Copy Theory in the Minimalist Program

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Abstract

This article proposes a property of Copy in the minimalist program which we can take to be incorporated into the computational system for human language $C_{hl}$. I show how this property of Copy accounts for a subject/object asymmetry. I also show that this property gives an elegant theoretical grounding for the accounts of the relations of pronouns and their antecedents which are provided in Kayne (2002).

Keywords: a subject/object asymmetry, Copy, pronouns and their antecedents, TRANSFER

1. TRANSFER and a theory of Copy

In this paper, I will show that there is a property of Copy which is incorporated in the system of human language and how this property of Copy works in the syntax.

Chomsky (2001a, 2004) proposes the operation TRANSFER as shown in (1):

(1) TRANSFER hands $D_{NS}$ over to $\Phi$ and to $\Sigma$. ($D_{NS} =$ the narrow-syntactic derivation)

(Chomsky 2001a: 4)

According to Chomsky (2001a: 8), the properties of TRANSFER are summarized as follows:

(2) a. The operation TRANSFER applies at the phase level. At this level, internal Merge can apply either before or after TRANSFER, hence before or after Spell-Out S-O.

b. When internal Merge is applied before TRANSFER, it yields overt movement and when it is applied after TRANSFER, it yields covert movement. Covert and overt movement yields pairs $<\alpha, \beta>$, $\alpha$ an edge element c-commanding $\beta$.

c. Under S-O, either $\alpha$ or $\beta$ loses its phonological features: $\alpha$ under covert Move, $\beta$ under overt Move (understanding “copy” to cover both cases).

In the premise of these characteristics of TRANSFER advocated by Chomsky (2001a, 2004), I propose that the following Copy system is incorporated into the computational system for human language $C_{hl}$:
(3) In the case that internal Merge, applied to a syntactic object \( \Gamma \), yields Copy \( \alpha \), it becoming a Unit, internal Merge cannot be applied to any element within the Unit.

In the section 2 and 3, let us see how this property of copy in (3) works for syntactic phenomena.

2. A subject/object asymmetry
First, let us see the derivation of the sentence in (4):

(4) *which politician did pictures of \( t \), upset the voters

This sentence reaches to the following structure at a step of a derivation by external Merge:

(5) \([_{vp} \text{pictures of which politician} \ v \ [_{vp} \text{upset the voters}]]\]

Internal Merge is applied to pictures of which politician in this position before TRANSFER, occurring overt Movement and yielding Copy \( \alpha \) at Spec, TP.

(6) \([_{tp} \ [_{s} \text{pictures of which politician}] \ T \ [_{vp} \ [_{s} \text{pictures of which politician}] \ v \ [_{vp} \text{upset the voters}]]\]

At this stage of the derivation, Copy \( \alpha \) in (6) becomes a Unit by (3). Thus, internal Merge cannot be applied to which politician within \( \alpha \), then which politician cannot move to Spec, CP. The ungrammaticality of the sentence in (4) is explained like this.

In contrast to the ban on the extraction of an element out of the subject NP, the extraction out of the object NP is allowed:

(7) who, did Bill take a picture of \( t \),

In the derivational process of (7), VP in (8) is formed:

(8) \([_{vp} \text{take} \ [_{dp} \text{a picture of who}]]\]

Next, \( v \) is Merged to the structure in (8) and the derivation goes on to the Phase in (9):

(9) \([_{vp} \ v \ [_{vp} \text{take} \ [_{dp} \text{a picture of who}]]]\]

To this structure, the subject Bill is Merged and the derivation reaches to (10):
(10) \[\text{[vp Bill v [vp a picture of who]]}\]

At this stage of the derivation, internal Merge is applied to \textit{a picture of who} within v-complement and Copy \(\alpha\) is yielded at the outer Spec of vP:

(11) \[\text{[\text{[a picture of who]} \text{Bill [\text{v [vp take [\text{a picture of who}]]}]]]}\]

At the stage of (11), under Spell-Out, by (2d), \textit{a picture of who} of the lower Copy loses its phonological feature and this Copy is not remained in the structure.

(12) \[\text{[\text{a picture of who]} \text{Bill [\text{v [vp take [\text{a picture of who}]]}]]}\]

At the stage that the derivation reaches to the root in (11), the structure becomes (12). In (12), Copy \(\alpha\) \[\text{[a picture of who]}\] in the outer Spec of vP does not have c-commanding Copy \(\beta\). So \textit{a picture of who} in (12) is not Copy \(\alpha\) in (3). Thus that NP does not become a Unit. If so, internal Merge can be applied to the inner element of \[\text{[a picture of who]}\] in the outer Spec of vP. \textit{who} in \[\text{[a picture of who]}\] in the outer Spec of vP, thereafter, moves to Spec, CP to check the \textit{wh}-feature when CP is formed, by the phase-impenetrability condition PIC in (13). Thus, the acceptable sentence in (7) is derived.

