A-Set Agree and A-Movement*

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Contents

1. Introduction

Understanding what the nature of probes and goals is and how they work at the computational system is important in the minimalist theory Based on the assumption that probes and goals are sets composing relevant matching features in Hong (2005, 2006), we will consider how the relation Match and the operation Agree are applied to probes and goals of the relevant categories in A-Agree. In addition, in Chomsky's feature system, the structural Case of DP is not considered as a matching feature, so it does not require a matching pair in A-Agree. The Case feature is assigned as a side effect to a nominal element, DP, under Match and Agree of φ-features by a functional category such as T or v. However, this seems to be imperfect in Match and Agree at the computational system, since it is not clear why the Case feature should be treated as a unique one which

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does not have a pair matching one. Thus, in this paper, it is also considered whether the Case feature is a real unique one which should be treated as an assignment rather than Match and Agree at the computational system. Lastly, problems with Chomsky's feature system in A-movement are identified and considered, highlighting problems which successive cyclic A-movement (especially in raising constructions) poses in intermediate TPs. If the feature agreement is not terminated by A-Agree, it indicates that the features on probes and goals are not symmetrical. In the alternative feature system that I present in Hong (2005, 2006), it means that either a probe or a goal is incomplete in the intermediate TPs. So there is a further movement at the derivational stage by an incomplete A-set Agree, and such a movement continues until satisfying the full matching and agreement of features on a probe and a goal by a complete A-set Agree. When both a probe and a goal are fully matched, the A-movement is terminated. We will consider all these A-relevant movements by A-Agree in this paper.

2. Match and Agree

In Minimalist Theory, Merge, Agree and Move are three main computational operations in the grammar. Merge is an operation to select two syntactic objects and form a new syntactic object with them. When this Merge operation is discussed in Chomsky (1998, 1999), it indicates pure Merge which is distinguished from Move. According to Chomsky (2001), at Narrow Syntax(NS), Merge is only one free operation. Any other operation other than Merge requires empirical motivation. Merge can be divided into two types: external and internal. The external Merge is pure Merge, as mentioned, which is related to argument structures, while internal Merge is related with derived structures which is associated with Move. Both external and internal Merge operations are free at NS. The second operation Agree is considered to delete matching uninterpretable features and to value matching unvalued features. It has two functions of deletion and valuation, which are related to both LF and PF. A feature has two properties: an attribute and a value. The attributes of features can be interpretable or uninterpretable, and the value of them can be valued or unvalued. According to Chomsky (1998,1999,2001), in a given respect of some feature F, two constituents match if (i) they have the same attribute, and (ii) one of them is unvalued and uninterpretable and the other corresponding one is valued and interpretable. Under matching of the relevant features, the operation Agree is applied to them for deletion and valuation. The last operation is Move. The concept of Move in Chomsky (1998), Hong (2005, 2006) is different from that in the early Minimalist Program in Chomsky (1993, 1995) in two respects: one is that it is a composite operation of Agree and Merge and the other is in the absence of covert movement. The syntactic phenomena that were described earlier by covert movement are depicted by the operation Agree in Chomsky (1998,1999). In Hong (2005, 2006), in order to apply the operation Move to syntactic objects, Agree is a necessary pre-condition for Move. According to Chomsky (2006) and Radford (2009), the EPP feature on T works in conjunction with agreement, allowing T to attract as its subject a constituent which it agrees with person and number features in A-movement. In the case of wh-movement, the edge feature on C operates independently of agreement, allowing C to attract any type of constituent to move to the specifier position within CP.

Now, understanding what the nature of probes and goals is and how they work at NS is important. In Chomsky (1998, 1999), uninterpretable features render both probes and goals active at NS. Radford (2004c,d) suggests the possibility that both a probe and a goal are an individual identical feature. According to his argument, feature checking canonically involves a valued–unvalued operation in respect of a single feature F, in which the probe is valued for F and agrees with an accessible goal valued for F. In his assumption, either of them should be active. Agree is applied to individual identical matching features.[1] Unlike Chomsky (1998, 1999) and Radford (2004c,d), Hong (2005, 2006) suggests the possibility that the nature of probes and goals is a set which is composed of the relevant features to A–Agree or A–bar Agree. For example, in relation to φ–features, person, number, and gender features, which are related to A–Agree can comprise a set. This full member set can be referred to as a complete φ–set or A–set. This set can be a probe or a goal in A–Agree in the computational system. Based on this assumption, the following probes and goals are introduced in A–Agree in Hong (2005. 2006):

