

# PRO AS NOMINATIVE ANAPHOR

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In this paper I claim that PRO and anaphors are the same lexical item (ANPHR), and that their different phonetic forms are due to their different Case values. Namely, nominative ANPHR is realized as PRO, and ANPHR with any other Case is realized as *-self*. ANPHR is licensed by  $\phi$ -Agree, which takes the place of control and binding. Locality of control/binding results from the minimality constraint on Agree. When ANPHR fails to undergo Agree, it leads to pronominal PRO or 'exempt' anaphor, whose referent is determined by pragmatic rules.\*

**Keywords:** PRO, anaphor, Case,  $\phi$ -Agree

## 1. Introduction

There have been attempts to account for control and binding in a uniform way. One of such attempts is Bouchard (1983), who suggests that PRO and reflexive anaphor *-self* are the same lexical item, and the different phonetic forms are responsible for Case.<sup>1, 2</sup> Namely, PRO

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<sup>1</sup> Bouchard (1983) does not regard reciprocal anaphor *each (other)* as genuine anaphor but as quantifier. For one reason, it appears in pronominal position, as exemplified in (i).

(i) They read *their/each other's/\*themselves'* books.

This line of discussion may not be unproblematic. The bound pronoun *their* in (i) can be considered an allomorph of *themselves* in genitive position. If so, *each other* shares the distribution with reflexive anaphors. Here I do not decide whether this is really the case, limiting my concern to *-self*.

<sup>2</sup> In this paper I do not deal with PRO in gerundive clauses. It behaves in a

appears where the item is not assigned Case, whereas *-self* appears where the item is assigned Case.

Including his, however, attempts to account for the distribution of PRO in terms of Case tend to be theory-internal.<sup>3</sup> How can we assert that PRO in (1) does not receive nominative Case?

(1) John tried [PRO to win the election].

Suppose that the null form reflects the absence of Case, as suggested by Chomsky's (1981) Case Filter. The next question we need to ask is how the Case Filter assumption should be validated on independent grounds. Without such validation, the Case Filter and the presence of PRO account for each other circularly. The same problem remains in the null Case hypothesis suggested by Chomsky and Lasnik (1993).

There is an empirical problem, too. Subjects in nonfinite clauses *are* assigned Case in many languages. The following Spanish examples are taken from Mensching (2000):

(2) a. Lo mejor sería [ir yo también].  
 the best would-be to-go I also  
 'The best thing would be that I also go.'  
 (Mensching (2000: 25))

b. [Para yo presentarme a las elecciones]  
 for I to-present-R CL to the elections  
 sería necesario mucho dinero.  
 would-be necessary much money.  
 'To present myself at the elections, a lot of money  
 would be necessary.'  
 (Mensching (2000: 25))

In both examples, nominative *yo* 'I' appears in nonfinite subject position.<sup>4</sup> Given these examples, it seems that T, finite or nonfinite,

somewhat different manner from PRO in a nonfinite clause, as shown in (i) and (ii).

(i) PRO/Rome's destruction of the city

(ii) John opposed PRO building a nuclear power plant. (PRO≠John)

(i) shows that PRO and R-expression share the distribution, and (ii) shows that PRO sometimes refuses local control (cf. Wilkinson (1971)). As yet it is not clear whether PRO really exists in subject position in gerundive clauses. I leave this for future research.

<sup>3</sup> This has been pointed out in the literature. As an example of recent criticism, see Manzini and Roussou (2000).

<sup>4</sup> Nominative is not the only form for subjects in nonfinite clauses. According to Mensching (2000), accusative is default Case in French, and either nominative or

can assign nominative Case. If this is true in English too, PRO in example (1) should bear nominative Case.

If PRO is assigned nominative Case by nonfinite T, we will find that PRO and *-self* are in complementary distribution:

- (3) a. PRO only appears in nominative position.  
 b. *-self* never appears in nominative position.

As will be shown in section 3, unbound *-self* is acceptable if pragmatic rules assign it a proper reading. I will call such reflexives *exempt anaphors*, following Runner (2002). Since exempt anaphors are constrained pragmatically, they should in principle be allowed in any syntactic position. The reality is, however, that exempt anaphors never appear in nominative position. In contrast, PRO is allowed only in nominative position. This finding leads us to suggest the following PF rules:

- (4) a. ANPHR with nominative Case is realized as PRO (null).  
 b. ANPHR with other Case is realized as *-self*.

All anaphoric nominals are enrolled as ANPHR in the Lexicon. It is assigned a phonetic form at PF according to the PF rules (4). ANPHR is null if it bears nominative Case, whereas ANPHR is overt if it bears some other Case value. In the latter case, ANPHR's  $\phi$ -values also affect the exact realization form. For example, ANPHR with [3rd, sg., masc.] values will be realized as *himself*.

The aim of this paper is to show that the above assumption, together with the recent minimalist assumptions developed by Chomsky (1998, 2001a, 2001b), accounts for the relevant data on control and binding in a simple way. Under the feature-checking-under-Agree assumption, ANPHR should undergo  $\phi$ -Agree with the closest c-commanding DP, creating the bound reading of ANPHR. Agree thus takes the place of control and binding in the minimalist framework. I also claim that a pronominal reading obtains when ANPHR fails to Agree, and is assigned interpretation by pragmatic rules.

The organization of this paper is as follows. In the next section I

accusative is observed in Italian. An anonymous *EL* reviewer points out that in English, too, overt subject is realized in non-nominative form, as in *I believe him to be innocent*. I consider the ECM construction in section 4.2. The discussion in 4.2 might be applicable to French and Italian data.

consider typical cases of control/binding. Section 3 deals with cases where syntactic control/binding is impossible. Section 4 takes up exceptional cases such as *promise*-sentence, ECM, expletive, and raising constructions. Section 5 examines the validity of newly employed assumptions. Section 6 briefly refers to a possible cross-linguistic extension. Section 7 concludes the discussion.

## 2. ANPHR as Anaphor

### 2.1. Subject Control/Binding

Typical control/binding cases are given a simple account in the suggested analysis. Consider the following examples:

- (5) a. John admires *himself*.  
 b. John tried [*PRO* to win the race].

Suppose that the derivations of (5a) and (5b) have reached the stages (6a) and (6b), respectively.

