Inducing and blocking labeling

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Abstract

Japanese has functional elements with grammatical, semantic, or pragmatic functions. Case markers mark grammatical relations; the Q-particle clause-types the sentence as an interrogative; and the topic marker designates a phrase as the topic of the sentence. Along with these functions, we argue that these functional elements have a uniform function of assisting in the labeling of structures. There are two ways in which they do so. In one case, a functional element attaches to an item that cannot otherwise project to induce projection, an idea we base on Richard's Contiguity Theory. In the other case, a functional element attaches to an item that is projectable but requires the projection to be blocked, allowing a sister item to project. The Q-particle is an example of a functional element that, when attached to an otherwise unprojectable C, induces the C to project. In contrast, case markers attach to XPs, which are inherently projectable, and block them from projecting, allowing the sister element to project, following Saito. The same goes for topic marking. Across languages, many functional elements have this role of assisting in the labeling of structures. The Q-particle in Japanese, which allows the C to project, is similar to

agreement in English and other languages, in which the agreement morpheme on T induces the T to project. Case marking, which blocks projection of a XP, is similar to augment vowels in Bantu, and it is no accident that these vowels have a case-like distribution. Finally we speculate how case marking and movement, both functioning to allow the sister node to project, have common properties of projection blocking.

1 Introduction

Japanese, like many languages, has dependent morphemes, either monosyllabic or multi-syllabic, that attach to a head or a phrase and fulfill some syntactic/semantic/pragmatic function. These include the morphological case markers *-ga* 'NOM" and *-o* 'ACC', the topic marker *wa*, and the Q-particle *ka/no*, which are all clitics rather than affixes (Hattori 1950). Each has its own independent role: Thus, the case markers *ga* and *o* generally mark the grammatical function of a phrase, the case markers themselves being assigned by a head such as T or *v* (Chomsky 1981, 1995; Saito 1985; Vergnaud 1977), or by the Dependent Case scheme (Marantz 2000; see also Baker 2015; Preminger and Kornfilt 2015). The topic marker *wa* occurs on the DP in Spec,TopP to mark the Aboutness Topic of the sentence (Kuno 1973; Miyagawa 2017). The Q-particle *ka/no* clause-types the sentence as interrogative.

Along with these functions, which are specific to each particle, we will argue that they have a uniform syntactic function of contributing to the labeling of structures. As we will show, each particle appears when a labeling problem arises, and the particle helps to resolve this problem. There are two ways in which a particle assists in labeling structures. When an element cannot project by itself, a particle may attach to it to induce projection. When an element has the ability to project but for some reason needs to be blocked from projecting, a particle that attaches to it has this "blocking" effect.

(1)   The labeling function of particles

      (i)   Attaches to a non-projectable element => induces projection

      (ii)   Attaches to a projectable element => blocks projection

For the first function of inducing projection, we will present an analysis drawing on Richards's (2016) Contiguity Theory. For the second function of particles, i.e., as a blocker of projection,

we will follow Saito's (2016, 2018) idea that case marking has the effect of blocking projection by turning an element into a "weak" node and prevents it from being considered as a candidate for labeling. Taken together, our proposals in (1) predict that {XP, YP} causes a Problem of Projection (POP) if neither XP nor YP bears a projection inducer or projection blocker. When one member, say XP, bears a projection inducer as in {XP-inducer, YP}, X(P) projects. If a member bears a projection blocker as in {XP-blocker, YP}, the other member, i.e. Y(P) is chosen as the label of the composite.

Our analysis of particles for labeling is based on the framework in Chomsky (2013, 2015). According to Chomsky, the single most important operation in narrow syntax is Merge:

(2)   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 such that each phrase is headed, meaning that either α or β provides the label for γ; the question is, which of α or β is chosen to project itself to supply the label for γ? There are three possible configurations that result from Merge.

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

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

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

In (3a) Merge has combined a head (H) and an XP; in (3b) two XPs have been combined; and in (3c) two heads have been combined. In order for γ to find its label, it undertakes a search within its local domain, which is the binary structure that it directly dominates, and picks one of the pair to project to furnish the label for γ. This search, called a labeling algorithm (LA), must result in
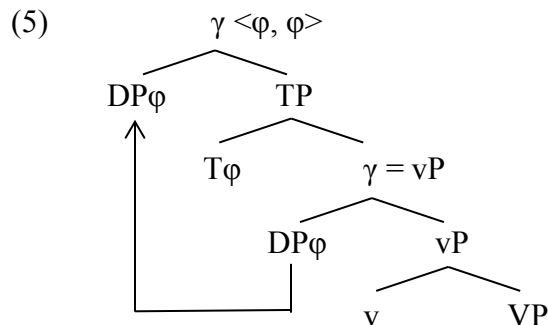
an unambiguous choice. In (3a) the search does in fact result in a unique choice, since the members of the pair, {H, αP}, are distinct and H is the closest target of the search. In contrast, neither of (3a) and (3b) results in a unique search because the two members are XPs ((3b)) or they are both heads ((3c)). Unless they are altered in some fashion, neither of these merged structures would be labeled, thus failing as a structure in language.

Building on Moro (2000), 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.

(4)

γ

DP   TP

      T γ = vP

           DP   vP

                v   VP
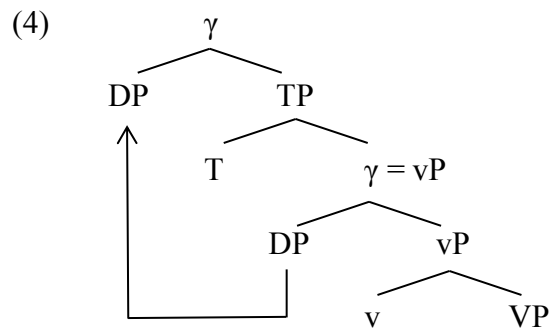
There are two problems of projection (POPs) that arise in this structure, both of the form in (3b) above, in which Merge has paired two XPs. The first of these is the pair {DP, vP}. One way to provide a unique label for γ is to have one of the members move out of the structure, leaving just one member of the pair for γ. This is what we see in (4): evacuation of the DP out of 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.