(1) Probes
a. A complete φ–set of T
b. An incomplete φ–set of T
c. A complete φ–set of *v*
d. An incomplete φ–set of *v*

(2) Goals
a. A complete φ–set of lexical items
b. An incomplete φ–set of lexical items

The φ–sets of functional and lexical items participate in A–Agree as

1) Radford (2004a,c,d) argues that a probe can be valued for F and agrees with any accessible goals unvalued for F such as the goals of expletives *it* and *there*. However, in the case of valuation, it is not plausible that one unvalued feature, a probe, assigns a value to another unvalued feature, an accessible goal, by Match and Agree. See Radford (2004a,c,d) for more detailed discussions.

probes or goals in the computational system.

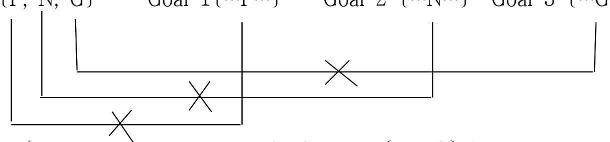
3. Split Agree, Distributed Agree and Multiple Agree

According to Chomsky's (1998, 1999), not every matching pair of features seems to induce the operation Agree.

(3) We take deletion to be a 'one fell swoop' operation, dealing with the φ-set as a unit. Its features cannot selectively delete: either all or none.
Chomsky (1998, p.40)

The following Split Agree is not allowed at NS:

(4) Probe {P, N, G} Goal 1{…P…} Goal 2 {…N…} Goal 3 {…G…}



(P=Person, N=Number, G=Gender, {P,N,G} is a complete set)

In the above structure in (4), although the individual features of the probe match with identical features on the different goal 1, goal 2 and goal 3 separately, the operation Agree cannot be applied to the individual features on them. If the nature of probes and goals is an individual feature rather than a set, Split Agree could be possible. However, in Carstens (2000, 2001) and Adger (2003), Split Agree seems to be allowed as Concord within DP. If the operation Concord involves a valued-unvalued operation on individual features, it can be distinguished from the operation Agree. Chomsky (1998, fn.90 p.44) argues that pure Merge cannot induce agreement. If Merge could induce agreement by the operation Agree, a *v*P-internal subject would manifest agreement and have its Case value, which would delete, preventing the subject raising to spec T. On the other hand, unlike Agree, Concord seems to be induced by Merge. Consider the Italian examples in (5), in which determiner, adjective, and pronoun inflect for the gender feature of the head noun, while adjective, determiner, and the head noun inflect for the number feature of the head determiner:

(5) a. l**a** mi**a** cas**a** bell**a**
the-F my-F house-F nice-F
'my nice house'
b. l**e** mi**e** cas**e** bell**e**
the-F.PL my-F.PL house-F.PL nice-F.PL
'my nice houses'

Carstens (2001, p.154)

All these inflections, -*a* in (5a) and -*e* in (5b), are reflexes of Concord within DP. In Kim and Hong (2006), unlike Agree, Concord is applied to individual identical features. It is not related to Case assignment and Move. If these inflections are reflex of Agree, the Case feature of *bella* would delete under matching of the complete φ-set of *la* in (5a). So this NP, *bella*, could not be active. This would wrongly lead to disallow the movement of DP to spec *v* or T.[2]

Thus, the nature of probes and goals on functional and lexical items can be considered as a set of the relevant features for Match and Agree at NS.

In Chomsky's feature system, the completeness of A-sets can be considered to be relative. Fixing a lexicon of a language is regarded as a two-stage process: One is the selection of a set of features [F] from the

2) See Carstens (2000, 2001), Adger (2003) and Radford (2004c,d) for different views of deletion of the Case feature of DP.

