DERIVING CASE THEORY

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Abstract

Case Theory has been central to predicting where DPs occur in a clause. The idea is that (i) a DP is assigned Case by a local [-N] head; (ii) every DP must have Case; (iii) Case may be abstract, which requires adjacency with the [-N] head, or morphological, which does not require adjacency. In this paper we note problems with each of these assumptions, and suggest an entirely different approach based on labeling of structures (Chomsky 2013). This approach not only accounts for the typical Case Theoretic structures, but also the problematic cases we point out. Our account also extends to areas of the grammar that are outside the purview of Case Theory, such as wh-questions, the expletive construction, and topicalization. We also show that the [-N]/[+N] distinction Vergnaud drew for case assignment is a reflection of a structural difference between these two groups of lexical categories (Emonds 1985) that is consistent with the labeling approach we propose.

1. Introduction

Jean-Roger Vergnaud's 1977 letter to Noam Chomsky and Howard Lasnik led to one of the most important advances in linguistic theory. Proposing the idea that case marking occurs across all languages, including those that do not exhibit overt case marking, he postulated that NPs receive case marking in particular positions associated

with certain heads. This became one of the fundamental principles of universal grammar, called Case Theory, and it allowed us to predict precisely where NPs occur in a structure; and, equally importantly, when and to where it must move should it lack case marking in its original position. It was the first time in generative grammar that movement was given a clear syntactic motivation. In this article, we will build on the work of Vergnaud and others that followed. We will show that the approach defined by Case Theory cannot account for certain occurrences of case marking. There are two types of issues we will take up, one having to do with evidence that morphological case marking has a different source than the [-N] head that Vergnaud postulated. For this point, we will look at the so-called differential object marking in languages such as Turkish, where we will see that Abstract Case and morphological case cannot be related, which goes against Vergnaud's original idea that the two are a manifestation of the basic notion of Case. In addition, drawing on the work of Marantz (1991) and Baker and Vinokurova (2010), we will see data from Icelandic and Sakha in which particular morphological cases are not associated with any specific head, suggesting that morphological case marking has a different source than some head assigner. For the second issue, we will show an instance in which an NP clearly is without any sort of case marking, thus questioning the basic precept of Case Theory that every NP must have some sort of case marking.

Taking all this in, we will propose that a fundamentally different approach based on the theory of labeling (Chomsky 2013) not only accounts for the problematic cases, but the proposed approach has consequences for other areas of the grammar such as the expletive construction, the wh-construction, and the topic construction, which are outside the purview of Case Theory.

2. Case Theory

One of the most significant pieces of scholarship in generative grammar, one that has had an enormous and lasting impact on the formation of linguistic theory, came in the form not of a journal article or a book but in a letter. In 1977, Jean-Roger Vergnaud wrote to Noam Chomsky and Howard Lasnik in which he developed a theory that predicted where nominal expressions may occur in a sentence. Drawing on observations that in a language such as Latin, one finds specific case declensions on nominals that are fully predicable by position, Vergnaud argued that nominals must occur in some local relationship to certain heads that are associated with particular case markers. For example, a noun phrase (NP) may occur next to a verb (V) or a preposition (P) because V and P dispense accusative case to the NP. This is clearly seen in Latin.

(1) a. [$_{VP}$ scripsit libr-*um*]

            wrote   book-ACC

      b. [$_{PP}$ ad Sin-*a*]

            to China-ACC

This view of case marking as essentially a purely syntactic element for licensing NPs broke away from previous studies that considered case marking as closely related to semantic roles such as agent and patient (Fillmore 1968). Other case markers Vergnaud dealt with included genitive and nominative case markers.

As often happens on the way to a deep theoretical insight, Vergnaud took a step that combined the obvious with something that was entirely nonobvious. He suggested that whatever mechanism that is at work to assign morphological case in languages such as Latin is also operative in a language such as English, which does not exhibit overt case marking except in the narrow and impoverished domain of pronouns. He proposed what later became the general format for case assignment.

(2)   .. [$_\alpha$... NP ...] ...

   α is the first branching node above NP;

   NP is ungrammatical unless (i) α is the domain of [-N] or (ii) α is adjacent to   and

in the domain of [-N].

"[-N]" is in reference to feature decomposition for lexical categories (Chomsky 1970).

(3)   +/-V, +/-N

   V: +V, -N

   P: -V, -N

   N: -V, +N

   A: +V, +A

As shown [-N] cross-references V and P and as such V and P are the lexical categories that

license Case. Returning to (2), the first statement, that α is the domain of [-N], is obvious.

This refers to case marking of accusative, genitive, and nominative cases, and, crucially, is

argued to hold across all languages, even those that do not show morphological case

marking. Thus, in the phrase, [$_{VP}$ *read books*], *books* is immediately dominated by VP,

which marks the domain of the case assigner, V. Thus, *books* is assigned accusative case

although there is no overt marking for the case marker. The second environment in (2),

where α is adjacent to and in the domain of [-N], refers to structures in which a preposition

licenses a subject in an infinitive clause.

(4)   I wish [for [Mary to go]]

Given that the lower clause lacks tense, the nominative case cannot be assigned to *Mary*.

Instead, the preposition *for* appears as the [-N] element and α, which in this case is TP, is

adjacent to and is in the domain of the [-N] category, P. We will take this second

possibility for case marking when we look at the expletive construction.

   These observations led to the formulation of Case Filter.

(5)   Case Filter (Chomsky 1980, 1981)

       Every NP must have case.

The Case Filter together with the mechanism for case assignment took on the title, Case

Theory (Chomsky 1980), and it formed one of the fundamental principles of the GB

theory. Even today, after most of the so-called universal principles of GB have been set

aside, Case Theory continues to be the leading explanation for the distribution of nominal

phrases in sentences.

       Case Theory not only predicts where NPs can externally merge in syntax, but it has

another equally important function: it predicts when and to where NPs must move. The

earliest works on generative linguistics (Chomsky 1956, 1957) postulated movement of

NPs, which marked the start of the generative-transformational theory. Indeed, when one

looks at generative grammar at various stages of development, from the standard theory to

the extended standard theory, the GB theory, and today, the minimalist program,

movement is the single most important phenomenon that is taken up.[1] While its existence

has been recognized from early on, motivation for why it occurs was not even an issue

until Case Theory came along to show that its occurrence, both the timing and the landing

site, can be predicted.

(6)   a.   The teacher praised the student.

       b.   *The teacher was praised the student.

       c.   The student was praised ___ by the teacher.

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[1]In theories such as HPSG in which movement is not postulated, something comparable

occurs, such as feature percolation.

Passivization deprives the ability to assign accusative case, leaving *the student* in (b) without case, leading to violation of the Case Filter. In (c), *the student* has moved to the subject position, where it is able to receive nominative case, demonstrating that case is the driving force for this movement. Similar case-driven movement is found in the raising construction.

(7)   a.   It seems (that) Mary is happy today.

       b.   *Mary seems (that) ___ is happy today.

       c.   Mary seems ___ to be happy today.

In (7a), *Mary* is in a position to receive the nominative case, being that it is in a tensed clause. (7b) shows that moving *Mary* to another case position is unmotivated, thus ungrammatical, because it already has Case. (7c) shows that *Mary* fails to receive case in the infinitival clause, which motivates its movement to the matrix subject position where it receives the nominative case.

We find the same case-driven movement in constructions that contain an unaccusative verb (Perlmutter 1978; Burzio 1981, 1986). Intransitive verbs have a subject that is either an agent (*laugh, sleep*) or a patient (*open, arrive*). Those with an agentive subject are called unergative verbs, while those with a patient are called unaccusative verbs. While the subject of unergative verbs begins in the subject position, the subject of unaccusative verbs begins in the object position. Because this is an intransitive verb, no accusative case is assigned, hence the underlying object must move to the subject position to receive case, just as we saw for passive and raising constructions.

(8)   The door opened ___.

One piece of evidence for this movement comes from stranding of numeral quantifier in Japanese (Miyagawa 1989). As shown, a subject-oriented numeral quantifier cannot be stranded after the object (Haig 1980, Kuroda 1980).

(9) a. Doroboo-ga   san-nin   kuruma-o   nusunda.

      thief-NOM   3-CL   car-ACC   stole

      'Three thieves stole a car.'

   b. *Doroboo-ga   kuruma-o   san-nin   nusunda.

      thief-NOM   car-ACC   3-CL   stole

Such stranding is possible under passivization because movement is involved and the copy

left by movement fulfills the locality requirement for the numeral quantifier (Ueda 1986,

Miyagawa 1989).

(10) Kurma-ga   doroboo-ni ____   san-dai   nusum-are-ta.

     car-NOM   thief-by   3-CL   steal.PASS.PST

     'Three cars were stolen by a thief.'

Similarly, a subject-oriented numeral quantifier cannot be stranded with unergative verbs,

but such stranding is possible with unaccusative verbs (Miyagawa 1989).[2]

(11) a. *Tomodati-ga   Tookyoo-de   san-nin   atta.

      friend- NOM   Tokyo-in   3-CL   met

      'Three friends met in Tokyo.'

   b. Tomodatio-ga   ofisu-ni ____   san-nin   kita.

      friend- NOM   office-to   3-CL   came

      'Three friends came to the office.'

   While Vergnaud considered both morphological case marking and the so-called

"abstract" case marking found in languages such as English to be the same, Stowell (1981)

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[2]See Miyagawa (2012, 2017) for discussion of some counterexamples to the observation

that the subject-oriented numeral quantifier cannot be stranded after the object and similar

VP-internal elements.

makes an important observation to distinguish them. He notes that there is a strict

adjacency condition on the assignment of abstract case, while morphologically-cased NPs

are freer to occur away from the case assigner.

(12) a.   Mary bought a book yesterday.

      b.   *Mary bought yesterday a book.

(13) Mary-wa hon-o   kinoo   katta. (Japanese)

      Mary-TOP book-ACC yesterday bought

A typical view of morphological case marking is that once it is assigned in a similar way as

abstract case, the morphological-cased NP is no longer obliged to stay in its original

position. But an abstract cased NP must stay adjacent to the case assigner in order to

continue to receive the case from the case assigner. Below, we will see that there are other

differences between morphological and abstract forms of case that call into question the

idea that the two have the same source.