- (6) a. [<sub>v\*P</sub> John v\* [<sub>VP</sub> admires ANPHR]]  
           [ ϕ ]                                  [ ϕ unvalued ] [Case(Acc)]  
 b. [<sub>v\*P</sub> John v\* [<sub>VP</sub> tried [<sub>TP</sub> ANPHR to [<sub>v\*P</sub> t win the  
                                   [ ϕ ]                                  [ ϕ unvalued ] [Case(Nom)]  
                                   race]]]]]

ANPHR in (6a) is an internal argument of *admires*, and ANPHR in (6b) is an external argument of *win*. Notice that the selection of ANPHR in (6a) is optional: The internal argument can be either pronominal (e.g. *me*) or R-expression (e.g. *Tom*). On the other hand, the selection of ANPHR in (6b) is obligatory: The sentence would be deviant if *win* selected pronominal or R-expression. To guarantee the obligatory selection, I assume the following LF condition:

- (7) A nonfinite clause must contain an anaphor in its highest argument position.

I postpone considering why (7) is the case until section 5. For the time being, let us just assume ANPHR is obligatorily selected in (6b).

ANPHR in (6a) is assigned accusative Case by *admires*, whereas ANPHR in (6b) is assigned nominative Case by nonfinite T.<sup>5</sup> Each

<sup>5</sup> Precisely speaking, ANPHR's Case value is determined as a reflex of Agree with V/T. V/T also bears unvalued ϕ-features. Under matching of ϕ-features

ANPHR's  $\phi$ -features are valued under Agree with a probe with matching features. When *John* is merged into the syntactic object, therefore, it Agrees with ANPHR. Agree thus takes place between *John* and ANPHR, assigning *John*'s  $\phi$ -values to ANPHR. Each application of Agree observes a minimality constraint. In (6a), Agree takes place within the  $v^*P$  phase. In (6b), too, Agree takes place within the matrix  $v^*P$  phase.

When the derivation completes, therefore, ANPHR in (6a) bears an accusative Case value and  $\phi$ -values that are the same as *John*'s. ANPHR in (6b), on the other hand, bears a nominative Case value and  $\phi$ -values that are the same as *John*'s. What PF form will be assigned to each ANPHR in (6)? Given the PF rule (4b), accusative ANPHR in (6a) will be realized overtly as *-self*. The exact form is specified by its  $\phi$ -features, namely [3rd, sg., masc.]. Thus, ANPHR is realized as *himself*, as in (5a). On the other hand, nominative ANPHR in (6b) is assigned a null realization form by the PF rule (4a). Therefore PRO appears in (5b).

Let us now consider how ANPHR receives a bound reading at LF. Although Chomsky (1998) regards unvalued features as [–Interpretable] uniformly, it should not hold for unvalued  $\phi$ -features of ANPHR. The  $\phi$ -values constitute necessary information at LF for ANPHR to refer to some entity. Therefore each ANPHR in (6), given *John*'s  $\phi$ -values, refers to *John*.

An anonymous reviewer comments that binding/control theories should not necessarily be eliminated in favor of the  $\phi$ -Agree analysis. In fact, the suggested analysis costs a new invention of [+Interpretable] unvalued  $\phi$ -features, which seems not preferable for minimalist reductionism. However, the cost is imposed only on the Lexicon, and cuts down the inventory of syntactic devices. Namely, syntax need not

between (V/T, ANPHR), ANPHR's Case feature is assigned a value. It must be noted that this application of Agree does not value the  $\phi$ -features either of ANPHR or of V/T, since neither bears fixed  $\phi$ -values to assign. After  $\phi$ -Agree between (V/T, ANPHR), therefore, ANPHR's  $\phi$ -features remain unvalued, waiting for a probe with fixed  $\phi$ -values. For simplicity's sake, I will call it 'Case assignment.' Although Agree between (V/T, ANPHR) does not value  $\phi$ -features, the relation is maintained by a kind of coindexation. When ANPHR receives fixed  $\phi$ -values under Agree with an antecedent later in the derivation, V/T will also receive the identical values through the index.

motivate binding/control operations since unvalued features of ANPHR motivate themselves to find an antecedent. Moreover, syntax need not set up a locality condition on binding/control since  $\phi$ -Agree itself is subject to locality, as will be discussed in section 3.2. Under the suggested analysis, therefore, the idiosyncrasies of ANPHR are all specified in its lexical definition as having [+Interpretable] unvalued  $\phi$ -features. Local and obligatory binding/control relations are obtained as the result of a general syntactic operation, i.e.  $\phi$ -Agree.

## 2.2. Object Control/Binding

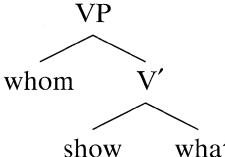
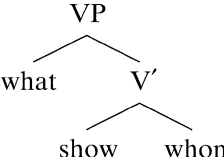
Let us next consider the cases in which an object serves as a controller/binder for ANPHR. Consider the following examples:

- (8) a. John<sub>1</sub> showed Bill<sub>2</sub> *himself*<sub>1/2</sub>.  
 b. John<sub>1</sub> persuaded Bill<sub>2</sub> [*PRO*<sub>\*1/2</sub> to buy the house].

It is not easy to determine what VP structure should be assigned when a verb selects two objects. At least, however, we can examine c-commanding relation between them by means of Superiority. Examples in (9) show that neither object DP asymmetrically c-commands the other DP, whereas examples in (10) show that the matrix object always c-commands the argument in the nonfinite clause.

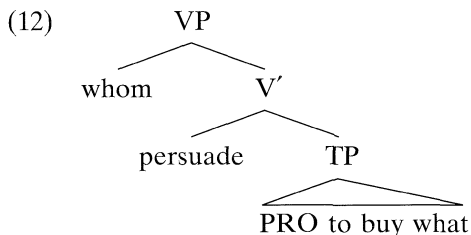
- (9) a. Whom did John show *t* what?  
 b. What did John show whom *t*?  
 (10) a. Whom did John persuade *t* [*PRO* to buy what]?  
 b. \*What did John persuade whom [*PRO* to buy *t*]?

Assuming the binary branching phrase structure, the higher argument must asymmetrically c-command the lower argument. Hence the absence of Superiority in (9) must be due to the following ambiguous VP structures:

- (11) a.  b. 
- (*Show* raises to *v*\* afterward.)

In (11a) *whom* asymmetrically c-commands *what*, while in (11b) *what* asymmetrically c-commands *whom*. In effect, either *wh*-phrase can undergo *wh*-movement.

Situation differs in (10). Deviance of (10b) indicates that *whom* always c-commands the element in the nonfinite clause, as in (12).