universal features {F}, and the other is the assembly of features from [F] into lexical items. The collection of lexical items comprises the lexicon of the language. However, the notion of selection does not seem to be compatible with the Uniformity Principle outlined by Chomsky (1999). The selection of [F] from {F} in a lexicon of a language comprises a subset of the universal set. As for the completeness of a φ-set, it can be considered in two different perspectives: absolute or relative. If the set of φ-features in {F} is composed of {Person, Number, Gender}, it is possible to select a subset of this set as an A-set in a language. If we view the completeness of a φ-set in absolute terms, as in some other languages, a complete φ-set in English should also contain {Person, Number, Gender}. Thus, although English verbs do not exhibit gender agreement morphologically, a gender feature would have to be regarded to exist, but completely syncretized. On the other hand, on the relative view, a complete φ-set in English can be assumed to be composed of {Person, Number} without a gender feature, [Gender]. This seems to be plausible, since the relative belief grants that selection of [F] from the universal set {F} can be different depending on languages. For conceptual reasons such as the reduction of computational complexity, the relative view is accepted in Hong (2005, 2006). So, person and number features constitute a complete φ-set, A-set, in English.

Under the relative view, the following feature set Agree is allowed to probes and goals in English:

(6) Distributed Agree

Probe 1 {P,N,G} Probe 2 {P} Goal {P,N,G}

From the relative point of view in the feature composition of a language, in (6) person and number features comprise a complete φ-set as an A-set for A-Agree in English. Suppose there are more than two probes in (6), both the Probe 1 and Goal have complete φ-sets, and the Probe 2 has an incomplete φ-set. Although the complete φ-set of the Goal can delete and value the uninterpretable and unvalued features of the incomplete φ-set of the Probe 2, the incomplete φ-set of the Probe 2 cannot delete and value the uninterpretable and unvalued features of the complete φ-set of Goal, since the condition (3) does not allow this. Thus, the complete φ-set of Goal can enter into Match and Agree with that of the Probe 1. In this situation, the Probe 2 does not intervene to block Agree between the Probe 1 and Goal. This situation is accounted for by Chomsky (1999) as in (7):

(7) The intervention effect is nullified unless intervention
blocks remote matching of all features

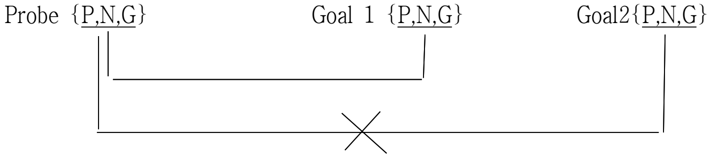
Chomsky (1999, p.13)

Due to (7), in (6) the incomplete φ-set of the Goal 1 cannot be a barrier to Match and Agree between the Probe and the Goal 2, since the Goal 1 has only a person feature (P) in its set and cannot block the agreement of the other matching features of the Goal 2 from those of the Probe. Dealing with the φ-set as a syntactic unit in A-Agree in (6), such multiple Agree is referred to as Distributed Agree in Hong (2005, 2006). In other words, in this Distributed Agree, the Goal 1 does not intervene to block Match and Agree between the Probe and the Goal 2. Thus, the Probe can enter into Match and Agree with the Goal 2 after matching with the Goal 1. Expletive constructions including *it* and *there* can be accounted for by this Distributed Agree.[3]

3) See Hong (2005) for more discussion about such expletive constructions containing *it* and *there* by Distributed Agree.

Now, suppose there are more than two goals which all contain complete φ-sets. Unlike (6), the Goal 1 can be an intervener and block Match and Agree between the Probe and the Goal 2. Thus the following structure in (8a) is not allowed:

(8) Separate Agree



In (8a), the Probe enters into Match and Agree with two goals separately, but this is blocked by the intervening Goal 1, which results in the intervention effect. However, in Hiraiwa (2000), we can find the idea of avoiding such intervention effect in the multiple goal constructions. The following mechanism for multiple agreement for multiple arguments is suggested:

(9) Multiple Agree/Agree

Multiple Agree with a single probe is a single simultaneous syntactic operation; Agree applies to all the matched goals at the same derivational points *derivationally simultaneously*. Multiple Move is also a single simultaneous syntactic operation that applies to all the Agreeing goals.

Hiraiwa (2000)

If a probe enters into Match and Agree with more than two goals simultaneously in the derivation, Multiple Agree with more than two goals can be allowed:

(10) Multiple Agree

Probe {P,N,G} Goal 1 {P,N,G} Goal2{P,N,G}

As shown in (10), the Probe enters into Match and Agree with the two goals, Goal 1 and Goal 2, simultaneously, and the intervention effect is nullified by the operation Multiple Agree. This accounts for the multiple Nominative subject construction, the double Accusative object construction, and multiple wh−questions.