3. Challenges to Case Theory

In this section, we take empirical challenges to Case Theory. We will look at three

phenomena, differential object marking, morphological case marking in Icelandic and

Sakha, and case-drop in Japanese. We will see that Case Theory as formulated in

generative grammar cannot easily account for them: in the case of DOM, there is a clear

disconnect between abstract case and morphological case marking, throwing into doubt

that these two types of case markings originate from the same source. In the case of data

from Icelandic (Marantz 1991) and Sakha (Baker and Vinokurova 2010), the original

observation by Vergnaud between heads and accusative case marking breaks down: we

will see that accusative case marking is not dependent on some specific head for

assignment. Finally, we will look at case-drop in Japanese, where we will see an instance

in which an NP occurs without any kind of case marking, morphological or abstract, thereby questioning the basic assumption of Case Theory that every NP must have some sort of case marking. These problems open the possibility of setting aside Case Theory and the notion of case and point to seeking an entirely different approach to the distribution of NPs. Henceforth, we will use "DP" instead of "NP" to reflect the updated label for nominal phrases (Abney 1987). We will also use upper-case "Case" when referring to case marking in general, either morphological or abstract case.

3.1. Differential object marking

Many languages mark the object differentially depending on its interpretation and position. Turkish shows this differential object marking clearly: the object may occur bare, or it may be accompanied by morphological accusative case marking.

(14) a.   Hasan bir kitap aldı.

             Hasan a   book bought

             'Hasan bought a book'

      b.   Hasan bir kitab-ı   aldı.

             Hasan one book-ACC bought

             'Hasan bought one book'

The bare object differs in interpretation from the case-marked one; when bare, the object is interpreted as indefinite (or nonspecific), while the case-marked object receives a definite (or specific) interpretation (e.g., von Heusinger and Kornfilt 2005). The difference between these two objects is not only in interpretation, but also in their position in the structure. The bare object cannot occur away from the verb, while the case-marked one may do so.

(15) a.   *Bir kitap Hasan aldı.

             a   book Hasan bought

‘Hasan bought a book’

b.   Bir kitab-ı   Hasan aldı.

one book-ACC Hasan bought

In fact, there is evidence that even in the basic SOV word order, the two objects occupy different positions: the bare object occurs in the original complement position of the verb, while the case-marked object occurs higher, outside the VP (e.g., Kennelly 1994, Zidani-Eroğlu 1997, Kelepir 2001). We can see this by the fact that a case-marked object must occur before a VP adverb such as "completely," while the bare object occurs to the right of such an adverb.

(16) a.   Hasan kitab-ı   tamamen okudu.

Hasan book-ACC   completely read

‘Hasan read the book completely.’

b. *Hasan tamamen   kitab-ı   okudu.

Hasan   completely book-ACC read

(17) Hasan tamamen   kitap okudu.

Hasan completely book read

‘Hasan read a book completely.’

Kelepir (2001) argues that case-marked objects "move above the VP to check their case features" and this gives rise to the presuppositional reading of specific/definite (Diesing 1992, Kennelly 1994, Zidani-Eroğlu 1997). We find similar differences in interpretation and position in other DOM languages (Aissen 2003).

The analysis Kelepir (2001) suggests for the cased DP to move outside of the VP is correct; in fact the DP is moving outside of vP if we assume that the adverb "completely" occurs above the vP (REFERENCE). But on this view, it isn't clear what licenses the morphological accusative case marking. The standard analysis under Case Theory is that

accusative case is assigned by the small v, but if the cased DP moves out of vP, the morphological case is not being licensed by this head, in fact, there is no appropriate head to license it.

An alternative view is that the object DP receives abstract case under adjacency as Stowell (1981) argued, and the morphological case marker is assigned to this DP on top of the abstract case, being licensed by v. The problem here is two-fold. First, the morphological case appears to be superfluous, thus uneconomical. Second, even if we could get around this problem with economy, what forces it to move out of its original position and out of vP?

3.2. Dependent Case

We have seen two manifestations of Case, abstract case and morphological case. Under Case Theory, these two forms of Case should be licensed in a uniform manner, with the only exception that morphological case may, or must, be nonadjacent to the head that licenses it. However, there are observations in the literature that indicate that the morphological case system works differently from the abstract case system altogether. Specifically, in the so-called dependent-case approach (Marantz 1991), morphological case marking is assigned according to relations among nominals within a domain. The following is a partial summary of this approach for NOM-ACC languages.

(18)   Dependent case (Marantz 1991)

    a.   NOM is the morphology found on the highest non-case-marked nominal in a clause in which V has entered a relationship with T.

    b.   ACC case is the morphology found on a nominal within a domain in which a higher nominal has received NOM.

In many instances, the dependent-case approach makes the same empirical predictions about the distribution of nominative and accusative case markers as the head-assigning approach found in Case Theory. However, there are instances where the two approaches part ways, where we see an advantage to the dependent-case approach. For example, while Icelandic normally has the nominative-accusative case pattern, the following is an exception (Marantz 1991).

(19) *Eg tel   [henni   hafa   alltaf   þótt   [Olafur   leiðinlegur]]*

    I believe her-DAT to-have always thought Olaf-NOM boring-NOM

    'I believe her to have always thought Olaf boring.'

Under normal circumstance *Olafur* would receive the accusative case, but in this example, the higher unmarked nominal *henna* 'her' has the dative case, thus *Olafur* becomes the highest (first) unmarked nominal, and it receives the nominative case.

    Sakha, like Turkish and unlike English, has Exceptional Case Marking across tensed clauses. This is the construction in which the lower subject receives accusative case (in English, across a nontensed clause boundary: I believe *him* to be honest) (Baker and Vinokurova 2010).

(20) a.   Min ehigi/ehigi-ni bügün kyaj-yax-xyt   dien erem-mit-im.

        I   you/you-ACC today win-FUT-2pS   that hope-PAST-1sS

        'I hoped you would win today.'

    b.   Min ehigi/ehigi-ni bügün kyaj-byk-kyt-yn   ihit-ti-im.

        I   you/you-ACC today win-PTPL-2pP-ACC heard-PAST-1sS

        'I heard that you won today.'

While the fact that the ECM marking takes place across a tensed boundary is surprising, the type of main verb ('hope', 'hear') that assigns accusative case to the lower subject is not surprising. However, the following "ECM" cases are unexpected.

(21) a.   Keskil Aisen-y   [kel-bet   dien] xomoj-do.

Keskil Aisen-ACC come-NEG.AOR.3sS that become.sad-PAST.3sS

'Keskil became sad that Aisen is not coming.'

b.   Masha Misha-ny   [yaldj-ya   dien] tönün-ne.

Masha Misha-ACC fall.sick-FUT.3sS that   return-PAST.3sS

'Masha returned (for fear) that Misha would fall sick.'

In (21a), the main verb is 'become', and in (21b), it is 'return', both of which are intransitive and we would not expect it to assign accusative case. Yet we see the accusative on the subject of the subordinate subject. As Baker and Vinokurova (2010) point out, if the domain for case marking in Sakha includes both the matrix subject and the subordinate subject in these ECM constructions, the dependent-case approach, but not the traditional Case Theory, captures the occurrence of the accusative: it is the nominal in the same domain as a higher nominal that has received the nominative case, which is null in Sakha. Given that the matrix verb is intransitive, the head-assigning approach would be hard put to explain the occurrence of the accusative case marker.

3.3. Case drop

There is a phenomenon that questions the requirement that every DP must have Case. Japanese is a typical morphological case marking language, with case markers –*ga* 'NOM' and -*o* 'ACC'; -*ni* 'DAT' is also considered as a case marker in certain environments (Sadakane and Koizumi 1995).

(22) Mariko-ga   hon-o   katta.

Mariko-NOM   book-ACC   bought

'Mariko bought a book.'

It has been observed that in informal speech, the accusative case marking can optionally be left out; this so-called "case drop" is most common if the object is adjacent to the verb (Saito 1985, Fujii and Ono 2000). In the example below, the object is a wh-phrase to ensure that what is left out is the accusative marker and not the topic marker –*wa*, which can also be optionally omitted (Kuno 1973), but not in the case of a wh-phrase (Saito 1985).

(23) a.   Mariko-ga   nani(-o)   katta   no?

Mariko-NOM   what(-ACC)   bought Q

'What did Mariko buy?'

b.   Nani*(-o)   Mariko-ga   katta   no?

what(-ACC)   Mariko-NOM   bought Q

'What did Mariko buy?'

One way to view this is that if the accusative case marker does not occur, the bare object is licensed by abstract case (Saito 1985). In fact, the bare/case-marked distinction in Japanese parallels what we saw in Turkish. Fujii and Ono (2000) observe that when the object is accompanied by the case marker –*o*, the object tends to be referential, specific, or somehow salient in discourse, while such presuppositional interpretation is not found with the bare object.

In contrast to the accusative case marker, it has been observed that the nominative case marker cannot be omitted (Kuno 1973, Saito 1985).

(24) Dare*(-ga)   hon-o   kata   no?

who(-NOM)   what-ACC   bought Q

'Who bought a book?'

This makes sense on the idea that abstract case is licensed under adjacency. However, there is one problem. There is one position in which the nominative –*ga* may be omitted — if

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the predicate is unaccusative, the nominative case marker may optionally be left out (Fujii and Ono 2000).

(25) Kesa   nani(-ga)   todoita no?

        this.morning   what(-NOM)   arrived Q

        'What arrived this morning?'

The possibility of leaving out case markers, both *–o* and *–ga*, the latter with unaccusatives, also holds in acquisition. Miyamoto et al. (1999) found that Aki (2;3 – 3;00) tended to drop *–o* 94% of the time. For *–ga*, it tended to be omitted for unaccusative/existential verbs anywhere between 63% and 95% depending on the verb, but only 23% of the time with unergative/transitive verbs.

One point that is worth noting here is that we are using a wh-phrase to test for case-drop, in order to ensure that we aren't testing for the topic *–wa* drop. The use of wh-phrases has another favorable consequence. It shows that the DP occurring with the unaccusative without any morphological case marking cannot be an instance of incorporation. There are two pieces of evidence for this.

First:

(26) Mohawk/Kiowa-Tanoan

        In an object incorporation language such as Mohawk, a wh-object does not

        incorporate (Baker, p.c.).

Further confirmation that the caseless DP of unaccusatives is not incorporation is the fact that "large" DPs may occur in this position without case marking.

(27) a. Kesa   dono-kyuudan-no-sukauto(-ga) kita   no?

          this.morning   which-team-GEN-scout-NOM   came Q

          'The scout from which team came this morning?'

    b. Kesa   dono-kyuudan-no-sukauto*(-ga)   waratta   no?

this.morning   which-team-GEN-scout-NOM   laughed   Q

'The scout from which team laughed this morning?'