The above structures are further attested by A-movement facts, as shown in (13) and (14).

- (13) a. Bill was shown *t* the results.  
 b. The results were shown Bill *t*.
- (14) a. Bill was persuaded *t* [PRO to buy the house].  
 b. \*The house was persuaded Bill [PRO to buy *t*].

If VP structures as in (11) and (12) are correct, then indirect object DP may or may not c-command direct object DP, whereas direct object DP always c-commands elements in complement nonfinite clause.

With this in mind, let us return to (8), repeated here as (15).

- (15) a. John<sub>1</sub> showed Bill<sub>2</sub> *himself*<sub>1/2</sub>.  
 b. John<sub>1</sub> persuaded Bill<sub>2</sub> [*PRO*<sub>\*1/2</sub> to buy the house].

As for (15a), *Bill* may or may not c-command *himself*. When the verb projects VP as in (11b), the subject *John* locally c-commands the direct object *himself* (or, ANPHR in the narrow syntax). Under Agree, ANPHR receives *John*'s  $\phi$ -values and obtains the bound reading. At PF, ANPHR, with accusative Case, is realized overtly as *himself*. One of the possible readings for (15a) thus obtains.

The other reading occurs when the verb projects VP as in (11a), in which *Bill* c-commands *himself* (ANPHR). Since the Minimal Link Condition (MLC) requires the application of Agree to be local, *Bill* must Agree with ANPHR, assigning its  $\phi$ -values to ANPHR. At PF, ANPHR, with accusative Case, is realized as *himself*.<sup>6</sup>

<sup>6</sup> A reviewer points out that Barss and Lasnik (1986) judge an example equivalent to (9b) as unacceptable. Also, some speakers do not accept a passive sentence as in (13b). As far as my informants are concerned, there is a correlation as to the acceptability of these two. If one accepts (9b), then s/he also accepts (13b). The reverse is also true. This suggests that (11a) is the default VP structure and for some speakers (11b) is hard to accept. The reviewer also suggests that if the present discussion is on the right track, then it can be predicted that only those who

As for (15b), on the other hand, ambiguity does not occur since there is only one possible structure as shown in (12) in which *Bill* c-commands PRO (ANPHR). Under the local c-commanding relation, *Bill* and ANPHR Agree, assigning ANPHR a bound reading. At PF, ANPHR, assigned nominative Case by nonfinite T, is realized as PRO.

### 2.3. Ambiguous Binding

As final examples in this section, let us consider (16).

- (16) a. John<sub>1</sub> wonders when Bill<sub>2</sub> bought pictures of *himself*<sub>\*1/2</sub>.  
 b. John<sub>1</sub> wonders which picture of *himself*<sub>1/2</sub> Bill<sub>2</sub> bought *t*.

Whereas the anaphor embedded in the object, *himself*, is unambiguously bound by the local binder *Bill* in (16a), it is not the case when the object is fronted to the clause-initial position as in (16b), in which *himself* can refer to either the embedded or the matrix subject. The suggested analysis predicts the ambiguous readings in (16b), adopting Chomsky's (2001a) MLC definition.

Chomsky (2001a: 27) assumes that "the probe-goal relation must be evaluated for the Minimal Link Condition (MLC) at the strong phase level." In other words, it is evaluated whether legitimate Agree has applied. The evaluation would be redundant if Agree were part of derivational mechanism which automatically applies for every local and active (probe, goal) pair. The presence of the MLC evaluation, therefore, presupposes that an application of Agree is an option. Non-application of Agree does not crash the derivation on the spot, but creates a wrong representation to be judged illegitimate at the strong phase level.

Bearing this in mind, let us consider how (16b) is derived. Suppose that the following structure has been obtained when constructing the embedded  $v^*P$  phase:

- (17) [<sub>v\*P</sub> Bill v\* [<sub>VP</sub> bought [<sub>DP</sub> which picture of ANPHR]]]  
 [  $\phi$  ] [wh] [  $\phi$  unvalued ]

accept (11b) allow a subject-binding reading in (15a). The result, however, is that all speakers allow a subject-binding reading in (15a), and some of them do not accept an object-binding reading. For this I have no clear account. It might be that binding possibilities are not determined simply by c-command, but another factor such as "subject orientedness" is also involved (cf. Chomsky (1981)). I leave this for future research.



At this stage, ANPHR has two options. One is to undergo Agree immediately with *Bill*. ANPHR will then be interpreted as dependent on *Bill*, and realized overtly as *himself* for its oblique Case value assigned by P (*of*).

The other option is to move to SPEC- $\nu^*$ , together with the *wh*-word, without undergoing Agree with *Bill*. The object needs to move to the edge position before Spell-Out applies, since otherwise it would be invisible from a probe (i.e. [wh] C). It would seem to violate the MLC at first sight. Following Chomsky's (2001a) MLC, however, the postponement is unproblematic since the MLC is not relevant in the derivation.

When the  $\nu^*$ P phase is completed, the following structure is obtained:

- (18) [ $\nu^*$ P [<sub>DP</sub> which picture of ANPHR] Bill  $\nu^*$  [<sub>VP</sub> bought *t*]]  
               [wh]   [ $\phi$  unvalued] [  $\phi$  ]

The MLC is applied at this level, and checks if Agree has taken place when possible (thus necessary). Although ANPHR has avoided the application of Agree with *Bill* at stage (17), it does not pose a problem since the evaluation domain at Spell-Out is the complement domain of a phasal head. In (18), therefore, the evaluation of the MLC is applied only to VP. The unvalued  $\phi$ -features in SPEC- $\nu^*$  are legitimate.

Suppose that the derivation continues and the following matrix  $\nu^*$ P phase has been constructed:

- (19) [ $\nu^*$ P John wonders [<sub>CP</sub> [<sub>DP</sub> which picture of ANPHR] C  
                       [  $\phi$  ]   [  $\phi$  unvalued ]  
               [ $\nu^*$ P *t* Bill  $\nu^*$  [<sub>VP</sub> bought *t*]]]

The *wh*-phrase has moved to SPEC-C, attracted by the EPP-feature on C. Since SPEC-C is an edge position, the *wh*-phrase is visible from outside. Thus in (19) *John* searches out ANPHR in the *wh*-phase, and undergoes Agree. In this case ANPHR, realized as *himself* for its oblique Case, is interpreted as dependent on *John*.