(5)
```
              γ <φ, φ>
            /        \
        DPφ           TP
         ↑          /    \
         |        Tφ      γ = vP
         |              /      \
         |           DPφ        vP
         |_____|       /    \
                             v       VP
```

As a result of agreement between DP and T, the two members of the pair {DP, TP}, despite being distinct, nevertheless share the same φ-feature. Searching {DP, TP}, then, the labeling algorithm LA finds the same prominent element φ in both terms, which can be taken as the unique label of γ (Chomsky 2013).[1]

The analysis we will present based on labeling provides a unified explanation across a number of phenomena: Case marking, agreement, EPP movement to Spec,TP, *wh*-movement vs. *wh*-in-situ, and so forth. For each of these phenomena, there are other ways to account for it separate from labeling, but the advantage, we believe, of our approach is that we suggest a unified way to view the multitude of phenomena that require separate explanations. We emphasize that a unified account based on projection and phenomenon-specific accounts are not necessarily mutually exclusive. For example, case marking has its own specific function as

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[1]A reviewer rightly asks what the status of this lower copy is in (5), and why doesn't it impede in the labeling of the lower projection even if its copy has raised? Earlier literature does not take up this issue of the lower copy viz. labeling. Attempting to give a full explanation would be beyond the scope of this article, but the question intrigued us enough to speculate on how we might resolve this issue. There is a general understanding that the lower copy is not identical to the head copy; the lower copy, for example, would contain just enough information for being interpreted as a copy/trace (Fox 1999, 2000, 2002). One way to concretely think of this is to go back to the distinction of c- vs. s-selection (e.g., Grimshaw 1979, 1981; Pesetsky 1982). C-selection is for category (Chomsky 1965) while s-selection is for semantic selection, broadly speaking. Once the DP vacates its original position, and what we need in its original position are elements for semantic interpretation, we could imagine that only features associated with s-selection would remain, preventing features related to c-selection from occurring, and it is these c-selection features that otherwise would lead to a POP. In this way the lower copy does not impede labeling.

marking a grammatical relation; this arises from the particular head that a case marker is associated with (v, T, etc.), or, in another approach, with the competition among case markings that we see in the Dependent Case approach. Our approach enhances the case-marking-specific analysis by giving an explanation as to why case marking exists at all in languages.

2 Inducing labeling

We begin by looking at issues of labeling at the CP level. Starting with Chomsky's (2015) analysis of labeling at the CP level for *wh*-questions, we will look at the *wh*-construction in Japanese from the form it took in Old Japanese to the changes that occurred to transform it to the form we see in modern Japanese. What we will see is that the requirement stated in Chomsky (2013, 2015) that both members of the pair should carry agreement does not always hold. What we find in Japanese in fact mirrors the rich agreement in Romance, which does not require a specifier to occur, what is called pro-drop in the GB literature (Taraldsen 1978, Rizzi 1982).
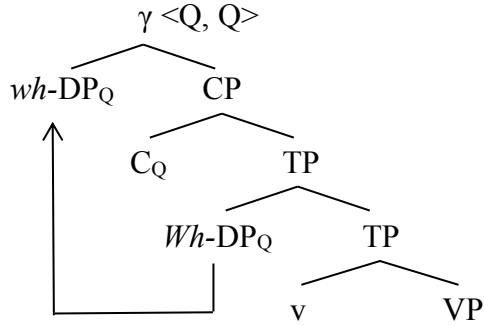
2.1 Labeling and wh-questions

In Chomsky (2015), a *wh*-question such as the following is analyzed on a par with the subject at TP.
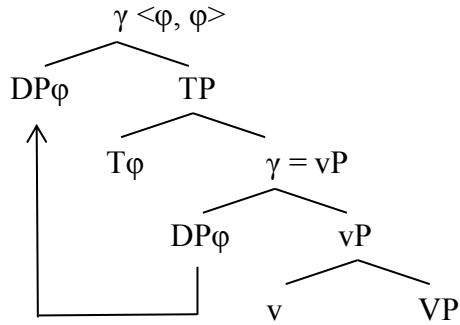
(6) Which dog does Mary like?

By merging *which dog* in the CP region, we get the structure {*wh*-DP, CP}, a POP by itself. But C has the Q-feature, parallel to the φ-feature on T. The moved *wh*-phrase also has this feature, parallel to the DP with the φ-feature moving to TP. With both *wh*-DP and CP having the same Q-

feature, the newly created structure {*wh*-DP, CP} may be appropriately labeled.[2] The CP/TP

parallels are illustrated below.

(7)   CP

$$\gamma <Q, Q>$$

wh-DP$_Q$ CP

C$_Q$ TP

Wh-DP$_Q$ TP

v   VP

(8)   TP

$$\gamma <\varphi, \varphi>$$

DPφ TP

Tφ $\gamma = vP$

DPφ vP

v   VP

    Japanese is a typical *wh*-in-situ language. However, in Old Japanese the *wh*-phrase

overtly moved to the head of the sentence (Nomura 1993; Watanabe 2002). The following is

taken from *Man'yoshu*, an anthology of poems compiled in eighth century CE; the number

"1169" is the number of the poem in the anthology (Takagi 1957, 1962).

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[2] Chomsky (2015) uses this analysis of the *wh*-construction to derive some island effects as well
as the ECP. See his work for the details of this analysis.

(9)   Idukuni-ka   kimi-ga   fune   fate   kutsa   mutsubi-kemu.   (1169)

      which-KA   you-NOM   ship   stop   grass   tie-PST

      'Where did you anchor your ship?'

Without exception, a moved *wh*-phrase is accompanied by a focus particle such as *ka* in this example. This overt movement began to disappear from the language beginning in the ninth century, apparently triggered by the separation of the *ka* particle from the *wh*-phrase (Miyagawa 2010). In Isobe's (1990) study of *wh*-questions in the *Tale of Genji*, a psychological novel by Lady Murasaki Shikibu in the tenth century, roughly one-third of the examples have *ka* on a *wh*-phrase at the head of the sentence, whereas in another third, the *wh*-phrase occurs in-situ by itself and *ka* appears at the end of the sentence, just as in modern Japanese. The remaining third are similar to those with clause-final *ka*, except that the final particle is a different focus particle, *zo*. The last type is exemplified here.

(10)   Kono   nisi-naru   ie-ha   **nani-bito**-no   sumu-zo?

       this   west-be   house-TOP   what-person-NOM   live-Q

       'What person lives in this house to the west?'

In other words, once a particle such as *ka* or *zo* does not accompany the *wh*-phrase but instead occurs on the interrogative C, the *wh*-phrase no longer moves, and thus Japanese became a *wh*-in-situ language.