The omission of –*ga* with unaccusatives cannot be due to abstract case; by definition, unaccusative verbs do not assign Case (Burzio 1981, 1986), hence the bare subject must be licensed by some means other than Case. Whatever it is, it should ideally unify the adjacency phenomenon: -*ga* and –*o* may be omitted under adjacency with the head, V. The occurrence of the unaccusative "subject" without morphological case marking suggests that this NP does not have any case marking, thus questioning the idea that every NP must have some sort of case marking.

4. Deriving Case Theory

As originally noted by Vergnaud, abstract case in languages such as English and morphological case in languages such as Japanese and Latin appear on the surface to have the same function: to assign Case to DPs in specific positions in the structure. However, as we saw, there are reasons to believe that these two types of case markers have different sources. In order to unify the two kinds of case markers, and at the same time take into account the differences between them, we believe that we need to set aside Case Theory and identify a different motivation for the range of data that has fallen under the purview of Case Theory. This new approach should also set aside the assumption that every DP must have Case, as we saw from the case-drop phenomenon.

In this section, we will attempt to derive Case Theory from considerations of projection and labeling. We will adopt Chomsky's (2013) general approach, which lays out a theory of how structures are built in narrow syntax, and particularly, how each structure gets its labeling, what we will term the Problem of Projection (POP), adopted from the title of Chomsky's (2013; 2015) articles. The theory not only provides the necessary theoretical

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tools to build the basic structures of syntax, but it also makes predictions about when

movement must occur — movement occurs to address POP — and it also identifies the

role of agreement in language. Along with the general approach of POP, we will adopt an

extension suggested by Saito (2016).

4.1. Problem of Projection

The single most important operation in narrow syntax is Merge:

(28)   Merge

Merge applies to two objects α and β, and forms a new object $\gamma = \{\alpha, \beta\}$.
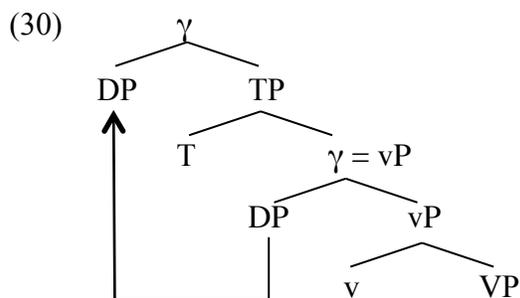
α and β are existing objects available to this operation, while γ is a new construct that must

be given a label. The nature of human language is that each phrase is headed, meaning that

either α or β provides the label for γ; the question is, which is chosen, α or β, to project

itself to give the label for γ? There are three possible configurations that result from

Merge.

(29)   a. $\gamma = \{H, \alpha P\}$

b. $\gamma = \{\alpha P, \beta P\}$

c. $\gamma = \{H_1, H_2\}$

In (29a) Merge has combined a head (H) and an XP; in (29b) two XPs have been

combined; and in (29c) two heads have been combined. In order for γ to find its label, it

undertakes search within its local domain, which is the binary structure that it directly

dominates, and picks one of the pairs to project to furnish the label for γ. This search,

called a labeling algorithm (LA), must result in an unambiguous choice. In (29a) the search

does in fact result in a unique choice, since the members of the pair, $\{H, \alpha P\}$, are distinct,

and H is the closest target of the search. In contrast, neither of the remaining two results in

a unique search because the two members are XPs ((29b)) or they are both heads ((29c)).
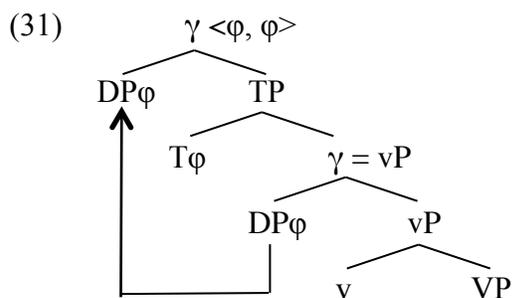
Unless they are altered in some fashion, neither of these merged structures would be labeled, thus it will fail as a structure in language.

Chomsky identifies two additional operations that can apply to ambiguous merged structures, movement, which is a form of Merge, and agreement. We can illustrate both in the derivation of the external argument.

(30)

```
              γ
          ┌───┴───┐
         DP        TP
         ▲      ┌───┴────┐
         │      T      γ = vP
         │          ┌───┴───┐
         │         DP       vP
         │                ┌──┴──┐
         └────────────────┘ v    VP
```

There are two POPs that arise in this structure, both of the form in (29b) above, in which Merge has paired two XPs. The first of these is the pair {DP, vP}. A way to provide a unique label for γ is to have one of the members move out of the structure, leaving just one member of the pair for γ. This is what we see in (30); having the DP vacate its original position leaves vP as the sole member, allowing it to project and giving γ an appropriate label.

While movement of the EA allows labeling of the lower γ, it leads to a second POP, at the landing site of this movement, {DP, TP}. To avoid a POP, there is an additional element in this pair that makes labeling of γ possible, namely, agreement.

(31)

```
              γ <φ, φ>
          ┌───┴───┐
        DPφ        TP
         ▲      ┌───┴────┐
         │      Tφ     γ = vP
         │          ┌───┴───┐
         │         DPφ      vP
         │                ┌──┴──┐
         └────────────────┘ v    VP
```

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As a result of agreement between DP and T, the two members of the pair, {DP, TP}, despite being distinct, nevertheless share the same feature φ. Searching {DP, TP}, then, the labeling algorithm LA finds the same prominent element φ in both terms, and can take that to be the label of γ (Chomsky 2013).

We can see the function of φ-feature agreement in a language such as English, as a mechanism to avoid a POP via feature matching, but what about a language such as Japanese, which does not have the kind of φ-feature agreement with arguments such as the subject? Saito (2016) suggests an extension to the POP theory by proposing that in Japanese, morphological case marking has the function to block an element from projecting. Adopting Bošković's (2007) idea that Case is independent of φ-feature agreement, Saito argues that in Japanese, Case functions independently to have essentially the same effect as φ-feature agreement in making projection and labeling possible for merged pairs that otherwise would trigger a POP.

(32)   γ = {α-Case, β}

In this structure, α and β are equivalent, both being XPs, which would trigger a POP; the problem is avoided by attaching morphological case to one of the members, α-Case, which deems α inert for projection. This leaves β as the sole element available for projection, and thus γ is properly labeled.

We can see that Saito's extension deals straightforwardly with the potential POP resulting from externally merging the EA.

(33)   γ = {DP-Case, vP}

By attaching a case marker to the EA, in this case the nominative –*ga*, the DP is made inert for projection, and γ is properly labeled as vP. This predicts that the EA in Japanese may stay in-situ in Spec,vP, something that Kuroda (1988) first suggested as a possibility. Miyagawa (2001) gave further evidence for the subject in situ; this is possible as long as

Spec,TP is filled with something else, such as the object DP (See also Koizumi and Tamaoka 2010).

A particularly interesting demonstration of subject in situ is found in Kumamoto Japanese, which is spoken on the southern island of Kyushu. Kato (2007) notes that Kumamoto Japanese (KJ) has two nominative markers, *-ga* for vP external DPs and *–no* for vP internal DPs. The latter is the same form as the genitive case marker, and she glosses it as genitive to distinguish it from *-ga*. She then notes the following SOV and the scrambled OSV examples.

(34) a.   *Taroo-ga/*no*   *son syoosetu-ba   koota   bai.*

           Taro-NOM/GEN   the novel-ACC   bought FP

           'Taro bought the novel.'

     b.   *Son syoosetu-ba Taroo-ga/no*   *koota   bai.*

           the   novel-ACC   Taroo-NOM/GEN   bought   FP

In (34a), the subject has moved to Spec,TP, thus it can only be marked with the nominative *–ga*. In (34b), the object has scrambled to the head of the sentence, presumably to Spec,TP. This makes it possible for the subject to stay in its original Spec,vP position, which makes it possible to mark it with *–no*. The possibility of *–ga* on the subject even in this OSV order indicates a second derivation in which the subject first moves to Spec,TP, as in the (34a) example, then the object scrambles across it. What is important is that Saito's (2016) approach predicts that the subject may stay in Spec,vP as long as the POP is properly addressed by case marking.[3]

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[3]Saito (2016), following a long tradition dating back to his (1985) dissertation, assumes that the nominative *–ga* is assigned to phrases in Spec,TP. This means that the EA always moves to Spec,TP even in Japanese. However, evidence from Kumamoto Japanese shows

Saito (2016) also notes that his extension straightforwardly predicts that Japanese allows scrambling. In the scrambled OSV order, the object adjoins to TP, resulting in the structure, {OBJ-Case, TP}, as in the Kumamoto Japanese example in (33b) above. Although two XPs are merged, this does not lead to a POP because one of them carries case marking, allowing only the TP to project.

4.2. Doing away with Case

The general POP approach together with Saito's extension allows us to capture what Case Theory has accounted for, without reference to Case marking by a head. We will also show that there are a number of consequences of adopting the POP approach over Case Theory that go beyond the empirical data covered by Case Theory.

Let us begin with Stowell's (1981) observation that Abstract Case is assigned under strict adjacency.

(35) a.   John bought a book yesterday.

b.   *John bought yesterday a book.

The verb phrase in (35a) has the merged structure {H, DP}, which is an appropriate structure for labeling. In (35b), the verb is first merged with the adverb, and the structure would be labeled as VP. This, then, merges with the object, leading to the POP structure, *{VP, DP}. We can thus capture Stowell's Abstract-Case-under-adjacency without reference to Case.

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that the EA can stay in situ so long as the EPP on Spec,TP is fulfilled by some other element. In Kumamoto Japanese we can see the difference in case marking to indicate this; the assumption is that in standard Japanese, the same –*ga* marks both vP external and internal subjects (Nishioka, in press, Ochi 2017).

The same analysis holds for the so-called "case drop" in Japanese. As noted earlier, while Japanese is generally a morphological-case language, there are instances in informal speech and in acquisition where a DP may occur without case marking. This happens with the object of a transitive verb and the subject of an unaccusative verb.

(36) a.   Mariko-wa   nani(-o)   katta   no?

            Mariko-TOP   what(-ACC)   bought Q

            'What did Mariko buy?'

      b.   Mariko-wa   nani*(-o)   depaato-de   katta   no?

            Mariko-TOP   what(-ACC)   department.store-at   bought Q

            'What did Mariko buy at the department store?'