4. Case-Assignment as Case-Agreement

According to Chomsky (1998, 1999), structural Case of DP is not a matching feature that requires a matching pair. So the probes on T and *v* do not have a Case feature. The Case feature itself is not matched, but its uninterpretable property deletes as a side effect under Match and Agree of φ−features between probes and goals. The value of the Case feature of DP is assigned by the matching probes on T and *v* containing a complete φ−set as an A−set. Although the Case feature of a goal in a lexical item, DP, is uninterpretable and unvalued one, it is clear that the role of the Case feature is crucial in Match and Agree between probes and goals in A−Agree. All interpretable φ−features of a φ−set in DP are activated by its uninterpretable Case feature. Now, the question that we can have here is whether the Case feature is a unique one which does not have a matching pair in A−Agree, as assumed that Case deletion correlates with the φ−completeness of probes in Chomsky (1999):

(11) Structural Case is not a feature of the probes (T, *v*), but it deletes under agreement if the probe is appropriate — φ-completeness.

Chomsky (1999, p.4)

In (11), in other words, the Case feature deletes as a side effect under matching of φ-features of A-sets as mentioned above. However, Carstens (2001) and Hong (2005) throws doubt on the correlation between the Case deletion and the φ-completeness with the following Icelandic example, taken from Chomsky (1999, pp.13-14):

(12) [$_{CP}$ [$_{TP1}$ T seem [$_{TP2}$ EXPL to have been [α caught several fish]]]]

Chomsky (1999, p.13)

(12) shows a schematic representation of the structure of the relevant Icelandic sentence. Consider the Case agreement on the passive participle in (12). The first stage of the Merge cycle is α, as shown in (13):

(13) [α caught several fish]

In the above example in (13), the past participle *caught* can be considered as adjectival, and its φ-set may consist of uninterpretable and unvalued number and gender features, but not a person feature. Although the φ-set of the participle is not complete, the φ-set of the direct object *several fish* is complete. The φ-sets of both the participle and the direct object match, inducing Agree, since the φ-set of the direct object is complete. But the Case feature of the direct object *several fish* is still undeleted and unvalued. A question that Carstens (2001) asks here is why the initial Agree between the participle and the direct object does not delete the Case feature of the direct object. The answer is that, since the φ-set of the probe on the participle is incomplete, it cannot delete the

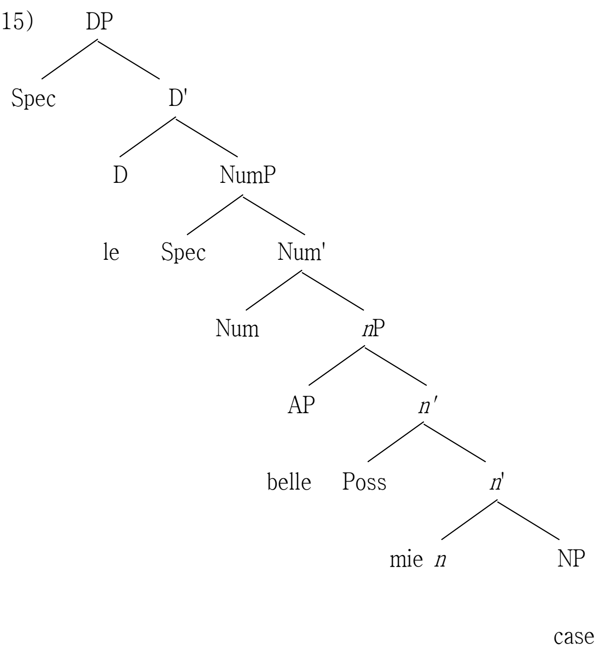
Case feature and assign the value of Case to the direct object. According to Carstens (2000, 2001), the same question arises in the following Italian example:

(14) Le mie case belle
The-F.PL my-F.PL house-F.PL nice-F.PL
'my nice houses'

Carstens (2001, p.154)

In the above example in (14), determiner, adjective, and pronoun inflect for the number and gender features of the head noun *case* 'houses'. The structure of the DP in (14) can be illustrated in (15)[4]:

(15)



4) This internal structure of DP can be analyzed by split Agree or Concord as discussed in the section 3.