Let us assume that the analysis of the movement of the *wh*-phrase in Old Japanese is essentially the same as that of *wh*-movement in modern English, although it need not. For example, given that focus particles are involved, it may be that in Old Japanese, it is focus agreement that is operative as suggested for *wh*-constructions in general by Rizzi (1997). What

we wish to look closely at is the historical change that transformed the OJ *wh*-movement construction into the modern *wh*-in-situ construction. We believe that this change sheds light on an important factor affecting labeling that has implications beyond *wh*-questions.

The key change in the *wh*-construction from OJ to modern Japan is the migration of the focus particle from occurring directly on the *wh*-phrase in OJ to occurring independently as a particle on C in modern Japanese. Once the particle occurs on C, the *wh*-phrase does not move. From the perspective of labeling, this means that once the particle attaches to it, C is able to project independently without needing a *wh*-phrase to merge with it, as was the case in Old Japanese. What is the function of the particle on C, such that it makes it possible to forgo the need for the *wh*-phrase to move to C?

In Miyagawa (2001), it is suggested that the occurrence of the Q/Focus particle on the $C_{Q/Foc}$ fulfills the EPP requirement of the C head. It does so because the particle has the same feature, Q (or Foc), as the head, C. We will extend this analysis by presenting an analysis based on Contiguity Theory (Richards 2016), but taking the liberty to reinterpret Richards's ideas as issues of labeling.

A way to describe the idea that the Q-particle meets the EPP requirement of C is say that the Q-particle makes it possible for C to project without the need for a specifier, which Richards (2016) calls "Support" (he was referring to T, but it is just as applicable to C). We believe that this idea of inducing a head to project by attaching a particle such as a Q-particle is the correct characterization. What is it that the Q-particle does to make it possible to induce projection by C? In Chomsky (2015), it is suggested that certain heads—the head he is concerned with is T, although it could just as well extend to C—are "roots" in the sense of Marantz (1997), and something has to attach to it to turn such a root into a syntactic object that can project, in the

same way that *v* categorizes a verbal element. Although it is uncertain whether the bare form of T or C is a root, we share the intuition that attaching the Q-particle to C renders the C something that can function in syntax; however, instead of straightforwardly adopting this notion of "root,"we suggest that the Q-particle, by attaching to C, gives C an independent morphosyntactic category status.

(11)   The function of the Q-particle:

The Q-particle attaches to C to give it an independent category status, which induces labeling by C.

We can tell that the C-Q combination in Japanese is an independent category: The C-Q combination occurs as a morphosyntactically independent item that does not affect the accentuation of the preceding element. Most verb stems ending in a vowel such as *ta'be* 'eat' carry accent on the penultimate mora. When the present tense morpheme *-ru* is affixed to them, the tense morpheme occurs within the same metrical unit, so the rule of assigning accent to the penultimate mora shifts the accent (McCawley 1968). This is the case even when other suffixes such as the potential *-(rar)e* 'can', the causative *-(s)ase*, and the passive *-(r)are* intervene between the verb stem and the present tense morpheme, as shown in (12).

(12)   a.   ta'be   'eat'

b.   tabe'-ru   'eat-PRS'

c.   tabe-rare'-ru   'eat-can-PRS'

d.   tabe-sase-rare'-ru 'eat-cause-PASS-PRS'

These indicate that the passive, the causative, and the tense affixes are all part of the same metrical unit as the stem.[3]

In contrast, the Q-particle *ka*, which is an enclitic, does not affect accentuation.

(13)   tabe'ru ka   'eat-PRS Q'

This indicates that while affixes such as the present tense morpheme combine with the preceding element to form a single metrical unit, there is a metrical boundary preceding the Q-particle that is due to the morphosyntactically independent status of the Q-particle relative to the preceding item.

What this indicates is that a head—in this case C—can be induced to project if it has independent categorical status, as indicated by the occurrence of a metrical boundary that precedes it, what Richards (2016) calls "Support" within his Contiguity Theory. This allows the C to fulfill the EPP requirement without the need for a specifier. If this is true, we should be able to find the same kind of effect in the classic case of EPP fulfillment without a specifier, pro-drop in Romance. The head that is involved is T, not C, and indeed, we find precisely the expected metrical boundary that points to T in Romance as having an independent categorical status.

As first noted by Oltra-Massuet (1999, 2000) for Catalan verbs, and later extended by Guerzoni (2000) to Italian and by Oltra-Massuet and Arregi (2005) to Spanish, in Romance, stress typically occurs on the vowel that precedes the tense morpheme. This is shown for Spanish below (the data and the basic approach are drawn from Richards 2016).

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[3] If the stem itself is unaccented, no accent appears with affixation.

  kime- 'decide', *kime-ru* 'decide-PRS', *kime-sase-ru* 'decide-CAUS-PRS'

(14)   a.   cantá-**ba**-is

sing-**IMP.IND-**2PL

'you (PL) sang (imperfective)'

b.   cantá-**ste**s

sing-**PREF**.2PL

'you (PL) have sung'

c.   canta-rí-**a**-is

sing-FUT-**PST-**2PL

'you (PL) would sing (conditional)'

These linguists suggest that there is a word-internal boundary for assigning metrical stress, and this boundary immediately precedes the tense, as illustrated for *cantá -ba-is* 'sing-IMP.IND 2PL.[4]

(15)   cantá)-**ba**-is

This is similar to what we observed for the Q-particle in Japanese, in the sense that both the TENSE-AGR in Romance and the Q-particle in Japanese have independent status, meaning that they are not incorporated into the metrical structure of the preceding metrical unit. This independent status of the head (C, T) induces the head to project without having to merge a specifier.

Pro-drop has been identified with rich agreement (Taraldsen 1978; Rizzi 1982). It is possible that beyond having the full repertoire of agreement features, the agreement morpheme itself may have a morphologically independent status, similar to the Q-particle *ka* in Japanese.

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[4] The formalism that these linguists use is adopted from Idsardi (1992).

For example, Alexiadou and Anagnostopoulou (1998) suggest that the agreement morpheme is pronominal-like, which would make it an independent lexical item. However, it is difficult to show this, so we will simply focus on the occurrence of the metrical boundary that precedes the T-AGR as an indication that the T-AGR functions as an independent category that can project.

Not all Romance languages allow pro-drop, and we would expect that in these languages the T does not have an independent categorical status. Richards (2016) observes that in French, which does not allow pro-drop, there is no metrical stress preceding tense, but instead the stress is on the final syllable of the word (unless the final syllable has a schwa, in which case the stress shifts to the penultimate syllable).