(37) a.   Dare(-ga)   kita no?

            who(-NOM)   came Q

            Who came?'

      b.   Dare*(-ga)   paatii-ni   kita   no?

            who(-NOM)   party-to   came Q

            'Who came to the party?'

      c.   Dare*(-ga)   hasitta   no?

            who(-NOM)   ran   Q

            'Who ran?'

(36a) shows that the object of a transitive verb may occur without case marking; (36b) shows that this is only possible under adjacency. (37a) shows that the subject of an unaccusative verb may occur without case marking, and (37b) demonstrates that this is only possible under adjacency. (37c) shows that the subject of an unergative verb must be accompanied by case marking even if the subject is string-adjacent to the verb. We can see that the "case drop" structures, both of transitive object and the unaccusative subject, has

the same structure as the English VP, {DP, V}. For the unaccusative construction, no Case is available, thus the DP without morphological case marking is licensed without any Case. A reasonable assumption is that this is possible because the merged structure does not result in POP. On a par with the unaccusative construction, we assume that the bare object also is licensed simply because it occurs in a structure that does not have POP. We can thus set aside Case Filter, and Case Theory in general, as a requirement for DPs.

If we are to set aside Case Theory, we must account for how morphological case marking is assigned. There has been an intuition from the earliest generative work on Japanese that the morphological case marking in this language is assigned in a manner that reflects the later work on dependent case. In the first major generative work on Japanese, Kuroda (1965) proposed "linear case marking," a system in which the first unmarked nominal is marked by the nominative -*ga* and if there is a second unmarked nominal, it receives the accusative -*o*. In this way, the accusative case is a kind of dependent case on the nominative case. There are no heads involved that assign a case marker, but rather, the system scans the relevant domain for unmarked nominals, marking the first (the highest) nominal with –*ga* and if there is a second (lower) nominal, it marks it with -*o*. This is consonant with the dependent-case proposal developed later by Marantz (1991).

One problem with the dependent-case approach is, why should such a system exist in natural language? Given what we have said, based on Saito's extension to the POP, we can now say that the dependent case system furnishes language with a way to make certain elements inert for projection.

With dependent case in place, let us look at differential object marking that we discussed earlier. Following are the Turkish examples that demonstrate this phenomenon.

(38) a. Hasan bir kitap aldı.

Hasan a   book bought

'Hasan bought a book'

b.　　Hasan bir kitab-ı　　aldı.

Hasan one book-ACC bought

'Hasan bought one book'

If the object is bare, as in (38a), it receives a nonspecific/nondefinite interpretation, while the object with morphological case marking, as in (38b), receives a specific interpretation. Recall also that when the object carries morphological case, it occurs outside of the VP (e.g., Kelepir 2001). The verbal structure in (38a) is the now familiar merged pair, {DP, V}, which does not trigger a POP, hence it is appropriately labeled as VP. In (38b), the object has moved to a position outside of VP; let's say that it has moved to vP. The merged structure would trigger a POP, and the dependent case system assigns the morphological case marking on the object in order to avoid it: {DP-Case, vP}. We further predict, along the lines of Saito (2016), that Turkish allows scrambling, but only if the scrambled element is case-marked. This is what we observed earlier.

(39)　a.　*Bir kitap Hasan aldı.

a   book Hasan bought

'Hasan bought a book'

b.　　Bir kitab-ı　　Hasan aldı.

one book-ACC Hasan bought

4.3. Projection blocker, projection licensor

We saw that both φ-feature agreement and morphological case marking have the function to address POP: in the structure {αP, βP}, φ-feature agreement furnishes the same identity to both members, so that when they are projected, the label would have identical elements, leading to a unique label. Morphological case would block one of the members

from projecting, thereby allowing the other member to project. Departing somewhat from Chomsky's (2013; 2015) original idea of feature matching, we wish to characterize φ-feature agreement in a way that parallels our characterization of case marking.

We propose that for any given pair, $\{\alpha, \beta\}$, language has a way to mark which of the members may project. There are logically two ways to do this: to render one member as inert for projecting, or to render it as active for projecting. We will call the former projection blocker (PB), and the latter projection licensor (PL).

(40) a. $\{\alpha\text{-PB}, \beta\}$

b. $\{\alpha, \beta\text{-PL}\}$

(40a) is the now familiar situation where morphological case has been assigned to α, blocking α from projecting. What about (40b)? We wish to propose that the projection licensor in this structure is φ-feature agreement. This follows Chomsky's (1993) idea that φ-feature agreement makes it possible to avoid POP, but departing from his idea of feature matching, we focus on the observation that the agreement is overtly manifested only on one of the members. The overt manifestation of φ-feature agreement on β licenses β to project. This is both the same and different from Chomsky's original idea of how φ-feature agreement functions to avoid the POP. It is the same as Chomsky's conception that the primary function of φ-feature agreement is to avoid a POP, in his case, via feature matching that results in both members of the merged pair, $\{\alpha, \beta\}$, to have the same feature, φ, giving rise to a unique label for the structure, $\{\varphi, \varphi\}$. Where our approach departs from Chomsky's is in the way φ-feature agreement avoids the POP. In our view, the DP that moves to Spec,TP, creating the merged pair, $\{\text{DP}, \text{TP}\}$, provides valuation for the probe on TP. Once given valuation, the probe takes on the function of projection licensor, rendering TP as the active member to project and give label to the merged pair. Viewing φ-feature agreement in this way has at least two advantages over feature matching. First, φ-feature

agreement is only manifested on one of the merged pairs, and in our idea, it is the overtly manifested element that has the function vis-a-vis POP. Second, it allows us to equate morphological case and φ-feature agreement as being two sides of the same coin: both occur in language to address the POP through marking one of the merged elements: for morphological case, to block projection, and for φ-feature agreement, to license projection.

We entertained two logical possibilities for addressing POP: to block a member from projecting, and to license a member to project. Given these possibilities, there is yet a third, in which a language utilizes both projection blocker and projection licensor. We turn to Bantu, which shows both.

5. Bantu

If Case Theory does not hold, we would expect to find languages where there is no effect of Case. It has been noted that the languages of Bantu are precisely those that do not show any case effect (Harford Perez 1985, Ndayiragije 1999, Alsina 2001, Baker 2003, Carstens and Diercks 2009, Diercks 2012). The following examples, drawn from Halpert (2012), demonstrate four points that show this "caseless" nature of Bantu: (i) raising out of a tensed clause; (ii) bare subject in nonfinite clauses; (iii) inversion constructions in which a nonsubject occurs at the head of the sentence and controls the agreement on the verb; (iv) expletive constructions in which the associate NP stays low and the expletive agreement appears on the verb.

(41) Raising out of a finite clause

    a.   ku-bonakala [ukuthi **uSipho**   **u**-pheka iqanda].

          17S-seems   that   AUG.1Sipho 1S-cook AUG.5egg

          'It seems that Sipho is cooking an egg.' *Zulu*

    b.   **uSipho**   **u**-bonakala [ukuthi **u**-pheka iqanda].

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AUG.1Sipho 1S- seems   that   1S-cook AUG.5egg

'Sipho seems to be cooking an egg.'   *Zulu*

(42)   Bare subjects of nonfinite clauses

a.   i-na-wezakana   (*kwa) **Maiko**   ku-m-pig-i-a   Tegani simu.

9S-PRES-possible (*for) Michael INF-1O-beat-APPL-FV Tegan   phone

'It's possible for Michael to call Tegan.' (Diercks, 2012)   *Swahili*

b.   Sammy   khu-khila ku-mw-inyawe o-kwo   khu-la-sanga-sya   mawe

1Sammy INF-win   3-3-game   DEM-3 15-FUT-please-CAUS mother

'For Sammy to win the game will please his mother.' (Diercks, 2012)

Lubukusu

(43)   Inversion

a.   **olukwi**   si-**lu**-li-seny-a   bakali

11wood NEG-11S-PRES-chop-FV 2 women

'WOMEN do not chop wood.' (Baker 2003)   *Kinande*

b.   **omo-mulongo mw**-a-hik-a   mukali

18LOC-3village 18S-T-arrive-FV 1woman

'At the village arrived a woman.' (Baker 2003)   *Kinande*

(44)   Expletive constructions

a.   **kw**-á-uray-iw-a   mu-rúmé   né-shumba ku-ru-kova

17S-PAST-kill-PASS-FV 1-man   by-9lion   7-11-river

'There was a man killed by a lion at the river.' (Harford Perez 1985) *Shona*

b.   **ku**-fund-is-a   uSipho   izingane   isi

17S-learn-CAUS-FV AUG.   1Sipho   AUG.10children   AUG.7

'Sipho teaches the children Zulu.'   *Zulu*

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The Bantu languages do not show any morphological markings for case, even in a limited domain such as the pronominal system. If case were active, it would have to be Abstract Case. But then, we would not expect the constructions above to be possible. For example, we would not expect raising out of a finite clause because the subordinate subject should get its Case within the subordinate clause, making it ungrammatical for it to move to the higher "Case" position. We would not expect a bare subject in the nonfinite position without some support for Case, such as a preposition or ECM, neither of which we see. The inversion case raises questions both for why the object, which should have received Case within the vP to raise to the "Case" position in Spec,TP, and how "Case" is assigned to the external argument, which apparently stays in-situ in Spec,vP. Finally, how is the associate NP in an expletive construction licensed for Case, a question that also arises for English?

A prominent property of Bantu is that nominals, regardless of where they occur, tend to be overtly marked for its noun class. Thus, *mu-rúmé* 'man' is Class 1, as indicated by *mu*, something which we also see with Class 1 *mu-kali* 'woman'. The following shows the extensive noun class marking from Lubukusu, drawn from Diercks (2010) (Table 1).

Table 1: Noun classes in Lubukusu (Diercks 2010)

NOUN CLASS	AUGMENT	PREFIX	EXAMPLE	GLOSS
1	o-	mu-	omukhasi	'woman'
2	ba-	ba-	babaana	'children'
3	ku-	mu-	kumukhono	'arm/hand'
4	ki-	mi-	kimikhono	'arms/hands'
5	li-	li-	lilyaanda	'ember'
6	ka-	ma-	kamaanda	'embers'
7	si-	si-	sisyaangu	'sponge'
8	bi-	bi-	bibyaangu	'sponges'
9	e-	N-	eendubi	'basket'
10	chi-	N-	chiindubi	'baskets'
11	lu-	lu-	lulwiika	'horn'
12 DIM	kha-	kha-	khakhaana	'small child'
14	bu-	bu-	bubwiino	'ink'
15	khu-	khu-	khukhwanja	'to begin'
16 (LOC 'at')	a-		amulyaango	'at/near the door'
16a (LOC 'towards')	sya-		syamulyaango	'towards the door'
17 (LOC 'on')	khu-		khumulyaango	'on the door'
18 (LOC 'in')	mu-		mumulyaango	'in the door'
20 (AUG)	ku-	ku-	kukwaana	'big child'
/4	ki-	mi-	kimyaana	'big children'
23 (LOC 'in the vicinity of')	e-		enaarobi	'at Nairobi'

An important point about noun class is that it enters into agreement with a verbal element *when the DP moves*. The following Kinande examples show the subject, the object, and the locative moving to Spec,TP, and the verbal element agrees with what has moved.