To sum up, the ambiguous readings in (16b) result from two options for ANPHR. It can either undergo Agree immediately with a local probe, or postpone Agree until it finds another probe in the moved position. The second option is possible only when the phrase containing the anaphor undergoes movement as in (18). Hence in (16a) the second option is impossible, and *himself* (ANPHR) only refers to the local binder *Bill*.

### 3. ANPHR as Pronominal

In this section, let us consider how pronominal PRO and exempt anaphors are explained by the suggested analysis. A pronominal reading is obtained either when ANPHR has no c-commanding DP, or when the locality constraint prohibits ANPHR to undergo Agree with a c-commanding DP. In either case pragmatic rules assign ANPHR an appropriate reading.

#### 3.1. When ANPHR Has No Potential Binder

First, let us consider the following examples:

- (20) a. Pictures of *oneself* are pleasing. (Hyde (2000: 43))  
 b. [*PRO* to dance] is fun.

(20a) and (20b) constitute the following structures (21a) and (21b), respectively, at some stage of derivation.

- (21) a. [<sub>TP</sub> [<sub>DP</sub> pictures of ANPHR] are pleasing]  
           [ $\phi$  unvalued]  
 b. [<sub>TP</sub> [<sub>TP</sub> ANPHR to [<sub>v\*P</sub> t dance]] is fun]  
       [ $\phi$  unvalued]

ANPHR in each example has no matching probe throughout the derivation.<sup>7</sup> At LF, therefore, ANPHR's  $\phi$ -features remain unvalued. It does not cause the LF to crash since  $\phi$ -features of ANPHR are [+Interpretable], as suggested in section 2. ANPHR's  $\phi$ -features are necessary for semantic interpretation. The LF representation therefore converges with unvalued ANPHR. Its interpretation is determined by pragmatic rules that link ANPHR to some entity available/appropriate in the discourse. A default reading might be a generic reading, which links ANPHR to people in general.

At PF, each ANPHR is assigned a phonetic form according to its Case. In the PF representation resulting from (21a), ANPHR is realized overtly since it is assigned oblique Case by P (*of*). The exact realization form is specified by its  $\phi$ -values. In this case ANPHR has no fixed  $\phi$ -values, hence realized in a default form, *oneself* as in (20a). On the other hand, when (21b) reaches a PF representation, ANPHR's

<sup>7</sup> *Pictures* in (21a) does not make a probe for ANPHR since it would violate the *i*-within-*i* condition.

realization form is covert since it is assigned nominative Case by non-finite T. Thus PRO with a pronominal reading is obtained in (20b).

The anaphor in the following example is also accounted for by pragmatic rules:

- (22) John<sub>1</sub> was really going to get even with Mary. That picture of *himself*<sub>1</sub> in the paper would really annoy her, as would the other stunts he had planned. (Runner (2002: 175))

Pragmatic rules are not random, but link the anaphor to an entity prominent in the discourse. According to Runner (2002), *John*, the subject of the preceding sentence, provides John's "point of view" with a discourse. In other words, *John* stands as a prominent topic in the discourse (cf. Xue and Popowich (2002)). Therefore, *himself* in the next sentence unambiguously refers to *John*.

### 3.2. When a Potential Binder Is Not Local

Let us now consider examples in (23) in which a binding relation seems to be established across a clause border.

- (23) a. John thought [<sub>CP</sub> that [<sub>TP</sub> [<sub>DP</sub> those pictures of *himself*] were very nice]].  
 b. John wonders [<sub>CP</sub> how [<sub>TP</sub> *PRO* to [<sub>v\*P</sub> shave himself/oneself]]].

The first thing we have to confirm is whether *himself* in (23a) and PRO in (23b) are genuine anaphors, or exempt anaphors assigned a pragmatic reading. Bouchard (1983) provides a test to distinguish between the two. According to Bouchard, an anaphor in an elided VP is recovered only with a sloppy reading, whereas an exempt (or, "false" in Bouchard) anaphor can have either a sloppy or a strict reading. With this in mind, let us consider the following examples:

- (24) a. John [<sub>VP</sub> likes *himself*], and Bill does, too.  
 b. John [<sub>VP</sub> thought that those pictures of *himself* were very nice], and Bill did, too. (Bouchard (1983: 36))

When (24a) reaches LF, VP [*like himself*] will be recovered in the second conjunct and *himself* is assigned a reading. The only possible reading assigned to *himself* is a sloppy reading. Namely, John likes John and Bill likes Bill. In (24b), on the other hand, when VP [*think that those pictures of himself were very nice*] is recovered in the second conjunct, *himself* can have either a sloppy or a strict reading. Namely, Bill admired Bill's pictures, or John's pictures. If Bouchard's test is correct, then the anaphor in (23a) is not a genuine anaphor but a pro-

noun. This inference seems preferable, since binding should be a clause-internal (or, phase-internal) relation.

Let us now consider how *himself* in (23a) is assigned an apparent ‘bound’ reading. The following structure is obtained when constructing (23a):

- (25) [<sub>v\*P</sub> John thought [<sub>CP</sub> that [<sub>TP</sub> [<sub>DP</sub> those pictures of ANPHR]  
       [  $\phi$  ] [  $\phi$  unvalued]  
       ...]]]

Whereas *John* c-commands ANPHR, Agree does not hold between the two across the CP phase. Thus ANPHR’s  $\phi$ -features remain unvalued.

Let us consider how the anaphor is interpreted at LF and PF. At LF, *John*, the matrix subject, introduces *John*’s point of view to a discourse, and ANPHR is made dependent on *John* by pragmatic rules. A PF realization form for ANPHR in (25) is explained as follows. Since ANPHR is assigned oblique Case by P (*of*), its realized form should be overt. However, the exact form is not specified by its  $\phi$ -features since they are not valued. Let us assume that in this case there are two realization patterns. The first option is what we have seen in the discussion of (20). Namely, the unvalued  $\phi$ -features lead to a default realization form *oneself*. The other option is that ANPHR may have any realization form in the paradigm if its  $\phi$ -features are unvalued. *Himself* in (23a) is but one of such random realization patterns. In principle, therefore, ANPHR in (25) can be realized either as *myself*, *yourself*, *themselves*, etc. All of these forms other than *himself*, however, are ruled out for the disagreement between LF and PF. Notice that at LF ANPHR is linked to *John* by pragmatic rules. If ANPHR’s PF form should be *myself*, or *oneself*, then ANPHR’s reading and its PF form contradict each other. In consequence, the LF-PF relations are in concord only when ANPHR is realized as *himself*. The apparent bound anaphor in (23a) is thus obtained.