(16)   a.   chant-i-éz

                sing-**IMP.IND**-2PL

                'you (PL) sang (imperfective)'

       b.   chant-é

                sing-**PREF**.2PL

                'you (PL) have sung'

       c.   chant-er-éz

                sing-**FUT**-2PL

                'you (PL) will sing'

Thus the tense-agreement segment does not form an independent entity in French. See Richards (2016) for a similar analysis of English, another language that does not allow pro-drop.

We saw that the Q-particle functions to give C an independent categorical status, allowing the head to project without the need for a specifier. We saw precisely the same effect with the rich agreement in Romance, which makes T an independent category, in turn making

pro-drop possible. Where T fails to have this independent status, as in French and English, pro-drop is not allowed.
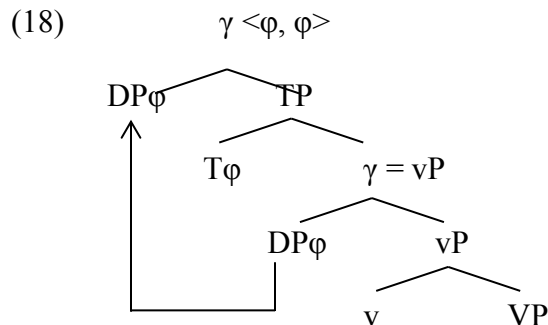
If a particle fails to occur on C, C does not have independent status. It carries a grammatical feature (Q), and projection is made possible by feature sharing, as suggested by Chomsky (2013), by moving the *wh*-phrase to Spec,CP. The Old Japanese example is repeated below.

(17)   Idukuni-ka   kimi-ga   fune   fate   kutsa   mutsubi-kemu.   (1169)

which-KA   you-NOM   ship   stop   grass   tie-PST

'Where did you anchor your ship?'

The movement of the *wh*-phrase is likely triggered by focus, and once it moves to Spec,CP, a POP arises. We follow Chomsky (2015) in assuming that the POP is resolved by the agreement feature, Q (or Foc), on the *wh*-phrase and C.

2.2 Expletive construction

Let us return briefly to the Q-particle/pro-drop account. As we argued, the Q-particle attaches to C to give C an independent categorical status, which induces C to project. The same holds for T in Romance, where rich agreement gives T an independent categorical status such that a specifier is not needed. Note that this approach diverges from Chomsky's (2013) original idea of φ-feature agreement and labeling. In his analysis, agreement must occur on both the head and the specifier.

(18)　　　　　γ <φ, φ>

```
              γ <φ, φ>
            /         \
        DPφ            TP
         ↑           /    \
         |         Tφ      γ = vP
         |               /      \
         |            DPφ        vP
         |                      /   \
         |_____v     VP
```

The sharing of the φ-feature by the DP and TP allows the top node to be labeled as <φ, φ> by drawing from both the DP and TP, thus resolving the POP. In our approach, there is no need for the specifier to carry a φ-feature, but rather, what is important is that T does. And it is this Tφ that requires some enhancement for it to be able to project, either by having some independent X^0 entity attach to it, as in many Romance languages, or having an XP merge with it, as in English or French. In either case, the enhancement gives T sufficiently independent status to project.

Evidence to support our approach comes from so-called long-distance agreement. The English expletive *there* constructions are such an example; *there* appears to be semantically vacuous and inserted only to fill Spec,TP:

(19)　　There are many people in the room.

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 lower in the structure rather than in the specifier of TP. This is supported by the fact that the ɸ-features of T covary with those of the associate DP:[5]

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

(20) 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. Hence, what occurs in Spec,TP is a semantically vacuous element that does not carry φ-features. In these examples, then, T alone projects, which is what we predict. Long-distance agreement exists not only in English. Icelandic, for instance, is famous for having quirky-case subjects, which occur in idiosyncratic lexical nonnominative cases 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:

(21) Henni   leiddust   strákarnir.

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

'She found the boys boring.'

(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 to determine the conditions under which T agrees with the expletive in its specifier position. However, for the purposes of our argument, it is sufficient that T can agree with the associate DP as well.

This agreement pattern is understood if we think of Icelandic finite T as only targeting nominative nominals for φ-agreement. (21) is clearly a case of long-distance agreement, where T agrees with the object lower down rather than its specifier.[6]

2.3 Root clauses and labeling[7]

We saw that in modern Japanese *wh*-questions, *wh*-in-situ is made possible by the Q-particle occurring on C; the particle gives C independent categorical status and induces it to project. However, there is one exception to the necessity of the Q-particle (Yoshida and Yoshida 1997; we use *no* as the Q-particle below; Q-particle drop is in the informal register and *no* is more appropriate in this register).

(22)   Dare-ga   kuru   (no)?

      who-NOM   come   Q

      'Who will come?'

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[6] Assuming that quirky case in Icelandic is not a projection blocker, the subject in (21) moves from "Spec,vP" to "Spec,TP" to avoid a potential POP at the vP level. This movement makes it possible for T to agree with the object, fixing its case value as nominative. In other words, the subject movement feeds the agreement/case assignment between T and the nominative object. The potential POP at the TP level is resolved by the agreement marker on T, a projection licensor. Note that when there is no argument for T to agree with, as in (i) for example, the default third person singular agreement functions as a projection licensor.

  (i)   Strákunum   leiddist/*leiddust.
      the boys(PL)   bored(3SG/*3PL)
      'The boys were bored.'

[7] This subsection was added in response to insightful questions posed by two anonymous reviewers.

The Q-particle can never be omitted in embedded contexts.[8]

(23) Hanako-wa   [dare-ga   kuru *(ka)]   sitteiru.

    Hanako-TOP   who-NOM   come Q   know

    'Hanako knows who will come.'

Why is the omission of the Q-particle possible in a root but not in an embedded clause? We suggest the following.

(24) Root and labeling

    The root clause need not be labeled.

This makes sense since the root by its nature will not undergo further merger, so it need not be identified as input to Merge.

      We can find further evidence that the root need not be labeled from declarative clauses. The root declarative clause normally does not contain an overt complementizer, but an overt complementizer is required in embedded contexts.

(25) Hanako-wa   [Taroo-ga   iku *(to)]   omotta.

    Hanako-TOP   Taro-NOM   go   C   thought

    'Hanako thought that Taro will go.'

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[8]The Q-particle *ka* may also optionally be omitted in the root clause. It is not always clear whether it is *no* or *ka* that is omitted. In the following, the verb has the polite form *–mas,* which most naturally occurs with *ka,* thus, it is *ka* that is omitted.

(i) Dare-ga   ki-masu   (ka)?
   who-NOM   come-MAS   Q
   'Who will come?'

Thanks to an anonymous reviewer for this question.