(45) a. Omukali   mo-a-seny-ire   olukwi   (lw'-omo-mbasa). (SVO)

   woman.1   AFF-1.S/T-chop-EXT   wood.11   LK11-LOC.18-axe.9

   'The woman chopped wood (with an axe).'   *Kinande*

   b. Olukwi   si-lu-li-seny-a   bakali   (omo-mbasa). (OVS)

   wood.11   NEG-11.S-PRES-chop-FV   women.2   LOC.18-axe.9

   'Women do not chop wood (with an axe).'   *Kinande*

   c. ?Omo-mulongo   mw-a-hik-a   omukali. (LocVS)

   LOC.18-village.3   18.S-T-arrive-FV   woman

'At the village arrived a woman.' *Kinande*

At the same time, Bantu has augment vowels, which attach as a prefix to DPs. Halpert (2012) argues that the augment vowel has the function of case marking, thereby showing that Bantu in fact has case marking despite its traditionally "caseless" characterization. We will demonstrate this with the simplest cases.

(46) a.   Yohani   si-a-nzire   mu-kali.

             John   NEG-1.S/T-like   CL1-woman

             'John does not like a(ny) woman.'

      b.   Omukali   mo-a-teta-gul-a   ki-ndu.

             AUG-CL.1-woman   AFF-1.S-NEG/PAST-buy-FV   CL7-thing

             'The woman didn't buy anything.'

      c.   *Mu-kali   mo-a-teta-gul-a   eritunda.

             CL1-woman   AFF-1.S/T-NEG/PAST-buy-FV   fruit.5

             'No woman bought a fruit.'

The example in (46a) shows that 'woman' in the object position may occur without the augment vowel, while in (46b), it occurs with the augment vowel in the subject position. The example in (46c) shows that without the augment vowel this DP is ungrammatical in the subject position. As Halpert notes, the distribution of the augment vowel matches the distribution of morphological case marking. In the object position, it need not occur, but once a DP moves, the augment vowel must occur. And just as with DOM we saw in languages such as Turkish, a DP with the augment vowel has topic properties. It is also possible for an object that has not moved to Spec,TP to have the augment vowel.

(47) Yohani   si-a-nzire   o-mu-kali.

      John   NEG-1.S/T-like   AUG-CL1-woman

      'John does not like the woman.'

This, again, parallels languages such as Japanese and Turkish: morphological case marking on the object indicates that it is definite/specific, presumably showing that the object has moved from its original complement position to a position higher in the verbal projection.[4] This example also demonstrates that the augment vowel, though functioning like a case marker, is not part of a morphological-case system assigned by the dependent-case scheme. Augment vowels match the vowel of the noun class that the noun prefix belongs to (Baker 2003, Progovac 1993, Schneider-Zioga 2007), for example, *o-* for class 1 in example (47). It is possible that we will find other forms of projection blocker in languages that have not been looked at from this perspective.

From the perspective of the POP approach, the augment vowel functions as a projection blocker, just like morphological case. Given that Bantu also has agreement with noun class features whenever a DP moves, what we have is a language family that has *both* projection blocker and projection licensor, as shown in (48c).

(48) a.   {α-PB, β} E.g., Japanese, Turkish (for objects)

b.   {α, β-PL} E.g., Germanic, (Modern) Romance, Turkish (for most subjects)

c.   {α-PB, β-PL} E.g., Bantu, Latin

Turkish is interesting in that, as we saw, the object has DOM when not in the original complement position, thus it uses the option of projection blocker. But the subject does not get any morphological case marking. Instead there is agreement, thus the labeling

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[4]Once we get beyond the basic data, there are complications. For example, according to Halpert (2012), in a distransitive construction, the two internal arguments may or may not have augment vowel; this includes the possibility that neither has the augment, a situation that would require further analysis espcially to see how the higher of the two internal arguments is being blocked from projecting.

involving the subject takes the option of marking the T with a projection licensor. In the following example, the subject is glossed as nominative following the standard practice for Turkish, but there is nothing overt that indicates case marking.

(49)   Ahmet   [bu   kitab]å   Berna'ya vermis8

     Ahmet.NOM   this   book-ACC   B.-DAT   give-PAST-3SG

      'Ahmet gave this book to Berna'

Finally, it is well-known that in the subordinate clause, Turkish subject is commonly marked with the genitive morphological case.

(50) [ben-im al-dığ   -ım]   at   iyi-dir

     [I-GEN buy-Factive Nominalizer-1.SG horse   good-is

     'The horse I bought is good.'

This portion of Turkish grammar resembles Bantu in having both a projection blocker (morphological case marking) and a projection licensor (agreement).

6. Adjectives, nouns

A key point made by Vergnaud is that [-N] heads can assign Case, namely V and P, but [+N] heads, A and N, cannot. In the case of the latter, a default marking, *of*, is inserted to satisfy the Case Filter.

(50)   I am proud *(of) my accomplishments.

(51) The destruction *(of) Rome

If we are to set aside Case Theory, and the notion of Case in general, we must deal with this distinction between [-N] and [+N] categories for Case marking.

An obvious but an important point is that [-N] and [+N] are simply short hands to note that V/P, but not A/N, assign Case. This notation does not indicate why only certain categories assign Case. What we suggest is that the distinction Vergnaud drew has a

structural basis, whereby V and P may take their complement directly as a head, while A and N cannot.

Note the following contrast in ellipsis possibilities.

(52) Mary bought books, but John didn't ___ (*magazines).

(53) Mary is proud of her accomplishments, but John isn't ___ of his.[5]

(52) shows the well-known fact that under VP ellipsis, the object along with the verb must elide. In (53), we see that with an adjective, the complement, *of his* (*accomplishments*), may occur under ellipsis, indicating a difference in structure from VPs. Following is another example of an adjectival ellipsis.

(54) Mary is sure of her decision, but John isn't ___ of his.

Furthermore, the same ellipsis facts extend to CPs.

(55) John claimed [that the world is flat] but Mary didn't (*that the world is round).

(56) Mary is proud [that her daughter came in first in the race] but John isn't ___ [that his son came in second].

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[5] An alternative view is that these two examples are actually instances of head ellipsis rather than phrasal ellipsis. Under this view, the contrast can be attributed to an independent requirement that head ellipsis must elide a fully inflected head. And since the V head in English can be fully inflected with tense morphology, whereas the A head is never inflected overtly, only an A head can be elided in these negated sentences. However, as is shown later in (61) with P ellipsis, P cannot be elided even though it is not inflected overtly. So we believe this alternative view does not adequately account for the data here, and instead we argue that these sentences are all instances of phrasal ellipsis rather than head ellipsis.

Facts from VP ellipsis indicate that adjunct PPs may survive ellipsis, while argument PPs may not.

(57) Mary always walks for cancer, while John sometimes does ___ for AIDS.

(58) Mary put a book on the table, but John didn't (*on the chair).

If we were to extend this generalization to the adjectival ellipsis, it suggests that the apparent complement of the adjective is not its true argument, which is why it can survive adjectival ellipsis.

Assuming that adjectival ellipsis, like VP ellipsis, elides a phrase, what the data above indicate is that with a verb, its complement is selected directly by the verbal head, comprising the structure [$_{VP}$ V DP]. Under ellipsis, the entire VP, including the object DP, must elide. But with an adjective, apparently the structure is something like the following.

(59)
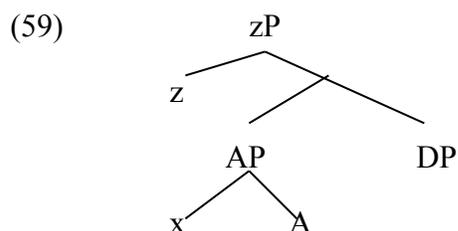
That is, for an adjective to take its complement, the adjective must first project to an AP, and this AP takes the complement. As a result, ellipsis can target the AP only, allowing the DP to survive.

The structure above clearly suggests that the "complement" of an adjective has a different status from the object of a verb; while the object of a verb is a true argument of the verb, the complement of the adjective is not.

Thus, Vergnaud's observation that adjectives do not assign Case to its complement appears to be due to the fact that the "complement" is not a true argument of the adjective.

We can see the same with XP preposing.

(60) *... and [$_{vP}$ buy] he did a book.

(61) ... and [AP very proud] she is of her accomplishments.

Note that our observations about the complement of the adjective is compatible with both the Case Theoretic approach and the POP approach. For the Case Theoretic approach, the observation provides a structural explanation for why adjectives appear not to assign Case. Case assignment does not occur because the complement isn't a true internal argument of the adjective. This is preferred to simply labeling a category as [+N] and saying that this label indicates that the lexical category does not assign Case. For the POP, *of* insertion serves as a projection blocker, much like case marking in Japanese.

Turning to nouns, we see a similar fact under ellipsis as what we saw for adjectives.

(62) Mary bought three books of philosophy, and John bought four ___ of math.

Just as with adjectives, the CP complement may survive ellipsis.

(63) Mary's complaint [that the course is too easy] was taken seriously, but John's ___ that [the course is too hard] wasn't.

Furthermore, the complement of nominals may be left out, which suggests that it may not be the true internal argument of the nominal head.

(64) the destruction (of Rome)

So a noun must project up to an NP before it can take a complement, paralleling what we observed with adjectives.

Along with verbs, Ps (prepositions/ postpositions) are Case assigners. This predicts that P, like verbs, takes its complement directly. We see this with ellipsis.

(65) *The book is under the table, but is not __ the chair.

The fact that CPs, unlike DPs, do not need Case have a straightforward explanation under Case Theory, but not necessarily under POP. We saw from ellipsis facts that the CP of adjectives and nouns occur with AP and NP projections, yet there is no projection blocker on the CP, in contrast to a DP complement, which has *of* as projection blocker. Why can a

CP be suppressed from projection without any overt marking to make it inert? One possibility is to fold this fact with PPs. PPs also do not project without the need for a projection blocker, most likely because P itself is a projection blocker like morphological case. It has been observed (Emonds 1985) that CPs have properties that in some ways parallel PPs. If so, one shared property is the inherent inertness of these phrases for projection.