The same explanation holds for (23b), repeated here as (26).

- (26) John wonders [<sub>CP</sub> how [<sub>TP</sub> *PRO* to [<sub>v\*P</sub> shave himself/one-self]]].

The following structure is obtained when the embedded CP phase is completed:

- (27) [CP how [TP ANPHR to [<sub>v\*P</sub> t shave ANPHR]]]<sup>8</sup>  
           [ $\phi$  unvalued]

Although ANPHR bears unvalued  $\phi$ -features, it does not move to the edge position (SPEC-C) since the unvalued features are [+Interpretable]. After Spell-Out, ANPHR is made invisible from outside. Accordingly, when *John*, the matrix subject, is merged, it does not serve as a probe for ANPHR. ANPHR's  $\phi$ -features thus remain unvalued at LF, hence interpreted by pragmatic rules.

Unlike in (23a), the embedded clause in (26) need not be interpreted under John's point of view. A question denotes a set of possible answers. In (26), then, the embedded question denotes a set of possible ways of shaving. They should not be constrained by the real world: A preposterous way of shaving can be a possible answer to the question. In this sense, the denotation of the embedded question may or may not be dependent on the real-world discourse provided by the matrix clause in which John wonders. It means that ANPHR (PRO) in the embedded question may or may not be linked to an element in the matrix clause. In consequence, ANPHR can have either a default, generic reading or a pragmatically-controlled reading. ANPHR in an interrogative clause, in effect, bears ambiguous readings. In either case, ANPHR is realized as PRO for its nominative Case value.

To sum up section 3, a pronominal reading of PRO and *-self* is obtained when there is no local probe for ANPHR. The absence of a local probe makes ANPHR spelled out with no fixed  $\phi$ -values. Hence ANPHR is assigned a pragmatic reading at LF. Simply put, pragmatic rules link ANPHR to a topic of the discourse. Alternatively, ANPHR may be linked to people in general when there is no appropriate topic.

<sup>8</sup> Agree has taken place between the two ANPHRs. Yet it does not value the  $\phi$ -features since neither ANPHR bears fixed  $\phi$ -values. Thus the external ANPHR's  $\phi$ -features remain unvalued, as shown in (27). As for the  $\phi$ -values for the internal ANPHR, I simply assume that Agree between the two ANPHRs results in a kind of 'coindexing.' Namely, whatever values the external ANPHR is assigned later will be shared by the internal ANPHR through the same index. See footnote 5 for a similar discussion. Therefore the internal ANPHR realizes either as *himself* or as *oneself*, depending on the interpretation of the external ANPHR.

#### 4. Some Exceptional Cases

The suggested analysis has adopted a new assumption that nonfinite T is a nominative Case assigner. Along with this, I have to provide a new account for the ECM and raising constructions. Also, there are constructions that have been long-standing problems for binding/control theories. Below I take up each construction and claim that it can be accounted for with assumptions available in the literature.

The aim of this section is not to show that the suggested analysis can provide a sophisticated account with these constructions, but to show that it is on a par with previous analyses at dealing with exceptional cases. The advantage of the suggested analysis is that it provides a unified account for binding and control without stipulating syntactic devices exclusive to binding/control phenomena. How to deal with exceptional cases is another problem to consider.

##### 4.1. *Promise Sentence*

First, let us consider a *promise* sentence, exemplified in (28).

(28) John promised Mary [PRO to go].

The suggested analysis predicts that the controller should be *Mary*, contrary to fact, since *Mary* seems to be the closer probe for PRO.

Some previous analyses dodge this problem, claiming that *Mary* does not c-command PRO, and I adopt the same strategy here. One of such claims is made by Nakajima (1998) who, following Baker's (1988) UTAH, claims that a Theme argument is base-generated in a higher position than a Goal argument.<sup>9</sup>

In (28), therefore, [*PRO to go*] should be higher than *Mary* when base-generated. *Mary* undergoes obligatory dislocation to the surface position. Assuming that dislocation does not change the c-command

<sup>9</sup> As a reviewer points out, several previous analyses such as Belletti and Rizzi (1988) and Grimshaw (1990) propose a different hierarchy in which Goal is more prominent than Theme. Here I propose a possible analysis following Baker's UTAH. However, Theme >> Goal relation seems adequate at least when one of the arguments constitutes a clause. In section 2.2 I have shown the VP structure (12) in which Theme DP (*whom*) asymmetrically c-commands Goal TP (*PRO to buy what*). If this is a general pattern, then Theme TP (*PRO to go*) should asymmetrically c-command Goal DP (*Mary*) in (28).

relation, *Mary* does not c-command the nonfinite clause. Therefore *John*, the only c-commanding DP for PRO, controls PRO.

#### 4.2. ECM and Expletive Constructions

Let us then consider the ECM construction (29a), which is assigned a structure as in (29b).

- (29) a. John believes Mary to be innocent.  
 b. John believes [<sub>SC</sub> Mary [<sub>TP</sub> ANPHR to [<sub>t</sub> be innocent]]]  
 c. John believes [<sub>TP</sub> Mary<sub>1</sub> to [<sub>t</sub><sub>1</sub> be innocent]]

A structure as in (29c), which has been standard in the literature, is impossible in the suggested analysis. Since I have assumed that nonfinite T is a nominative Case assigner, the nonfinite clause should contain a nominative argument. Hence the nonfinite clause should contain nominative ANPHR (PRO at PF) as shown in (29b).

A similar structure has been proposed in the literature. Here I follow Hyde's (2000) claim that the ECM is another case of object control.<sup>10</sup> In (29b), therefore, ANPHR receives *Mary*'s  $\phi$ -values under local Agree, and at LF it is interpreted as dependent on *Mary*. In this analysis, an ECM 'subject' is selected by an ECM verb. Although a detailed account is beyond the scope of this paper, this claim seems to be supported empirically. Consider the following examples:

- (30) a. Sue estimated Bill's weight.  
 b. \*Sue estimated Bill.  
 (31) a. Sue estimated [Bill's weight to be 150 lbs].  
 b. \*Sue estimated [Bill to weigh 150 lbs].

(Saito's (2002) (9) and (10))

(30) and (31) show that a selectional restriction imposed on *estimate* is relevant even when the verb appears in an ECM construction. This fact is unexpected under the standard analysis in which there is no selectional relation between *estimate* and the ECM subject.