This array of data from the declarative construction indicates, again, that the root clause need not be labeled. The root C may have overt manifestation in the way of sentence-final particles such as *ne* and *yo*.

(26)   Taroo-ga   iku   yo.

       Taro-NOM   go   EXPL

       'Taro will go!'

There is one interesting exception to the idea that the complementizer in subordinate environments must have overt existence. As originally observed by Saito (1986), in Kansai (Western) Japanese, the complementizer may optionally be left out.

(27)   John-wa   [Mary-ga   ki-ta   (tte)]   yuu-ta/omoo-ta.

       John-TOP   Mary-NOM   come-PST   that   say-PST/think-PST

       'John said/thought (that) Mary came.'

As Kishimoto (2006) points out, this optional omission of the complementizer is only possible with the two verbs in this example, *say* and *think*. These verbs typically allow root-clause phenomena in their subordinate clause (Hooper and Thompson 1973; Miyagawa 2017). Thus, for example, Negative Constituent Preposing, a typical root phenomenon (Emonds 1969, 1976), is allowed with *say* or *think* (see Hooper and Thompson 1973 for extensive discussion).

(28) John said/thought that never in his life would he win the lottery.

From this, we could plausibly analyze complementizer drop as an instance of a root phenomenon occurring in the complements of *say* and *think*. On this analysis the subordinate clause without the complementizer does not have a label. A piece of evidence for this is that the subordinate

clause without the complementizer cannot be the target of scrambling (Kishimoto 2006).

(29) [Mary-ga   ki-ta   *(tte)]ᵢ   John-ga   tᵢ   yuu-ta.

       Mary-NOM   come-PST   that   John-NOM   say-PST

       '*(That) Mary came John said.'

The ungrammaticality may be accounted for by the fact that the subordinate clause is not labeled, and hence cannot be the target of a syntactic operation such as scrambling.

Finally, we find further evidence for the root not requiring labeling from the topic construction. In Japanese the topic occurs at the left edge, being marked by -*wa*.

(30) Watakusi-wa iku.

       I-TOP   go

       'I will go.'

This topic occurs in the Spec,TOP position (see Miyagawa 2017); the head Top itself does not have overt manifestation; thus, the particle -*wa* is required to avoid a POP, just as in the case of overt *wh*-movement in Old Japanese. This -*wa* can optionally drop in root clauses but not in embedded contexts (Kuno 1973; Saito 1985).

(31) Sensei-wa   [watakusi-*(wa)   iku to]   omotteiru.

       teacher-TOP   I-TOP   go   C   think

       'The teacher thinks that I will go.'

3 Blocking labeling

In this section we will explore the role that morphological case marking in a language such as Japanese has on labeling. After exploring a series of data that show that case marking and its occasional absence both shed light on labeling of structures, we will turn to a proposal by Saito (2016, 2018) for the role case marking has for labeling. We will adopt his idea that case marking blocks a node from projecting. He argues that case marking turns the element into a "weak" node (Saito 2018), which prevents the search for labeling from further considering it as a candidate for labeling. We will adhere to his idea and provide a concrete way to capture the idea of "weakness" by looking specifically at a particular property of morphological case marking.

Although Japanese DPs generally require morphological case marking, there are instances in which it may be omitted. We will begin with a discussion of this phenomenon of case-marking omission.

3.1 Case-dropping

We begin by looking at a phenomenon commonly called "case-drop," in which a case marker is optionally omitted. The purpose for starting with this phenomenon is to show that this phenomenon of case-drop adheres to the notion of labeling, thereby showing the relevance of the labeling idea to Japanese inside the TP. This will set the stage for looking at case marking later in the section. It will also lay the groundwork for looking at differential object marking in Turkish.

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 (e.g., Saito 1985, Fujii and Ono 2000). This most typically happens with the object of a transitive verb. In the example

below, the object is a *wh*-phrase to ensure that what is omitted 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).

(32) 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?'

(32a) shows that the object of a transitive verb may occur without case marking; (32b) shows that this is only possible under adjacency. From the perspective of labeling, (32a) is of the form {αP, H}, where αP is the object 'what' and H is the head, V. This is an appropriate structure for labeling. In (32b), the locative PP 'at the department store' merges with V, which creates a βP. Then the object merges with this structure, most probably by internal merge, creating the new structure {αP, βP}. This triggers a POP that requires some additional mechanism to appropriately label the structure. Very clearly, morphological case marking, in this case the accusative case marker *o*, has this function. We will turn to the role of case marking below.[9]

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

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[9]An anonymous reviewer notes that for (32b), the case-marked object could have first merged with the verbal head first, then the object moves out by scrambling. On this account, the labeling of VP is made possible redundantly by the head, V, as well as the case marker on the object, which blocks labeling. As we also note for Turkish (FN 13), such redundancy does not undermine our approach, but only that a better formulation may be found.

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

       who(-NOM)   what-ACC   bought Q

       'Who bought a book?'

This makes sense on the idea that the nominative DP is typically not adjacent to a head, but

rather is adjacent to the projection of T, forming the structure {αP, βP}, which triggers a POP.

However, there is one position in which the nominative *-ga* may be omitted: If the predicate is

unaccusative, the nominative case marker may optionally be omitted (Fujii and Ono 2000).

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

       this.morning   what(-NOM)   arrived Q

       'What arrived this morning?'

The sole DP of the unaccusative verb is presumably adjacent to the verb, forming the structure

{αP, H}, which is appropriate for labeling. Just as we saw with the object of the transitive verb,

if the DP occurs away from the verb, a POP arises without case marking.[10] This includes both a

DP that occurs away from an unaccusative verb and the DP of an unergative verb.

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

            who(-NOM)   came Q

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[10]An anonymous reviewer wonders how we know that 'what' in (34) without *ga* isn't in
Spec,TP. If it were in Spec,TP, we would expect a temporal adverb to occur freely between it
and the verb, but this isn't the case.

(i) Nani-??(ga) kinoo   todoita no?

   what-NOM   yesterday arrived Q

   'What arrived yesterday?'

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?'