6.1. Predicion: A/N cannot take any type of complement

Under this analysis, because a nominal or adjectival head must merge with some element x before merging with its apparent "complement," we will always run into a POP when this nominal or adjectival phrase merges with the "complement" phrase. The prediction is that there is a POP regardless of the category of this complement phrase. While the classic Case theory requires that all NPs have Case, APs, which do not need Case according to the theory, are nevertheless tolerated as complements to V, but not to N:

(Emonds 1985)

(66) a. John appeared reluctant to leave.

    b. *We were surprised by John's appearance reluctant to leave.

(67) a. That dessert tasted sweeter than candy.

    b. *That dessert's taste sweeter than candy overwhelmed us.

(68) a. His plant grew tall.

    b. *His plant's tall growth is easily explainable.

(69) a. My friend stayed sober for years.

    b. *I am happy about my friend's stay sober for years.

Our labeling theory can explain this contrast. Because the verb head is merged directly with its complement, the resulting phrase takes the label of the verb head, and the (a) examples above are grammatical. On the other hand, a nominal head cannot take a complement by itself. It has to merge with another element before it merges with the "complement". POP arises whenever a nominal takes a complement, as the (b) examples above show.

The same analysis extends to the fact that V can take VP-complements, which are also known to not need Case, but N can't. This relies on Emonds' study of gerunds (1976, Ch. 4), treating V-ing complements of intransitive verbs of temporal aspect not as NPs, but as true VPs. Similarly, *to*-less infinitives after perception verbs are not nominals, but VPs.

(Emonds 1985)

(70) a. They continued clearing the street.

b. Did David start doing his project?

c. She should cease describing the machines.

(71) a. One should see a cat fight another cat.

b. They noticed me take a tooth brush off the rack.

(72) a. *The continuation clearing the street was a surprise.

b. *We were all relieved at David's start doing his project.

c. *A cessation describing the machines would be welcome.

(73) a. *The sight of a cat fight another cat is interesting.

b. Their notice of me take tooth brushes led to my arrest.

As suggested earlier, CPs are parallel to PPs in being suppressed for projection. If P is a projection blocker, C would be one as well. Interestingly, finite clauses with no overt complementizer cannot be complement to N, but can merge with V:

(74) a. John feared Mary would be late.

b. John's fear *(that) Mary would be late turned out to be justified.

(75) a. She decided no one qualified.

b. Have you heard about her decision *(that) no one qualified?

This contrast can be attributed to the lack of the complementizer as projection blocker, so a POP arises when it merges with a nominal. We don't run into such a problem when the clause merges with a V head because the head can always supply its label.

There may be an alternative view about *that*-less clauses, namely these clauses still have a complementizer, but it is null. This is still compatible with our labeling theory. It suggests that phonologically null elements cannot block projection. Recall that in order to block the phrase from projection, the blocker itself has to be inflected with some overt morphology. Because a null element cannot bear such morphology, it cannot be a projection blocker.

The analysis extends to *for*-less infinitival clauses as well. ECM verbs can take clausal complements, but their derived nominals can't, unless an overt complementizer / preposition *for* blocks the clause from projecting:

(Emonds 1985)

(76) a. He expected there to be lasting peace.

b. We prefer the weather to be cool.

(77) a. His expectation *(for) there to be a lasting peace was never met.

b. Our preference *(for) the weather to be cool should be taken into account.

In fact, the generalization that V and P can take a wider range of complements than A and N is much broader. Not only does it apply to infinitival complements, but small clauses can also be complement to V and P, and not to A and N:

(Emonds 1985)

(78) a. The organization considered the law repressive. (Complement to V)

b. I invited company with my refrigerator empty. (Complement to P)

(79) a. *Our election of John secretary was illegal.

   b. *Chomsky's consideration of the paradigm an interesting problem was a turning

      point.

   c. *Your opinion of the law repressive is evidence of an open mind.

(80) a. *We were not considerate of our guests very comfortable.

   b. *Mary was judgmental of John ill-tempered.

The examples in (76)(???) and (78) can be unified. In these examples V and P are

Exceptional Case Marking (ECM), and the difference is whether their complement is an

infinitival or small clause. Then we can phrase the generalization to be that V and P are

Exceptional Case Marking, whereas their A and N counterparts are not.

6.2. ECM construction

To understand this generalization, it is worth reviewing the unique property of ECM

constructions, namely raising of the embedded subject to the matrix clause (Postal 1974).

Evidence comes from the fact that the raised subject precedes higher-clause low VP-

adverbs and particle:

(81)   a. Somebody found Germany recently to have been relatively justified

          in the Lusitania sinking. (Postal 1974, 146-7)

       b. Sue made Bill recently out to be the best candidate.

Diagnostics from the binding principles suggest that the raised subject c-commands low

elements in the higher clause, as Lasnik and Saito (1991) have shown. (82a) violates

Principle A because the raised pronoun c-commands the R-expression in the higher clause.

In (82b) the raised DP c-commands the reciprocal *each other* and satisfies Principle C.

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(82)   a.   *John believes him$_i$ to be a genius even more fervently than Bob$_i$'s mother does.

b.   The DA proved the defendants$_i$ to be guilty during each other$_i$'s trials.

Following the raising-to-object analysis for ECM constructions, the derivation below for (78a) shows that the embedded subject raises to form the specifier of matrix Spec,VP. And V moves to v to generate the correct word order.
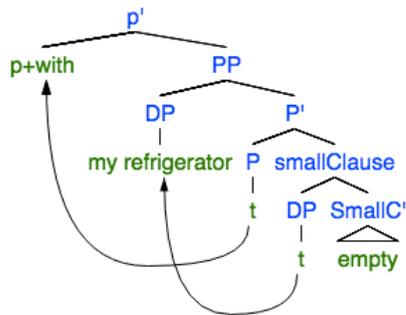
(83) a. Somebody found Germany recently to have been relatively justified

in the Lusitania sinking.

b. The structure of ECM V
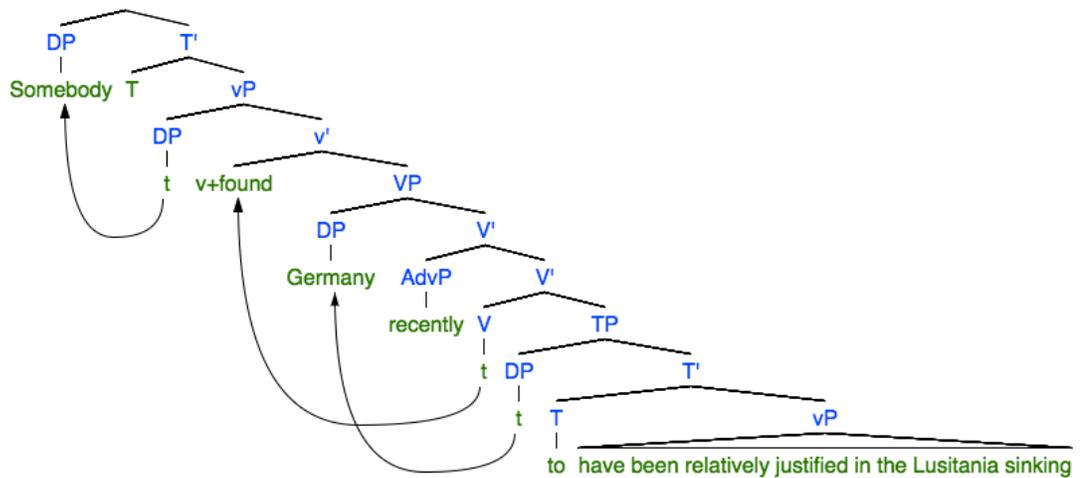
A similar raising structure can be made for ECM P in (77b):

(84) a. …with my refrigerator empty.

b. The structure of ECM P

If A and N have to be merged with an element x before merging with its apparent complement, we can understand why they can't Exceptionally Case Mark the complement. Moving the embedded subject to the specifier position of A or N would violate the requirement that the moved position must c-command the trace position.

(85) Illicit subject movement
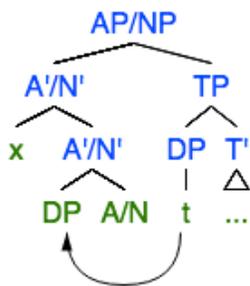
Now let's look at *for*-infinitival constructions, which parallel the ECM construction in many ways:

(86) a.   For Mary to go to China, she would need to learn Mandarin.

b.   I wish for Mary to go.

If *for* is taken to be a special kind of preposition that embeds an infinitival clause, it can essentially be thought of as an ECM P whose complement is an infinitival clause rather than a small clause. Then the structure of (86a) is similar to the one for ECM P:

(87) a. For Mary to go to China, …

b. The structure of *for*-infinitival
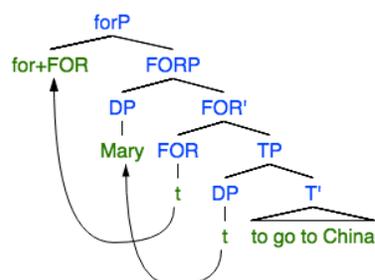
As Pesetsky (2017) has argued, *for*-infinitives do have raising properties similar to those of ECM constructions. The evidence is that there can be separate relative clauses modifying the subject and the embedded clause respectively, and switching the order of these relative clauses is not allowed:

(88) a.   She wanted very badly for the solution to turn green, as/which her theory predicted, which is what we all wanted as well.

b. *She wanted very badly for the solution to turn green, which is what we all wanted as well, as/which her theory predicted.

(89) a.   I would have preferred for there to be ice-cream at the party, as Mary mistakenly reported, which you would have liked too.

b. *I would have preferred for there to be ice-cream at the party, which you would have liked too, as Mary mistakenly reported.