The same account holds for the following example:

- (32) It is likely for John to win.

*John* is not subject in the nonfinite clause, but object of *for*. It some-

<sup>10</sup> More precisely, Hyde (2000) claims that *to*-clauses constitute PP headed by *to*. I continue to dub nonfinite clauses 'TP' since it is not relevant to the current concern.

how c-commands and controls nominative ANPHR (PRO) in SPEC-T:

(33) It is likely [for John [<sub>TP</sub> ANPHR to win]]

Related to the ECM construction, let us consider the expletive construction. Under the suggested analysis, example (34a) should be assigned the structure as in (34b).

(34) a. John believes there to be a man in the room.

b. John believes [<sub>SC</sub> there [<sub>TP</sub> ANPHR to [<sub>VP</sub> be a man in the room]]]

The ECM verb selects a small clause, and assigns accusative Case to *there*. The nonfinite TP contains nominative ANPHR (PRO) in order to satisfy condition (7).

The questions we need to ask here are: What selects ANPHR, and what interpretation does ANPHR have? Here I follow Iwakura (1999), assuming that the expletive is moved out of an associate NP, as illustrated in (35).

(35) There<sub>1</sub> is [<sub>NP</sub> *t*<sub>1</sub> a man] in the room.

*There* is base-generated in SPEC-N as a determiner (or in D under the DP hypothesis). An expletive construction obtains when an EPP (strong D) feature attracts only D to subject position. If this is correct, the precise structure of (34b) will be (36).

(36) John believes [<sub>SC</sub> there [<sub>TP</sub> ANPHR<sub>1</sub> to [<sub>VP</sub> be [<sub>NP</sub> *t*<sub>1</sub> a man] in  
                                  [<sub>φ</sub> def]  [<sub>φ</sub>]  
the room]]]

ANPHR serves as a determiner of the associate (*a man*). Whatever  $\phi$ -set ANPHR bears has been checked off under Agree with the associate. At LF, therefore, ANPHR will have an interpretation related to the associate. (A similar discussion is provided in Chomsky (2001a: 8). Chomsky suggests that in attributive adjectival/participial constructions (e.g. [old/ smashed] car), modifiers bear a defective  $\phi$ -set, which undergoes Agree with a modified N and gets deleted.) Since ANPHR's  $\phi$ -set is defective in (36), *there* undergoes Agree with the associate. At PF, ANPHR is realized as PRO since nominative Case of the whole NP percolates to the determiner.

Notice that condition (7) requires a nonfinite clause to contain ANPHR subject. It can be satisfied either by having an ANPHR argument as in (29b), or by having an ANPHR determiner and attracting it to subject position as shown in (36). Notice also that the following example is correctly excluded as failure of Agree since neither *there* nor ANPHR bears a complete  $\phi$ -set of a fixed value:



- (37) \*John believes [<sub>SC</sub> there [<sub>TP</sub> ANPHR<sub>1</sub> to [<sub>VP</sub> be *t*<sub>1</sub> in the room]]].

### 4.3. Raising Construction

A raising construction is also a possible problem for the suggested analysis. Consider the following example:

- (38) John<sub>1</sub> seems [<sub>t</sub><sub>1</sub> to have won the election].

The suggested analysis has difficulty in motivating subject movement, since *John* should already have been assigned nominative Case by non-finite T. There is another problem. Recall that I have stipulated the following condition:

- (39) A nonfinite clause must contain an anaphor in its highest argument position. (= (7))

Given this, *won* in (38) should not be able to select an overt external argument *John*.

These possible problems are worked out by following minimalist assumptions. Chomsky (2001a, b) proposes that a probe and a goal should be active, and valued features remain active until Spell-Out. With this in mind, let us consider the derivation of (38). At some stage of derivation, the following structure is obtained:

- (40)  $\begin{array}{l} \text{T} \\ \text{[EPP]} \end{array} \begin{array}{l} [\text{VP} \text{ seem} \\ \text{[Case(Nom)}] \end{array} \begin{array}{l} [\text{TP} \text{ John}_1 \text{ to} \\ \text{[v*P } t_1 \text{ have won the election}}] \end{array}]$

Whereas the complement domain (VP) of the embedded v\*P phase has been spelled-out, *John* remains active since it occupies SPEC-T. Hence *John* can be attracted to the matrix subject position.

As an anonymous reviewer correctly points out, this explanation leaves a nontrivial question. That is, how is the Case-assigning feature on the matrix T satisfied? One possible solution might be to assume that *John* can undergo second Case-checking with the matrix T since it is active. It is possible as long as the same Case that *John* already bears (i.e. nominative) is assigned. Another possibility is to follow Bresnan and Moshi (1990) and Wunderlich (1997) and assume that Case is not something to be assigned but a morphological reflection of the argument structure. According to Wunderlich, for instance, an argument is realized in a nominative form if it is the highest of all the arguments selected by a predicate. Hence an internal argument bears accusative Case in an active sentence, whereas it bears nominative Case in a passive sentence in which it is the highest argument. If this is correct, then *John* in (40) bears nominative Case not because T has

assigned that Case value, but because it is the highest argument of *win*. There is no such thing as Case-assignment/checking in syntax, and *John* raises to subject position simply to delete the EPP-feature of T. I do not decide which is a better solution but just mention possible solutions.

After subject raising takes place, the following structure is obtained:

(41) John<sub>1</sub> seems [<sub>TP</sub> t<sub>1</sub> to have won the election].

A-trace is left behind in the highest argument position of the nonfinite clause. Since A-trace is [+anaphoric], the above structure conforms to the condition (39). Notice that (39) is an LF condition. Even if a predicate has selected an overt external argument, the derivation leads to a legitimate LF representation as long as the argument undergoes A-movement, leaving [+anaphoric] trace behind.<sup>11</sup>

#### 4.4. \*PRO in a Finite Clause

Finally, let us consider the following example:

(42) \*PRO won the game yesterday.

There is no way to exclude (42) under the suggested analysis. ANPHR can appear in any position. In this case ANPHR has been selected by *won* in its external argument position, and assigned nominative Case by finite T. Hence ANPHR should be realized as PRO, as shown in (42). Syntactically, therefore, there is no violation that makes the derivation crash.

The deviance should be attributed to the violation of a PF condition.

<sup>11</sup> A reviewer inquires how to exclude the raising derivation of a control sentence as shown in (i).