In (35a), the DP occurs adjacent to the unaccusative verb 'come'; because the structure here is {αP, H}, no POP is triggered. In (35b), a locative PP first merges with the unaccusative verb 'come', which forms a βP with the verb. To this the DP is merged, creating the structure {αP, βP}; a POP is triggered unless there is morphological case marking on the DP.[11]

The possibility of leaving out both case markers, *-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. Thus, the pattern of case marking omission in informal adult speech

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[11] An anonymous reviewer notes that the case-drop facts become more complex as we move out of the core examples. While we recognize that there are counterexamples to the core cases, we believe that the notion of adjacency is primary, and when it holds, there are no extraneous factors needed to license case-drop. In the non-core cases, contextual factors play a significant role. For example, as the reviewer notes, it has been observed that a bare object NP may occur before the dative DP and the verb. There may be some contextual factors here, or it is a straightforward counterexample to the adjacency generalization.

for objects of transitive verbs and the subject of unaccusative verbs is also found in early stages of acquisition.

Just as φ-feature agreement functions to resolve a POP that is triggered by the structure {αP, βP}, we believe that morphological case marking functions in a parallel way to allow labeling of this structure. Thus, for example, once the subject adjoins to TP, creating the structure {DP, TP}, in English the POP is resolved by φ-feature agreement (Chomsky 2013), while in Japanese it is morphological nominative case marking that allows this structure to be labeled. We turn below to how case marking has this function.

Before doing so, we wish to note a prediction that our approach makes about a difference between English and Japanese with regard to the external argument. Merging the external argument to its vP-internal subject position creates the structure {DP, vP}. To avoid a POP in English, the DP is moved out of the vP, leaving only the vP as the sole target of search for labeling, and labeling ensues accordingly. In Japanese, the subject could likewise move out of vP to avoid a POP, but there is another possibility: If the subject can be case-marked, we predict that there is no need for it to move.

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 scrambled OSV examples.

(36)   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 (36a), the subject has moved to Spec,TP, presumably to satisfy the EPP requirement of T (Miyagawa 2001; see Nishioka (2019) for some additional Kumamoto data beyond the simple EPP cases). Thus it can only be marked with the nominative -*ga*. In (36b), the object has scrambled to the head of the sentence, presumably to Spec,TP. This meets the EPP requirement of T (Miyagawa 2001; see Saito 2006 for an alternative to the EPP approach). 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 (36a) example, then the object scrambles across it. The important point here is that the subject may stay in its original vP-internal position despite the {DP, vP} structure, because the subject is morphologically case-marked, which makes it possible to avoid a POP without moving the subject out of the verbal projection.

3.2 Case marking as projection blocker

How does the case particle block the projection of the XP that it attaches to? We will adopt Saito's (2018) idea that case marking turns the node it attaches to "weak" so that it is no longer a candidate for labeling. We will restate this in a slightly different way to take advantage of some facts about Q-float.

We focus on the well-known observation that the DP with case marking behaves as a DP, and not as some projection of the case marker. Thus, for example, the DP with case marking c-commands a floated numeral quantifier (Shibatani 1977, Miyagawa 1989):

27

(37) a. Gakusei-ga   kinoo   san-nin   hasitta.

          student-NOM   yesterday   3-CL   ran

          'Three students ran yesterday.'

      b. Hanako-ga   hon-o   ni-satu   yonda.

          Hanako-NOM book-ACC   2-CL   read

          'Hanako read two books.'

If the DP is inside a PP, it cannot support a floated numeral quantifier because it does not c-command the quantifier.

(38) *Hito-ga   [pp [DP mura] kara] futa-tu kita.

      People-NOM   village from 2-CL   came

      Intended: 'People came from two villages.'

In Miyagawa (1989), it is argued that case markers have this property of not inhibiting the DP from c-commanding an element below the DP because the case marker adjoins to the DP.

(39)   ~~DP~~

      DP   CASE MARKER

The higher and the lower DPs together constitute the actual projection of the DP, and this DP may c-command elements outside the DP. In this adjoined structure, the case marker is not dominated by the DP, because it occurs "between" the two segments of the DP (May 1985).

Saito (2018), extending his earlier (2016) work, suggests that case marking renders the node "weak," which has the effect of blocking projection of the case-marked XP. The search

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procedure for labeling would then naturally lead to the sister node projecting, which avoids a POP. This idea is formally stated as the following:

(40)   Case marking

Case markers are heads that are inert for the purpose of labeling.

This is our rendition of Saito's (2018) idea of making a node "weak." In our view, the case marking does so because it is inert for labeling, as we can see by the adjuction structure it takes when adjoining to a DP. We can see this inert nature of case marking in the Q-float data. Because the case marker cannot furnish its own label, the only possible structure is by adjunction, in which the DP itself furnishes the label for the entire structure that contains the case marker. As a result, the DP is able to c-command a floated quantifier. In contrast, if a postposition occurs with the DP, the postposition does project, which prohibits the DP from c-commanding a floated quantifier.

The inert nature of case marking allows us to directly capture its function as a projection blocker, again following the general suggestion of Saito. The case-marked DP has the structure {DP, CASE}; given the adjunction structure, neither member of the pair dominates the other. This is equivalent to {XP, H}, and by the Labeling Algorithm, search would find H as the closest element to project. However, there is a problem. Case marking is inert for labeling, by the fact that it does not project, so the search does not obtain a viable candidate for labeling. The search thus is blocked, and it must turn to the other possible candidate, which is the sister to the DP, such as the TP.[12]

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[12] An anonymous reviewer wonders why, once the search is blocked with case marking, the DP is not then searched to (inappropriately) become a target for labeling. We must assume that for

As a final note on case marking and projection blocking, recall in Chomsky (2013) that movement was one way to avoid a POP, by having an offending XP move out of the sister position of a YP, allowing the YP to project. If what we observed for case marking, and what we speculated in footnote 1 about movement are on the right track, they have a surprising commonality. In both cases, an entity that should project is somehow deprived of this capability, allowing the sister node to project. For case marking, it is due to the inert nature of the case marker head. In the case of movement, the lower copy, which still exists in the offending sister position to YP, has been bleached of categorical features that would otherwise inappropriately project, leaving only semantic features necessary to interpret the copy. In this way, the offending copy has been rendered inert for projection purposes to avoid a POP.

3.3 Differential object marking

What we observed for case drop in Japanese resembles differential object marking observed in other languages. Here we will look at differential object marking in Turkish to show that the presence and absence of morphological case marking we observed in Japanese is also found with DOM in Turkish, and that it confirms our view of case marking relative to labeling. In Turkish, the phenomenon directly shows the connection between case marking and labeling: Case marking shows up only when a POP occurs.

In Turkish the object may occur bare, or it may be accompanied by morphological accusative case marking (Kelepir 2001, 2004; Kornfilt 2008 , forthcoming; Özge 2011; von Heusinger and Kornfilt 2005, 2017).

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each of the binary nodes, search is done simultaneously and labeling is carried out as soon as an appropriate label is located.