The strict ordering of relative clauses suggests that the subject is indeed higher than the infinitival clause because the relative clause modifying the subject must be outside the one modifying the infinitival TP.
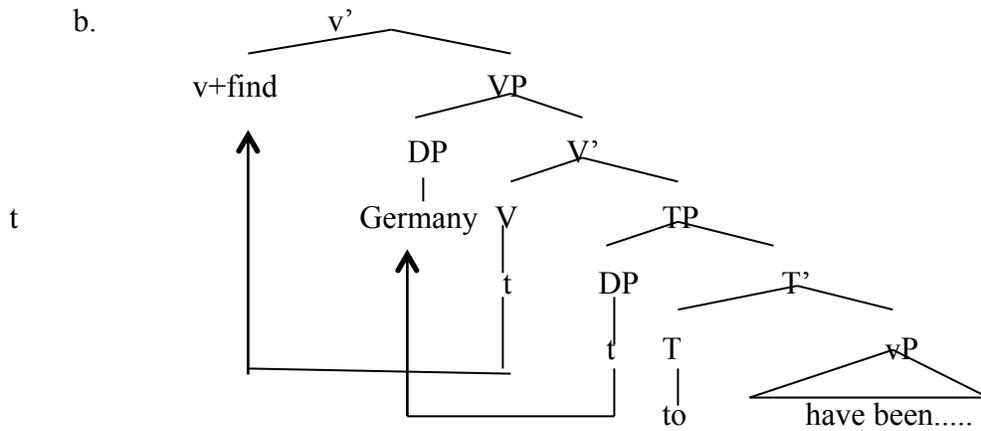
So far we have proposed a unified analysis for three apparently different constructions, ECM V, ECM P and *for*-infinitive. *For*-infinitive is just a special kind of ECM P, with *for* taking a small clause as its complement. Then a critical distinction between V/P and A/N is that V and P can be ECM, taking a slightly smaller complement than a full finite CP. Crucially, their nominalized and adjectivized counterparts cannot embed such a clausal complement. We argue that this contrast is due to the fact that V and P heads can directly merge with their complement, but A and N cannot. Because the specifier position of A and N does not c-command the embedded subject, it cannot move there. Under our labeling theory, the fact that A and N do not directly merge with their apparent complement predicts that no phrase can be their complement unless being blocked for projection by some overtly inflected element. This prediction is borne out, as we have seen that DP, AP, VP and clausal complements to N and A are not tolerated, but they are as complements to V and P.

6.3. Head raising as projection licensor

A remaining question about the ECM constructions is how the POP is resolved when the embedded subject moves to the specifier position of the V and P head. The sister of the moved DP is a VP or PP, which would lead to a POP. We wish to collapse this with the notion of agreement as a projection licensor.
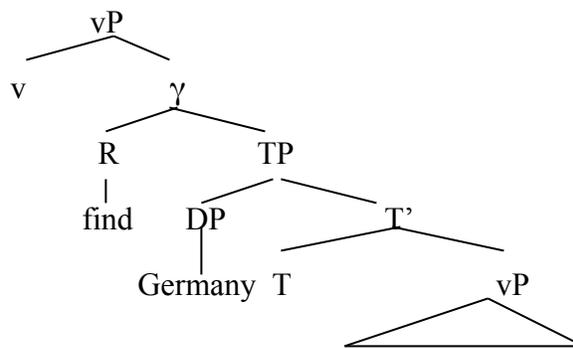
For ECM, an analysis that is widely adopted is schematized below; we give only the relevant portion.
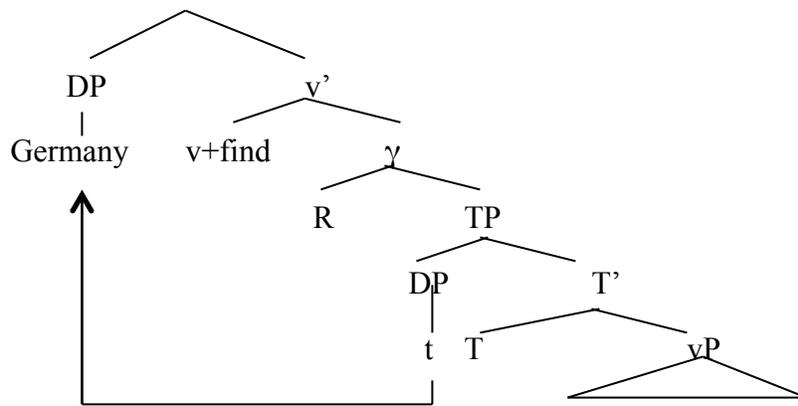
(90) a. Mary found Germany to be very pleasant.

b.

```
                        v'
              ┌─────────┴─────────┐
           v+find                 VP
                          ┌────────┴────────┐
                         DP                 V'
                          |          ┌──────┴──────┐
                      Germany  V            TP
                               |      ┌──────┴──────┐
                               t     DP            T'
                                      |      ┌──────┴──────┐
                                      t      T            vP
                                             |       ┌─────┴─────┐
                                             to      have been.....
```

t

However, under assumptions about roots in DM, this structure cannot be correct. Notice that *found* that moves to v is a root; roots are, by definition, without any grammatical properties, thus they cannot be the target of operations such as movement. In order for the root to move, it must first receive categorization by v locally. This happens before any movement ensues.
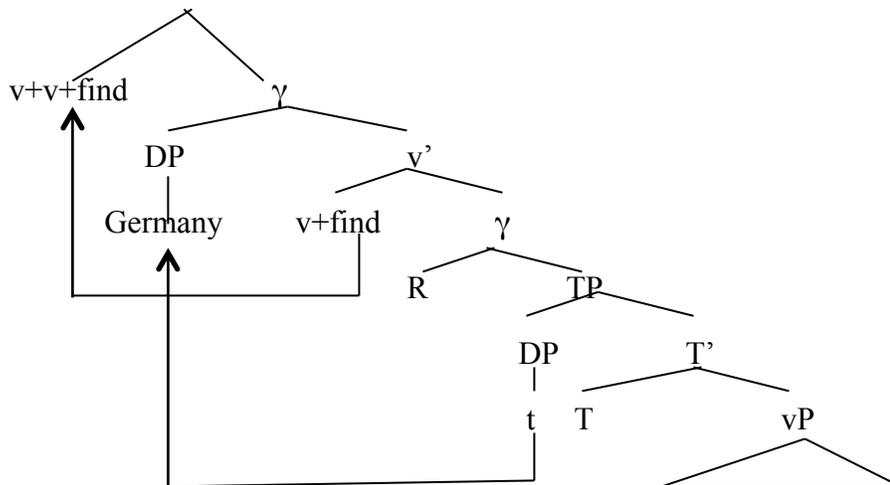
(91)

```
                        vP
              ┌──────────┴──────────┐
              v                     γ
                          ┌─────────┴─────────┐
                          R                   TP
                          |          ┌────────┴────────┐
                        find        DP               T'
                                     |         ┌──────┴──────┐
                                  Germany  T          vP
```

The merging of v that is string adjacent to R renders this root as being a verb, and now, it may be targeted for movement. We will assume that the v and the root merge, and this v-root entity occurs in the original v position, as shown below. Before this v-root can move to a higher position, there is a POP in TP, {DP, TP}. To fix this, the DP must move out and adjoin to the vP.

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(92)

```
            DP              v'
            |
          Germany    v+find        γ
                                 R        TP
                                       DP        T'
                                        |
                                        t    T         vP
```

There is now a POP created by {DP, vP}, but before we deal with it, let us continue to

build the tree by merging v above this structure, and v+find moves to this v.

(93)

```
     v+v+find         γ
                  DP           v'
                  |
               Germany    v+find        γ
                                     R        TP
                                           DP        T'
                                            |
                                            t    T         vP
```

Returning to the POP {DP, vP}, the generalization is that head movement alleviates

POP. Why should that be the case? We find the hint in the requirement that before head

movement occurs, the root must combine with v to receive a grammatical category,

because it is only then that the v-root combination can be the target of a grammatical

operation. But what is this grammatical operation? It ultimately ends up with the v-root

moving to the higher v, but following the standard assumption about movement, we

presume that an agreement relation is first established between the higher v and the v-root.

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This means that the v-root carries agreement. Although this agreement does not get implemented as an overt φ-feature agreement, nevertheless, it is overtly implemented by head movement that signals that there is agreement on v-root. We thus can make the following statement.

(94)   Head movement as projection licensor

    A head that moves has agreement, hence is marked as a projection licensor.

By virtue of the HMPL, γ takes on the label of vP; only the relevant portion is shown.

(95)
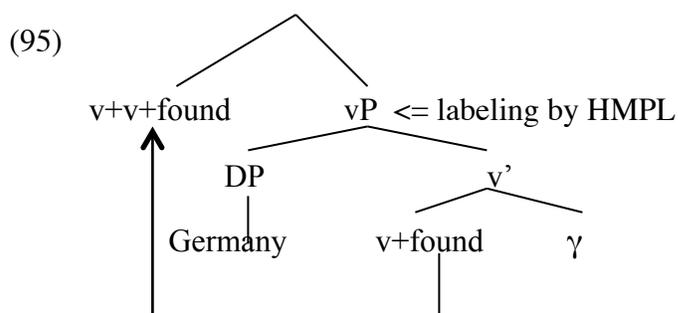
    We find independent evidence for HMPL in other grammatical constructions not at all related to ECM. In northern Italian dialects of Trentino (T) and Fiorentino (F), verbs do not agree with postverbal subjects; the verb instead has the unmarked neutral form (third-person masculine singular) (Brandi and Cordin 1989:121–122).

(96) a. Gli è   venuto   delle ragazze.   (F)

   b. E'   vegnú   qualche putela.   (T)

     is   comesome   girls

    'Some girls have come.'

In contrast, full agreement must occur if the subject moves to the preverbal position (presumably Spec,TP) (Brandi and Cordin 1989:113).

(97) a. La Maria la   parla.   (F)

   b. La Maria la   parla.   (T)

the Mary she speaks

'Mary speaks.'

In (96), the postverbal subject 'some girls' is assumed to stay in situ in Spec,vP. This triggers a POP, {vP, DP}, which normally would require the subject to move to Spec,TP, as we saw for English. However, unlike English, the verb (v+speak) moves to T; by virtue of this head movement, HMPL marks the vP as the projection licensor, which allows the vP-internal subject to stay in situ. The v+speak that moves to T would also mark the T as projection licensor by HMPL, allowing the node dominating v+speak to be labled as TP. The EPP on T presumably is somehow fulfilled without moving the subject to Spec,TP. However, if the EPP is not satisfied, and the subject moves to Spec,TP, agreement occurs to mark the TP as the projection licensor, just as we saw for English. Our analysis accounts for why in languages that have v+V movement to T, the subject may stay in situ in its original position in vP.

In English, we saw that φ-feature agreement as projection licensor makes it possible to project the TP when a DP is moved to Spec,TP.

(98) A student is reading a book.

However, this agreement no longer occurs on T under T-to-C movement in wh-questions.

(99) What is the student reading?