(i) John<sub>1</sub> tries [<sub>TP</sub> t<sub>1</sub> to win].

This kind of derivation is not allowed under Chomsky's (2001a) Merge assumption. Simply put,  $\theta$ -relations should be satisfied by Merge. (i) is not allowed since the external argument of *tries* is not merged.

The reviewer also points out that whereas the suggested analysis makes no substantial distinction, ECM and control infinitivals *are* different in their tense properties. According to Martin (2001), only [+tense, -finite] T bears a null Case feature. His proposal could be incorporated into the present analysis. Namely, a control/raising verb must select TP complement only in which [+tense] T appears. An ECM verb, on the other hand, must select a small clause (DP+TP) only in which [-tense] T appears. In each case, T assigns nominative Case to subject ANPHR. This assumption implies that [ $\pm$ tense] property should be reflected in the structure of a nonfinite clause, not in the Case-assigning property of T.

Takahashi (2002) proposes that “the EPP is a sort of PF condition which requires that a certain configuration ... be initiated by an audible or pronounceable phrase.” To satisfy this bare output condition imposed on PF, the EPP is obligatorily associated with finite T in syntax. Movement of a phonologically null element, therefore, results in an illegitimate PF representation. As part of evidence for this claim, Takahashi provides the following examples:

- (43) a. \*John is easy to expect \_\_\_\_ will see Mary.  
 b. ??John is easy to expect Mary will see \_\_\_\_.

(Takahashi's (2002) (13))

*Tough*-constructions are not allowed when a null operator is base-generated in a finite clause. Takahashi explains the deviance as follows. Whereas the null operator must move to SPEC-C in order to be visible from the outside and establish a relation with *John*, the vacuous movement results in a deviant PF representation. The ordinary *tough*-sentence, on the other hand, is allowed since the null operator need not move, as in *John is easy [TP to please OP]*. The null operator can create a relation with *John* without movement since there is no strong phase between them.

Given this, the deviance of (42) is explained as follows. Whereas ANPHR moves to SPEC-T for the obligatory EPP-feature on finite T, the movement poses a problem at PF where ANPHR is assigned a null form and the movement turns out to be vacuous.

If this account is correct, it will entail two consequences. First, PRO should never undergo Move. Nonfinite T should not bear an EPP-feature, and PRO remains where it is base-generated:

- (44) a. John tried [TP to [<sub>v\*P</sub> PRO win]].  
 b. John wanted [TP to [<sub>vP</sub> be hired PRO]].  
 c. John believes [<sub>SC</sub> Mary [TP to [<sub>vP</sub> be PRO innocent]]].  
 d. John believes [<sub>SC</sub> there [TP to [<sub>vP</sub> be [<sub>NP</sub> PRO a man] in the room]]].  
 e. John<sub>i</sub> seems [TP to [<sub>v\*P</sub> have *t*<sub>1</sub> won the election]].

The explanation remains the same. Each nonfinite clause contains ANPHR (or, anaphoric A-trace in (44e)) in its highest A-position, and it is realized as PRO for its nominative Case value assigned by nonfinite T. Each ANPHR undergoes Agree with the local probe, and receives a controlled reading.

The other consequence concerns *pro*.<sup>12</sup> I have attributed the deviance of (42) to the movement of PRO. It is predicted, therefore, that PRO should be allowed in a finite clause as long as it is able to remain in SPEC-*v*\*. In English it is not possible since an obligatory EPP-feature on finite T triggers subject movement. In languages in which subject movement is not obligatory, on the other hand, the equivalent of (42) should be ruled in. ANPHR is realized as a null subject for its nominative Case, and bears a pronominal reading. It is reminiscent of *pro*, and indeed, *pro* seems to be allowed in languages of optional subject movement such as Japanese and Romance languages. The suggested analysis might open the way to a unified account for PRO and *pro*. It might also answer to the question of why *pro* should be restricted to subject: ANPHR is null only when it is assigned nominative Case.

To sum up this section, the suggested analysis copes with exceptional cases either by adopting assumptions available in the literature (Nakajima (1998), Hyde (2000), Iwakura (1999) and Wunderlich (1997)), or by refining upon the minimalist framework following Chomsky (2001a, b) and Takahashi (2002). To achieve a sophisticated account with no such assumptions, it must be made clear what makes those exceptional cases so exceptional. I leave this for future research.

## 5. Remaining Questions

The suggested analysis has attempted a simple, unified account for control and binding facts within the current minimalist framework. However, I have stipulated several new assumptions for the analysis. In this section let us scrutinize their validity. Specifically, I examine the following three assumptions:

(45) T, finite or nonfinite, can assign nominative Case. (Cf. section 1)

(46)(=4) a. ANPHR with nominative Case is realized as PRO.

b. ANPHR with other Case is realized as *-self*.

<sup>12</sup> I am grateful to a reviewer for drawing my attention to this issue.

- (47)=(7) A nonfinite clause must contain an anaphor in its highest argument position.

Let us first consider (45). Previous analyses have assumed that nonfinite T does not assign nominative Case. It is problematic both conceptually and empirically. As I pointed out in section 1, it ends up in circular logic between Case and PRO. Moreover, Romance data show that nonfinite T can assign nominative Case (see (2)). The new assumption is therefore preferable to the standard null Case hypothesis.

Let us then consider the PF rules (46). Why do different Case values lead to different PF forms of ANPHR? I answer this question by suggesting that the phonetic distinction reflects the type of ANPHR. Recall that the highest argument in a nonfinite clause must be ANPHR. A sentence is deviant if ANPHR is replaced by some overt argument in a nonfinite clause. On the other hand, ANPHRs in other positions are totally optional. The contrast is shown in the following examples:

- (48) a. John tried [<sub>TP</sub> to [<sub>v\*P</sub> [<sub>ANPHR</sub> (PRO)/\*he/\*Mary] win the election]].  
 b. John admires ANPHR (*himself*)/*them*/*Bill*.

Nominative ANPHR, therefore, can be paraphrased as obligatory ANPHR, whereas other Cased ANPHRs as optional ANPHRs. Optional information must be overt for the hearer to receive the information. Obligatory information, in contrast, need not be overt since the hearer can recover it. In (48a), for instance, the hearer recovers a null subject in the nonfinite clause since otherwise the sentence would violate the condition (47).