(41) 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). We saw this for Japanese case-

drop/case-marked environments as well. 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, as we saw in Japanese.

(42) 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.

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(43) 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

(44) 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 that the cased DP moves outside of the VP is generally assumed in the field;
in fact the DP is moving outside of vP if we assume that the adverb 'completely' occurs as a vP
adverb. The object is thus in the structure {αP, βP}, and case marking is required on the object to
resolve the POP.[13]

We assume that, just as in Japanese, the case marker in Turkish adjoins to the DP,
creating the set {DP, CASE}. And just as in Japanese, case marking in Turkish is inert for the
purpose of labeling, which blocks the projection of DP.

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[13] An anonymous reviewer notes that the case-marked object in Turkish need not be viewed as
moving out of VP. For our approach, that is not a problem; it is redundant, since the VP is
labeled appropriately by the head V (or v), and there is a projection blocker on the object DP in
the form of case marking. This redundancy per se is not a problem in our approach.

Thus, DOM is a phenomenon that directly reflects the need to label structures. In a structure that does not trigger POP, as in the case of the object occurring adjacent to V, no case marking occurs on the object DP because the structure {DP, H} is sufficient for labeling the projection. On the other hand, if the object moves out of the VP, the object is in the structure {DP$_{OBJ}$, XP} and case marking must occur on the object DP to avoid a POP.

3.4 Japanese and Turkish subjects

We have seen that there are two functions that a particle has relative to labeling.

(45)   The labeling function of particles

    (i)   Attaches to a non-projectable element => induces projection

    (ii)   Attaches to a projectable element => blocks projection

To label a node, one of these is required when a potential POP would occur. In this regard, the subject in Japanese and Turkish illustrates these functions of a particle in a minimal way.

(46)   Taroo-ga   kono hon-o   Hanako-ni   ageta.

    Taro-NOM   this book-ACC   Hanako-DAT   gave

    'Taro gave this book to Hanako.

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

    Ahmet(NOM)   this   book-ACC   Berna'-DAT   give-PAST-3SG

    'Ahmet gave this book to Berna'

The subject in Japanese is marked with the case marker, which avoids the POP problem for {DP, TP}. In Turkish, the subject does not have any morphological case marking, but instead the T has agreement, which avoids the same POP.

While Japanese consistently works as described in both matrix and subordinate environments, the situation differs for Turkish. The complement subject may not have any case marking, as in the matrix clause, or it may be accompanied by the genitive case marker.
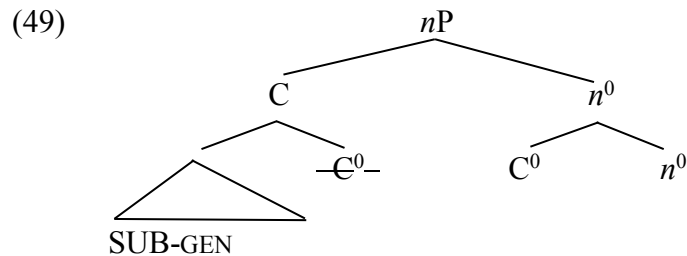
(48)   a.   [Sen   ev-de   yemek pişir-ecek-sin]   (diye)

              you(NOM) home-LOC food   cook-FUT-2SG(verbal Agr) (saying)

              duy-du-m

              hear-PST-1SG

              '(I) heard that you will cook food at home.'

      b.   [Sen-*in*   ev-de   yemek pişir-eceğ-in]-i   duy-du-m

              you-*GEN*   home-LOC food   cook-FUT-2SG-ACC hear-PST-1SG

In (48a) the subordinate subject 'you' does not have any case marking, and the agreement is in the verbal paradigm, while in (48b) the same subject has the genitive case marker and the agreement is in the nominal paradigm. While (48a) is what we expect given that agreement resolves the POP, (48b) appears to be redundant, having both a case marker and agreement.

There is a recent analysis of the agreement pattern we see in the Turkish complement clauses that does not deem it redundant for the subject with the genitive morphological case marker to coexist with agreement.[14] Contrary to the traditional generative approach that both the verbal and nominal agreements are in the same position (e.g., Kornfilt 2006; Ulutaş 2009), Colley and Davis (2017) argue that the two agreements occupy different positions. While the verbal agreement occurs on T as expected, having inherited it from C (Chomsky 2008), they argue that in the nominalized version, the C with the φ-probe raises to the small *n* head that takes

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[14] We are grateful to İsa Kerem Bayırlı for assisting us with this portion of the paper on Turkish complement agreements.

the CP as its complement, so that the agreement occurs on this C-*n* complex. Below is the

structure they give for the genitive-subject complement clause (slightly simplified to exclude

material not relevant to our discussion).

(49)

$$nP$$

C n^0

   SUB-GEN   -C⁰-   C⁰ n^0

(49) tree diagram: *n*P branches to C and n^0. C branches to SUB-GEN (triangle) and -C⁰- (struck through). n^0 branches to C⁰ and n^0.

The C⁰ head with the agreement feature raises to *n*, thereby expanding the domain from CP to *n*P

(cf. den Dikken 2007; also Gallego 2010 and Wurmbrand 2013), which forces the agreement to

hold in the nominal paradigm instead of the verbal paradigm, similar to simple nominal

agreement, as in:

(50)   sen-in   şapka-n

        you-GEN   hat-2SG

        'your hat'

        For the verbal agreement (VA), it is possible to argue that it occurs at T instead of C.

(51)   Biz   sen   gel-di-n   diye   düşün-dü-k.

        we(NOM)   you(NOM)   come-PST-2SG.VA   C   think-PST-1PL.VA

        'We thought that you came.'

Here there is verbal agreement on the embedded verb and there is an overt complementizer. The

complementizer does not show agreement but the tensed verb does, which suggests that verbal

agreement is on T and not on C.

        Nominal agreement (NA) exhibits a different pattern.

(52) Biz   sen-in   gel-diğ-in-i   düşündük

      we(NOM) you-GEN   come-NOM-2SG.NA-ACC   think-PST-1PL.VA

      'We thought that you came.'

This reflects Colley and Davis's (2017) analysis that agreement is on C that has moved to *n* and

not on T.[15] There is a piece of independent evidence for this idea that the nominal agreement is

higher in structure than the verbal agreement. Kural (1993) has argued that the nominalizer is

actually a complex that consists of the past tense marker *-DI* and the complementizer *-K*

(realized as *ğ* for phonological reasons) . Under this analysis, the gloss of (52) would be as in

(53) below, and this suggests that we are really dealing with agreement on C.