The agreement has moved to C by head movement, depriving the TP of this agreement. But the POP nevertheless is addressed by the head movement that has moved the T with agreement to C.

Finally, the double object construction appears to be a case of POP.

(100) Mary gave John a book.

The two DPs, *John* and *a book*, are not direct complements of the verb *give* (see Harley and Miyagawa 2017 and references therein), thus both should trigger a POP. However,

evidence from idioms shows that the verb starts out low in the structure, and raises to the higher position (e.g. Larson 1988).

(101) Mary *gave* John *hell*.

The idiomatic expression is *give hell*, thus, the verb must begin as the head taking the DP *hell*; it moves above the goal phrase to a higher structure (VP shell in Larson's 1988 analysis).

(102)
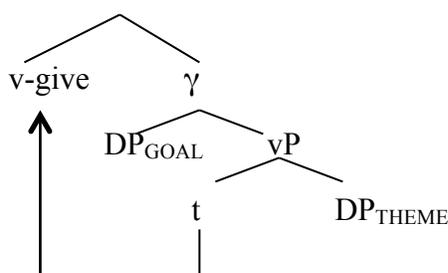
Whatever the details of the structure is, it is clear that the verb has undergone head movement, and this allows the structure to be properly labeled.

7. Expletive *there* construction

The English expletive *there* constructions are notorious for posing difficulties to analyses because *there* appears to be semantically vacuous and inserted only to fill Spec,TP:

(103) There are many people in the room.

When the expletive phrase *there* is merged with TP and generates {*there*, TP}, a POP arises. The solution is to license projection by TP: T, the ɸ-probe, is morphologically inflected for ɸ-agreement, so TP projects its label.

The expletive *there* sentence differs from nonexpletive ones in that T's ɸ-features are valued via a long-distance agreement relation with the associate located low in the structure instead of in the specifier of TP. This is supported by the fact that the ɸ-features

of T covary with those of the associate DP:[6]

(104) a.   There is a person in the room.

    b.   There are many people in the room.

The word order indicates that the associate is in the complement position of the copula. The definiteness restriction that the associate must be indefinite and nonspecific also suggests that it stays low.

Assuming the low position of the associate, this suggests that agreement does not necessarily have to occur between XP and YP from which the POP arises. One of {XP, YP} (in this case TP) can agree with another element, the associate DP lower down. As long as this agreement relation provides the probe with the overt agreement morphology that makes it the projection licensor, it can successfully supply the label to the merged pair.

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[6] As Sobin (2014) has noted, T sometimes agrees in φ-features with the expletive *there*, which seems to bear third-person singular features:

(i)   a.   There are books on the table.

    b.   There's books on the table.

    c.   There was/*were Mary, Zelda, and my friend Lynn at the party.

    d.   Mary, Zelda, and my friend Lynn were/*was at the party

    e.   There is/?*are a book and a pen on the table.

    f.   A book and a pen are/*is on the table.

    g.   There is only me in that picture/*There am only I in that picture.

    h.   Only I am in that picture.

We leave it to future research what are the conditions in which T agrees with the expletive in its specifier position. But for the purpose of our argument, it is sufficient that T can agree with the associate DP as well.

Our revised version of the labeling theory is more flexible than the original formulation. In the original labeling theory, agreement as a solution to the POP must occur between phrasal sisters. When XP and YP are merged, the label of the merged node can't be determined, so the two phrases must agree in order to project the shared feature. This means that agreement has to only occur between sisters. This theory fails to account for cases of long-distance agreement, as we have seen with the expletive *there* sentences, where the probe agrees not with its specifier, but with another element lower down.

Long-distance agreement exists not only in English, but also in other languages. Icelandic, for instance, is famous for having quirky-case subjects, which occur in idiosyncratic lexical nonnominative case depending on the main verb (Thráinsson 2007). When a subject bears quirky case, the finite verb, which would otherwise agree with the nominative subject, agrees with the nominative object instead:

(105)   Henni   leiddust   strákarnir.

     her.3SG.DAT   bored.3PL   the boys.3PL.NOM

     'She found the boys boring.'

This agreement pattern is understood if we think of Icelandic finite T as only targeting nominative nominals for φ-agreement. (105) is clearly a case of long-distance agreement, where T agrees with the object lower down rather than its specifier.

Again, our theory has a straightforward explanation for this that the original labeling theory does not. As long as T is inflected for agreement morphology, it projects the label to the merged node. It does not matter where that agreement morphology comes from: T could agree with its specifier or with some other element farther away.

The raising construction shows that agreement can be achieved in an even longer distance. Matrix finite T agrees with an associate DP separated from it by an infinitival TP. As long as no other φ-probe intervenes in between, agreement can cross multiple

infinitival TP boundaries. Infinitival T is not a φ-probe and so does not intervene in the probe-goal relation.

(106) There seem to be many people in the room.

When the expletive is in Spec,infinitival TP, the expletive cannot bear morphologically case to be a projection blocker, nor can the infinitival T be inflected for agreement to be a projection licensor. We predict that the expletive must then move out to solve the POP. This prediction is borne out.

8. Wh-construction

Languages vary as to whether the wh-phrases move or not. Richards (2016) proposes Generalized Contiguity to predict when movement must occur.

(107) *Generalized Contiguity*

If α either Agrees with or selects β, α and β must be dominated by a single prosodic node, within which β is Contiguity-prominent.

Using wh-construction as a concrete example, what Generalized Contiguity states is that the wh-phrase and C that contains the feature (Q) that agrees with the wh-phrase must occur in a single prosodic node. The prosodic nature of some languages, e.g., Japanese, is such that this requirement is met without moving the wh-phrase, while in others, e.g., English, the wh-phrase must move to Spec,CP to be in the same prosodic domain as the C that contains the Q feature that agrees with the wh-phrase.

Our interest is in what happens once a wh-phrase moves to Spec,CP, forming the merged pair, {wh-phrase, CP}, which potentially triggers a POP. In some languages, the agreement relation between C and a wh-phrase manifests itself overtly on C, a phenomenon known as "complementizer agreement." For example, in Irish, when a wh-phrase occupies Spec,CP, the C head assumes a special form conventionally glossed as

"aL", as shown in (60) (McCloskey 2001). Parallel to φ-feature agreement, we can regard the complementizer agreement as an instance of projection licensor.

(108) Cá   fhad   a   bhí   said   fá   Bhaile   Átha Cliath t?

       wh   length aL   be [past] they   around   Dublin

        'How long were they in Dublin?'

In other languages, we see overt marking on fronted wh-phrases. Tlingit (Na-Dene) is a case in point. In Tlingit, the particle *sá*, which Cable (2007) refers to as "the question-particle (Q-particle)," occurs at the end of each fronted wh-phrase. This is exemplified in (109) (Cable 2007: 26, 69, 71).

(109)   a.   [Aadóo yaagu   sá]   ysiteen?

               who   boat   Q   you.saw.it

               'Whose boat did you see?'

        b.   [Daa   sá]   uwajée   wutoo.oowú?

               what   Q   they.think   we.bought.it

               'What did they think we bought?'

        c.   [Aa   sá]   [goodé   sá]   woogoot?

               who   Q   where.to   Q   they.went

               'Who went where?'

In these examples, a potential POP that would arise from {wh-phrase, CP} is avoided by the projection blocker *sá*, just like morphological case marker.

How about languages like English, in which there is no apparent overt device to overcome the POP for the wh-construction, either a projection blocker or a projection licensor? How is the POP overcome in languages of this type? Here, an observation that Cable (2007) makes in another context is relevant: he notes that the set of wh-phrases in a given language may consist of wh-phrases that share the same morphology, as in English

and German, while in a language such as Japanese, the wh-phrases do not share such morphology (See also Watanabe 1992; Kratzer and Shimoyama 2017).

(110) English   Japanese

  who   *dare*

  what   *nani*

  when   *itu*

  why   *naze*

  how   *doo*

As we can see, the wh-phrases in English all have the *wh-* morphology (*h* in *how* and *wh* are historically related), while no such morphological uniformity is observed in Japanese. From this, we can surmise that the *wh-* morphology is a projection blocker, allowing the merged structure containing a wh-phrase to be properly labeled. In Japanese, in which wh-phrases don't move, there is no need to build in a projection blocker into the wh-phrase itself; therefore, the wh-phrase behaves like any other DP, taking on projection blocker in the form of morphological case marking if necessary.

If this conjecture is on the right track, we would expect that wh-phrases tend to be morpho-phonologically similar to each other in wh-fronting languages. This expectation is surely correct in Indo-European languages (Table 2), although it may be a trait inherited from the Proto-Indo-European *$k^w e$-* / *$k^w i$-*. The morpho-phonological similarity among wh-phrases are also observed in wh-fronting languages outside the Indo-European. For example, Biak (Austronesian) has three interrogative pronouns, all of which are compounds containing the question morpheme *sai* or *sei*: *man-sei* (male person-Q, "who"), *in-sei* (female person-Q, "who"), and *ro-sai* (non-human entity-Q, "what") (van den Heuvel 2006).

(111) Rosai   waser   ro   karunyani?

rosai   wa-ser   ro   karun=ya=n=i

what   2SG-fill   LOC   bag=3SG.SPC=SEP=3SG.SPC

'What have you filled into the bag?' (van den Heuvel 2006:78)

A small-scale informal survey suggests that morpho-phonological similarity in interrogative phrases can be found in a wide variety of wh-fronting languages in the world (Table 3). It is interesting to observe in this context that in Saran and Haitian Creole, both of which are creole languages, the wh-phrases have a uniform Q-particle, *o* in Saran, *ki* in Haitian Creole (Table 4). According to Muysken and Smith (1990:884), it is the most striking characteristic of question words in a number of Creole languages to have a form that can be represented abstractly as Question Particle (Q) + Questioned Semantic Unit (QSU), where QSU indicates what is being questioned.

Note that we are not claiming that all wh-fronting languages exhibit a morphological uniformity of wh-phrases. A morphologically uniform system of wh-phrases once evident in a language can become opaque through time. Some other pressures may exert their influence on the form of wh-phrases. Moreover, morphology after all is full of exceptions. We can therefore only expect a tendency toward uniformity.

Wh-phrases in wh in-situ languages need not be morphologically uniform for the purpose of signaling the presence of a projection blocker. Indeed, the wh-phrases are not similar to each other in many wh in-situ languages (Table 5). However, the wh-phrases in some wh in-situ languages may exhibit a morpho-phonological similarity because of other reasons such as a shared semantic feature or historically inherited trait.