In the above structure, *n* is a kind of light noun, analogous to *v* in that it selects and θ-marks a possessor or agent argument. Num is a functional category, analogous to T in the relevant structure. In Carstens (2001), Kim and Hong (2006), following Valois (1991) and Cinque (1994), the noun *case* raises to Num via *n*, and the genitive pronoun *mie* raises to the spec Num. Thus, in the structure of (15), the noun *case* undergoes triple agreement with the pronoun *mie*, the adjective *belle*, and the determiner *le.* The probe of the adjective *belle* is an incomplete φ-set, but the other two probes of pronoun *mie*, and the determiner *le* can be considered as complete φ-sets. If so, the Case feature of the noun *case* should be deleted and its value should be assigned within DP. However it does not seem to occur. Based on this, Carstens (2001), Kim and Hong (2006) argue that assigning the structural Case is not related to φ-completeness. Rather, following the traditional view, the structural Case seems to belong to certain categories such as T, *v* and P etc. One big benefit of this traditional belief is that the Case feature can also be regarded in the more generalized Match and Agree frame with the matching Case feature in the corresponding probe. In Hong (2005, 2006), he also argues that the existence of the Case feature of some probes in some functional categories such as T, *v* and P constitutes a perfect language system, and Case feature deletion and valuation is also achieved by Match and Agree. However, in (15) the probe of the functional category D unlike T, *v* and P does not have a Case feature. Therefore, the determiner *le* does undergo agreement with the pronoun *mie*, but not assign the value of Case to the pronoun. This leads the DP to undergo further agreement with *v* or T for the Case agreement. Following Carstens (2001), in Hong (2005, 2006) the A-Agree operation can be applied under the following conditions:

(16) A-Agree

a. Either a probe α or a goal β under matching relation should be a complete A-set

b. Uninterpretable φ-features are valued and deleted.

c. If the probe α has an intrinsic structural Case value, it values any unvalued Case feature of the goal β; the two Case features then delete.

Just as a third person feature of expletives, *it* and *there,* and a wh-feature of wh-expressions such as *who, what* and *when* etc., are initially valued in Radford (2004a,b, 2009), the Case feature of a probe in T, *v* and P can also be treated in the same way. So, the Case feature of the probe α is an uninterpretable and valued feature. In A-Agree in English, the feature composition of probes and goals is as follows[5]:

(17) The composition of A-sets

Probe: {uPerson, uNumber, uCase}

Goal: {iPerson, iNumber, uCase}

(uCase = an uninterpretable and valued case feature)

Under this feature system, in order to enter into Match and Agree, either a probe or a goal should be a complete A-set containing a Case feature, since only a complete A-set can delete and value the matching uninterpretable and unvalued features of the corresponding A-set.

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5) The following feature composition is also possible in A-Agree in English: Probe: {{uPerson, uNumber} uCase} Goal: {{iPerson, iNumber} uCase} In the above feature composition, the subset of A-set, {uPerson, uNumber}, can be considered as a complete φ-set rather than a complete A-set. In this case, a φ-set is a subset of an A-set.

5. A-Agree and A-Move

In the feature system containing a Case features as a matching feature, the complete A-set is composed of {Person, Number, Gender, Case}, as shown in Italian. Thus, it can be assumed that a complete A-set in English also contains {Person, Number, Gender, Case}. However, unlike some other languages such as Italian, German and French, A-sets in English do not exhibit gender agreement in morphology. There are two ways of approaching this issue. One way is to posit that, like other languages containing gender agreement, a complete A-set in English also contains {Person, Number, Gender, Case}, but gender distinctions are considered to be completely syncretized. The other is to assume that a complete A-set in English consists of {Person, Number, Case} without a gender feature. If we accept the idea of the relative universality that the selection of a set of features [F] from the universal features {F} is different depending on languages, a certain subset of features [F] must be present in all languages and the choice of the rest may be parameterized. For instance, the intrinsic person feature on the pronoun is a common property of all languages, but, judging from empirical data, the gender feature on nouns could not be selected obligatorily in all languages. The selection of a gender feature from the universal features {F} can be parameterized depending on languages. Accepting this relativity in the selection of a certain set of features from the universal features {F}, I assume that a complete A-set in English is composed of {Person, Number, Case} without a gender feature. Under this relativity of selection of features in language, as assumed in the section 4, the feature composition of complete A-sets between a probe and a goal in English is as follows:

(18) a. A complete A–set of a probe: {uPerson, uNumber, uCase}
b. A complete A–set of a goal: {iPerson, iNumber, uCase}

In (18) φ–features, a Person feature, a Number feature, are members of the A–sets in both probes and goals, and, in addition, one more member, a Case feature, is in their sets. So the composition of A–sets between probes and goals is exactly same, as seen in (18). In A–Agree, the completeness of an A–set is very important, since only a complete A–set can delete and value the matching features of the other set by Agree.

