head of a complement PP is simply absorbed into the V head. Then there is no escape hatch issue, as there is nothing from which to escape[3].

There are problems with the reanalysis analysis, some of which have been noted by Martin [2003]. These include, in particular, multiple PP complements, a situation in which reanalysis seems unlikely. Instead, he uses a Cinque-style tree of very many projections to explain the asymmetry instead.

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[3]Even van Riemsdijk seems to use reanalysis for certain kinds of phenomena.

A solution lies in rescuing both approaches together: we use reanalysis by pulling the phase owner out of the phase. That creates an escape-hatch through which items can move while complying with the requirements of PF.

(42)

```
                              VP                                    ⇒
                            /    \
                           V      vP
                         speak   /  \
                               P_N    v'
                              with_i  /  \
                                     v    DP
                                          |
                                          ⋯
                                          |
                                          SC
                                         /  \
                                    SUBJECT  PREDICATE
                                                t_i
```

```
              VP
            /    \
           V      vP
    speak-with_i /  \
               P_N    v'
               ε_i   /  \
                    v    DP
                         |
                         ⋯
                         |
                         SC
                        /  \
                   SUBJECT  PREDICATE
                               t_i
```

This is effectively reanalysis by predication relations. "speak with" is hallucinated back into a single small clause predicate. There is evidence for this kind of escape hatch-creating reanalysis from Russian. Russian has an asymmetry between indicative and subjective complementizers, *čto* vs. *čtoby*). The latter allows long-distance wh-movement over the complementizer [Glushan, 2006]. We can say that *čtoby* is pulled up by the same process as the complement PPs in English: it takes the *-by* clitic from the matrix clause in order to achieve its status as a subjunctive complementizer. Given this, the adjunct/complement asymmetry for PPs actually reinforces the similarity between CP and PP.

5   Final Remarks

For the above extraction phenomena, something motivates a movement for the phase owner before the phase is PF-evaluated. Dynamics of this can be derived from the emergence of P in every phase and the unfolding of a phase given the arrival of P. This allows us to unify the phases under a single analysis that begins with a small clause. This unification holds if PP is a phase. But PP shares many of the extraction characteristics of the CP and vP phases, suggesting that it too is a Spell Out-related object and subject to the same requirements for convergence at PF.

There were a few leaps of faith, particularly from Uriagereka, that one must accept in order to make the logic of this unification work. But the fact that these similarities can be found suggests at least that the feature hallucination and collision mechanism is a useful model for intercategorial interactions and that conservation of features is motivated by the facts.

Furthermore, it happens that this unification also allows us to explain object shift in a less *ad hoc* manner than Svenonius' proposed busy waiter Spell Out scheme. Rather than send the phase back for further tweaking until the features are satisfied, instead the features in question are hallucinated at the point when they are needed—when the vP is completed in the MERGE of P_N. The necessary hallucination of P_N provides the "port of entry" for other hallucinated features. Perhaps that is the constraint: without the forced hallucination of P_N, no other features can be hallucinated, including the information structure-related features that motivate object shift.

Motivating this analysis further requires investigation into a number of things, in particular the semantics of predicates and the proposed feature typology of the fundmental categories A, N, V, and P. In the former case, we need a more formal characterization of lightweight and heavyweight predications in order to discern the nature of the distinction between CP and PP on the one hand and the V-containing vP on the other. The latter case will require investigation into the structure of the features in the lexicon, a program already under way in the case of Distributive Morphology.

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