(53) Biz sen-in   gel-di-ğ-in-i   düşündük

      we   you-GEN   come-PST-C-2SG.NA-ACC   think-PST-1PL.VA

The account above points to the conclusion that the co-occurrence of the morphological

genitive case marking and agreement is not redundant: The agreement that occurs with the

nominative DP, which lacks any case marking, occurs on T, while the nominal agreement occurs

higher, on C-*n*. The nominal agreement, failing to occur on T, leaves a POP for TP, {DP, TP}.

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[15] An anonymous reviewer wonders what the relation is between the C-*n* analysis of Colleen and
Davis and the nominal-paradigm agreement in a regular DP in Turkish. The nominal-paradigm
agreement within a regular DP is thought to originate at D. Colley and Davis (2017) argue that
the clausal nominal-paradigm agreement comes from the C-*n* combination. By this analysis they
intend to capture the idea that the clausal φ-agreement originates uniformly at C. Where the
subject receives the genitive case marking, this C incorporates to *n*, which leads to the nominal
paradigm. A way to make the DP and clausal agreement scheme parallel is to assume, contrary to
Colley and Davis, that the C incorporates to D, so that the nominal paradigm is a function of the
C-D complex.

The morphological case marking addresses this POP, while the nominal agreement allows the C^0/n^0 to project. Below, we will see a similar case from Bantu that at first blush appears to be redundant, but on further analysis the DP with morphological case marking and the agreement occur at a distance to address potential POP in two different points in the structure.[16]

3.5 Augment vowels in Bantu

Are there dependent morphemes other than case marking that function to block projection? Bantu has what are called augment vowels, which attach as a prefix to DPs. Halpert (2012) argues that the augment vowel functions similarly to case marking; she assumes that it is self-assigned to the nominal as inherent case. This suggests that Bantu in fact has case marking despite its traditionally "caseless" characterization (see Baker 2003 and references therein). We will demonstrate this with the simplest cases.

(54) 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/PST-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/PST-buy-FV   fruit.5

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[16] There is an analysis of the two agreement paradigms in Turkish, verbal and nominal, that mirrors some of what we will observe in Bantu: Kornfilt and Whitman (2012) argue that the genitive subject occupies a position higher than the nominative subject. This would also resolve the apparent redundancy of morphological case marking and agreement.

'No woman bought fruit.'

The example in (54a) shows that 'woman' in the object position may occur without the augment vowel, while in (54b), it occurs with the augment vowel in the subject position; the augment vowel matches the noun class of the nominal 'woman'. The example in (54c) 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 one expects of Case. In the object position it need not occur, but once a DP moves, the augment vowel must occur. And just as with DOM, as we saw in languages such as Turkish, a DP with the augment vowel has topic properties, a point we will return to below. It is also possible for an object that has not moved to the front of the sentence to take the augment vowel.

(55)   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 structure.[17] This example also demonstrates that the augment vowel, though functioning like a case marker, is not part of a morphological-case system assigned by a head such as T or *v*, or the Dependent Case scheme.

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

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 (55). Though not strictly a case marker, we agree with Halpert (2012) that it has the same function with regard to case marking; from our point of view, it is there to avoid a POP.

Assuming with Halpert (2012) that the augment vowel is a self-marking on the nominal that functions in a similar way to case marking in other languages, it would be reasonable to view augment vowels as separate morphemes that carry this function. We can in fact enhance Halpert's insight about augment vowels by showing that it has the same function as case marking in blocking projection. We can adopt what we said for case marking in Japanese and Turkish: The augment vowel, which is the head in {H, DP}, cannot project because it is inert for projection. As a result, further projection is blocked.

Along with the augment vowel, which essentially functions as case marking, Bantu has agreement in which T agrees with the noun class of the element at the head of the sentence. The following Kinande examples show the subject, the object, and the locative moving to the head of the sentence, with the verbal element agreeing with what has moved.

(56) 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*

As already noted, the fronted phrase must be accompanied by an augment vowel. Thus, in these examples, there is agreement on T, which induces projection, and the augment vowel, which blocks projection. Just as we saw for Turkish embedded constructions, this is redundant in appearance, but just as in Turkish, the fronted phrase turns out not to be in Spec,TP.

As noted by Baker (2003) and Progovac (1993), the agreeing phrase must be interpreted as definite (or specific). This is illustrated with the object reversal order in (56).

(57)   Eritunda,   n-a-ri-gul-a.

        fruit.5   1SG.S-T-OM5-buy-FV

        'The fruit, I bought it.'

In this reversal construction, the object is in a position to trigger agreement on the verbal inflection, and it must be interpreted as definite (i.e., as a topic). This is claimed to be true for all agreeing phrases. Baker notes that "[t]rue polysynthetic languages…always have agreement and always have dislocation" (2003:112). What Baker means by "dislocation" is that he views the agreeing phrase such as the object in (55) as being somewhere above Spec,TP—he assumes that it is in a higher Spec,TP—in a position comparable to the dislocation position in languages such as Italian (e.g., Alexiadou and Anagnostopoulou 1998). On first blush, it appears that Bantu redundantly solves a POP: It has rich agreement (which allows pro-drop), and it has augment vowels that function similarly to case marking in blocking projection. However, Baker's (2003) analysis shows that there is no redundancy. The agreement allows TP to project without a specifier, much as in Romance. But by the dislocation property of polysynthetic languages, of which Bantu is a typical case, the fronted DP moves to a "dislocated" topic position above the

TP, as Baker argues. In that position, there is a POP, and the augment vowel is attached to resolve this POP. In this way, the augment vowel is similar to the topic marker -*wa* in Japanese.[18]

4 Conclusion

We have argued that many functional elements have a dual role. Along with their specific functions, they assist in the labeling of structures, by either inducing projection of an item that cannot otherwise project (e.g. in the case of the Japanese Q-particle) or blocking projection of an item to avoid a problem of projection (e.g. in the case of Japanese case markers, à la Saito 2016, 2018). By viewing these functional elements in this way, we capture both the diversity and the uniformity of language. On the one hand, languages contain functional elements that have a wide range of diverse functions such as agreement, many of which are not found in all languages. On the other hand, many of these functional elements have the uniform function of assisting in the labeling of structures. Thus, we see that behind the variability, there is a strong uniformity to language.

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[18] We are grateful to an anonymous reviewer for encouraging us to clarify the role of augment vowels vis-à-vis labeling.

Competing Interests

The authors have no competing interests to declare.

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