Now, consider A–movement by A–Agree with the following example:

(19) The protestors were arrested.

Prior to the movement of the DP *an unpopular candidate*, the structure will be as follows:

(20) [$_{TP}$ were [$_{vP}$ [$_{VP}$ arrested [$_{DP}$ the protestors]]]]

In the above sentence, there are three kinds of uninterpretable features: the φ–features, the Case feature and the EPP–feature of T and the structural Case feature of NP. The structure at this stage where T is first introduced into the derivation is as follows:

(21) [$_{TP}$ were [$_{vP}$ [$_{VP}$ arrested [$_{DP}$ the protestors]]]]

uNumber [ ]	iNumber [PL]
uPerson [ ]	iPerson [3]
uCase [Nom]	uCase [ ]
uEPP	

As assumed, a complete A-set comprises person, number and Case features, and both T and DP have complete A-sets in (21). Thus, the complete A-set of T, acting as a probe, seeks a set of matching features in the goal of DP in order to eliminate its uninterpretable features and to value the unvalued features through the operation Agree. In the process of Match and Agree, all matching uninterpretable features delete and unvalued features are valued through the operation Agree between T and DP:

(22) [$_{TP}$ were [$_{vP}$[$_{VP}$ arrested [$_{DP}$ the protestors]]]]
~~uNumber~~ [PL] iNumber [PL]
~~uPerson~~ [3] iPerson [3]
~~uCase~~ [Nom] ~~uCase~~ [Nom]
uEPP

Finally, the EPP-feature of T triggers the movement of DP, and the derivation of (19) is completed:

(23) [$_{TP}$ the protestors were [$_{vP}$[$_{VP}$ arrested
iNumber [PL] ~~uNumber~~[PL]
iPerson [3] ~~uPerson~~[3]
~~uCase~~ [Nom] ~~uCase~~ [Nom]
uEPP
[$_{DP}$ the protestors]]]]
iNumber [PL]
iPerson [3]
~~uCase~~ [Nom]

Now, consider successive cyclicity in A-movement:

(24) The protestors are likely to be arrested

The above sentence has the following structure before the subject raising:

(25) [$_{TP}$ to [$_{vP}$ [$_{VP}$ be arrested the protestors]]]
iNumber [PL]
uPerson [ ] iPerson [3]
uEPP uCase [ ]

The infinitive T of raising predicates is defective, so it has an incomplete A-set containing only a person feature[6]. On the other hand, the goal of *the protestors* has a complete A-set, so it can delete the feature of the incomplete A-set of the probe in the infinitive T by the operation Agree. However, the features of the complete A-set of the goal in the DP *the protestors* are not fully matched, so the Case feature cannot be deleted and valued. The goal, the A-set of the DP *the protestors* is still active, so it can enter into Match and Agree with the next probe after moving to spec T in the infinitive clause:

(26) [$_{TP}$ are likely [$_{TP}$ the protestors to be arrested
uNumber [ ]
uPerson [ ] ~~uPerson~~ [3]
uCase [Nom] ~~uEPP~~
uEPP
the protestors]]
iNumber [PL]
iPerson [3]
uCase [ ]

6) See Hong (2005) and Radford (2004a, 2009) for more detail discussion about the defectiveness of infinitive T.

After satisfying the EPP feature, the goal, the A-set of the DP *the protestors* enters into an agreement relation with the next probe of the finite T in the following stage:

(27) [$_{TP}$ are likely [$_{TP}$ the protestors to be arrested
~~uNumber~~ [PL] iNumber [PL]
~~uPerson~~ [3] iPerson [3] ~~uPerson~~ [3]
~~uCase~~ [Nom] ~~uCase~~ [Nom] ~~uEPP~~
uEPP
the protestors]]

In the above stage, the finite T has a complete A-set, so this complete A-set enters into an agreement relation with the goal, the complete A-set of the DP *the protestors.* Both the probe of the finite T and the goal of the DP *the protestors* are fully matched. Their uninterpretable and unvalued features are deleted and valued by the operation Agree. The Case feature of the goal in the DP *the protestors* is also deleted and valued, since all the features of the complete A-set of the goal are fully matched. Finally, the DP *the protestors* is merged in spec T to satisfy the EPP feature of the finite T:

(28)[$_{TP}$ The protestors are likely [$_{TP}$ the protestors
~~uNumber~~ [PL] iNumber [PL]
~~uPerson~~ [3] iPerson [3]
~~uCase~~ [Nom] ~~uCase~~ [Nom]
~~uEPP~~
to be arrested the protestors]]

In the above derivation, when the intermediate T has an incomplete A-set and the DP *the protestors* has a complete A-set, the operation Agree is applied only to the incomplete A-set. On the other hand, when the finite T has a complete A-set and the DP *the protestors* has a complete A-set, the operation Agree is applied mutually. Thus, the A-movement is terminated.

(29) A-movement[7)]

a. When a probe is an incomplete A-set and a goal is a complete A-set, there is further A-Agree and A-movement.

b. When a probe is a complete A-set and a goal is a complete A-set, A-Agree and A-movement are terminated.

In the raising construction, the copy of the DP *the protestors* and the moved *the protestors* are in the same checking domain of the probe, the complete A-set of the finite T. If the deletion rule for copies of moved items is applied outside the checking domain, in the raising construction, the copy of the DP *the protestors* will enter into Match and Agree with the finite T, since it is now located inside the checking domain. So, the all uninterpretable and unvalued features of the moved *the protestors* and the copied *the protestors* are simultaneously deleted and valued by the probe, the complete A-set of the finite T. This can occur in passive sentences and other raising constructions in the same way.

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7) In the case of expletive constructions containing *there* in the raising construction, the operation Agree cannot be applied between an infinitive T and an expletive *there*, since both of them have incomplete A-sets. So the situation for further Agree and movement can be extended:

(i) When a probe is an incomplete φ-set (A-set) and a goal is an (in)complete φ-set (A-set), there is further Agree and movement.

6. Conclusion

In this paper, the nature of probes and goals has been considered as a set. In the case of A-Agree, in order to enter into Match and Agree, either a probe or a goal should be a complete A-set containing a Case feature, since the Case feature is regarded as an element of an A-set. This complete A-set can only delete and value the matching uninterpretable and unvalued features of the corresponding A-set by A-Agree. Unlike Chomsky's feature system, the advantage of this feature system, the Case feature is also considered as a matching feature like other φ-features such as *person, numbe*r, and *gender* features. It is not treated as an unique feature here. Considering successive cyclic A-movement in raising constructions in intermediate TPs, the asymmetrical matching relation of features on probes and goals has been discussed. If the features on probes and goals are not symmetrical and either a probe or a goal is not complete, there is a further A-Agree and A-movement. In the feature system that Hong (2005, 2006) presents, A-movement continues until satisfying the full matching and agreement of features on a probe and a goal by a complete A-set Agree. When both a probe and a goal are fully matched, the A-movement is terminated. Thus, all these A-relevant movements are explained with A-sets on probes and goals containing all matching features without any unique feature.

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Abstract

A-Set Agree and A-Movement

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Discovering the nature of probes and goals on functional and lexical categories is very significant to understand how the computational system works and how the movement operates. Based on the assumption that probes and goals are sets composing relevant matching features, the operation Agree is accounted for at the computational system. In the case of A-Agree, under the set assumption, either a probe or a goal should be a complete A-set. The complete A-set contains a Case feature and the Case feature is regarded as an element of the set. This complete A-set can only delete and value the matching uninterpretable and unvalued features of the corresponding A-set by A-Agree. In this feature system, the Case feature is considered as a matching feature like other φ-features such as *person, numbe*r, and *gender* features. In the case of successive cyclicity in A-movement in intermediate TPs, the asymmetrical matching relation of features on probes and goals is discussed with some relevant raising verb sentences. If the features on probes and goals are not symmetrical and either a probe or a goal is not complete, there is a further A-Agree and A-movement. The A-movement continues until satisfying the full matching and agreement of features on a probe and a goal by a complete A-set Agree. When both a probe and a goal are fully matched, the A-movement is terminated. All these A-relevant movements are accounted for by the A-set assumption on probes and goals.

Key Words: A-Agree, A-Movement, probe, goal, Universal Grammar
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