Finally, let us examine the validity of (47). Why should a nonfinite clause contain ANPHR in the highest A-position? It might be due to the defectiveness of a nonfinite clause. A nonfinite clause lacks information such as tense and force. It does not mean that the clause does not need such information, but that the information should be recovered at LF by forming a relation with a higher finite clause. To do so, a nonfinite clause must be equipped with some device to create a relation with a higher clause. Condition (47) might be a solution to this bare output condition. Consider the following schematic structures for illustration:

- (49) a. DP ..... [<sub>TP</sub> to ANPHR V DP]  
 b. \*DP ..... [<sub>TP</sub> to DP V ANPHR]

ANPHR bears unvalued  $\phi$ -features, and undergoes Agree with locally

c-commanding DP if there is one. If ANPHR is in the highest A-position as in (49a), then Agree takes place between ANPHR and some DP in the higher clause. Through the established Agree-link, the embedded clause can retrieve necessary information from the higher clause at LF. If ANPHR is not in the highest argument position, as in (49b), the probe for ANPHR is DP in the nonfinite clause. In that case there is no Agree-link across the clause boundary, which results in an illegitimate LF representation. A structure as in (49a) is therefore required to guarantee a proper interpretation of the embedded clause at LF, and the requirement is realized as the LF condition (47).<sup>13, 14</sup>

Notice that ANPHR should be the ‘highest’ argument, not the external argument. ANPHR can be an internal argument as long as it is the highest argument, establishing an Agree-link with DP across the nonfinite clause border, as illustrated in (50).

- (50) a. DP ..... [<sub>TP</sub> to V ANPHR]  
 b. John wanted [<sub>TP</sub> to be hired ANPHR (PRO)].

## 6. Emphatic Pronouns: A Brief Note on Cross-Linguistic Data

Standard binding and control theories have been problematic in that they only deal with English data. An analysis that can account for the cross-linguistic data has been pursued. Whereas it goes far beyond the scope of the present paper, I point out one interesting fact observed in Japanese and some Romance languages. Consider the following examples:

- (51) John-wa [*PRO/jibun-ga* ik-]-oo to shita.  
 John-Top [*PRO/self-Nom* go] try did  
 ‘John tried to go by himself.’

<sup>13</sup> Xue and McFetridge (1998) provide a similar account in the HPSG framework.

<sup>14</sup> A reviewer points out that many Romance nonfinite clauses can contain R-expressions in their subject position. It seems to me that an R-expression subject is possible when the nonfinite clause serves as *if*- or *when*-clause. In other clauses, nonfinite clauses can contain only PRO (or an emphatic pronoun to be discussed in section 6). It might be the case that since conditional clauses bear their own tense, they do not need Agree-link to retrieve tense information at LF. Therefore these clauses need not observe (47).

- (52) a. *Moi, je veux [aller moi-meme avec lui].* (French)  
 I, I want [to-go I-myself with him]  
 ‘I want to go with him personally.’
- b. (Io) *credevo [di aver vinto io].* (Italian)  
 (I) believed [di to-have won I].  
 ‘I believed that it was me who had won.’

(adapted from Mensching (2000: 6))

In these languages, anaphoric expressions can appear where PRO is expected. Following Mensching (2000), I call them *emphatic pronouns*. Emphatic pronouns are used when the speaker wants to put a contrastive stress on the content of PRO. When *jibun-ga* ‘self-Nom’ appears in (51), for example, the implication is that John did not let anybody else go, but tried to go by himself.<sup>15</sup>

Emphatic pronouns are regarded as anaphors since they must be co-referential with their antecedent (if any), and cannot be replaced by pronominals or R-expressions.

Why can overt DP appear in a null Case position? How is it assigned nominative Case there? Why do other DPs not occupy the position (if nominative Case is assigned)? The standard theory would have difficulty in working out these questions. The suggested analysis, on the other hand, provides a simple explanation.

I have claimed that ANPHR is assigned different PF forms according to its Case values. Unlike syntactic rules, PF rules may well allow cross-linguistic variation. Suppose, therefore, that the following PF rules are relevant in Japanese, French and Italian:

- (53) a. ANPHR with nominative Case is realized as PRO (default) or in an overt reflexive form (emphatic pronoun).

<sup>15</sup> The reader might suspect that *jibun-ga* in (51) should be in the finite clause, functioning as a doubled clitic:

(i) John-wa *jibun-ga* [<sub>TP</sub> PRO ik-]oo to shita.

However, (i) is not a correct structure. Emphatic *jibun-ga* appears only when a nonfinite clause is involved, as illustrated by the contrast in (ii).

(ii) a. \*John-wa *jibun-ga* itta.  
 John-Top self-Nom went  
 ‘John went by himself.’

b. John-wa *jibun-ga* iki-tak atta.  
 John-Top self-Nom go-want did  
 ‘John wanted to go by himself.’

- b. ANPHR with other Case is realized in an overt reflexive form.

(53a) accords nominative ANPHR two possible realization forms. Emphatic pronouns are the latter realization form. Emphatic pronouns bear nominative Case since they are indeed assigned nominative Case by nonfinite T.

To sum up, under the suggested analysis, cross-linguistic variation can be attributed to the minimal difference in the PF rules. No syntactic assumptions are needed to account for the distribution and the Case form of emphatic pronouns.

## 7. Conclusion

In the present paper I claimed:

- I. PRO and overt anaphors are given a unified account within the minimalist framework.
- II. Their different PF forms are due to their different Case values. Namely, nominative ANPHR is PRO, whereas other Cased ANPHR is *-self*.
- III. ANPHR establishes so-called binding and control relations with its antecedent when  $\phi$ -Agree holds between ANPHR and the antecedent (probe). ANPHR's  $\phi$ -features are assigned values by the probe, and interpreted as dependent on the probe. A local binding/control requirement results from the locality constraint on Agree.
- IV. A pronominal reading of PRO and *-self* is obtained when ANPHR fails to undergo Agree. ANPHR's unvalued  $\phi$ -features are recovered at LF by pragmatic rules.

The suggested analysis not only explains syntactic/semantic properties of PRO and anaphors in a uniform way, but also avoids conceptual/empirical problems posed for previous analyses. For example, the suggested analysis need not make ungrounded assumptions regarding the Case-assigning ability of T or the absence of nominative reflexive anaphor. The only unique property of PRO and anaphors is the lack of  $\phi$ -values, which is defined in the Lexicon. All the other properties are the results from the interaction with the derivation mechanism. In this sense, this paper adds supportive evidence to the validity of the minimalist framework.



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