(13) Phase-Impenetrability Condition (PIC): In Phase \(\alpha\) with head H, the domain of H is not accessible to operations outside \(\alpha\), only H and its edge are accessible to such operations. (Chomsky 2000: 108)

In (13), it is stated that once Phase (vP or CP) is formed, its head H and Spec are accessible to operations outside Phase but the complement of Phase is not accessible to such operations. We can say here that by PIC, in case that internal Merge is applied to an constituent \(\Gamma\) and this yields Copy \(\alpha\) in the Phase edge, because the Phase-complement is not accessible to operations outside Phase, Copy \(\beta\) (a Phase-complement) is deleted under (2d).

3. Kayne (2002) and Copy

3.1. Clitic Doubling

In assuming (3), we can provide a theoretical grounding for the Kayne’s (2002) proposal concerning pronouns and their antecedents.

Kayne will take the position that clitic doubling and antecedent-pronoun relations should be unified more than they have been. First, let us see Kayne’s approach to clitic doubling. He insists that (14) takes the derivational steps as shown in (15).

(14) Le doy un libro a Juan. (Spanish)

Him (dat.) I-give a book to Juan
“I am giving a book to John”

(15) a. doy un libro [Juan le]  →  
    b. [Juan le] doy un libro t₁  →  
    c. Juan, [t₁ le] doy un libro t₁  →  
    d. a Juan, [t₁ le] doy un libro t₁  →  
    e. [[t₁ le] doy un libro t₁], a Juan, t₁

Let us see the derivational steps in (15) from the viewpoint of our approach. First, [vp doy un libro] is Merged to [sv juan le], forming VP:

(16) [vp [vp doy un libro] [sp Juan le]]

Next, [sp Juan le] moves to the outer Spec of vP (making a copy) and the derivation reaches to the stage of (17):

(17) [vp, [a Juan le] [v pro, [v v [vp [vp doy un libro] [s Juan le]]]]]

At the stage where a copy [Juan le] is formed in the Phase edge of vP in (17), the lower copy [Juan le] is delete. Here the upper copy [Juan le] is not Copy α in (3) any more. Thus the extraction of Juan out of this [Juan le] is allowed and the structure in (15c) emerges as shown in the derivational structure in (18):

(18) Juan, [vp [t₁ le] [v pro, [v v [vp [vp doy un libro] [Juan-le]]]]]

Hereafter, the derivation proceeds to CP and then the whole vP is preposed, reaching to (15e).¹

3.2. Pronouns and their Antecedents
Kayne (2002) generalizes his approach to clitic doubling shown in the section 3.1 to (19):

(19) John, thinks he, is smart.

Kayne’s proposal for a derivation of (19) of this sort is taking [John he] as a doubling constituent:

(20) thinks [John he] is smart →  
    John, thinks [t₁ he] is smart

From within the lower sentence, Kayne says, the double John moves into the theta-
position of the matrix verb.²

Contrasting (19) to (21) and (22), he argues that for *John* to get a theta-role from within the doubling constituent, *John* must move through the intermediate position, not moving directly into the theta-position of the matrix verb as in (20).

(21) John thinks highly of him.

(22) John considers him intelligent.

The proposal in this paper matches this Kayne’s explanation. Let us consider how the proposal in this paper explains the derivation of (19). At a stage of a derivation for the sentence in (19), we will obtain the structure in (23):

(23) \[T \text{ [vp is [sc [John he] smart]]}\]

Internal Merge is applied to \([John he]\) in (23), making a copy in Spec, TP:

(24) \[T [\text{ _ John he}] T \text{ [vp is [sc [ _ John he] smart]]}\]

At this step, Copy \(a\) becomes a Unit by (3), *John* not moving into a theta-position (Spec, vP) of the matrix verb. So, the derivation proceeds and reaches to (25):

(25) \[C [\text{ _ John he}] C [T \text{ [vp is [sc [ _ John he] smart]]}]\]

At this stage, two \([ _ John he]\)s are deleted by the definition of PIC and \([John he] in Spec, CP is no more Copy \(a\) by (3). Therefore, *John* can be extracted out of \([John he]\) in Spec, CP and move into the theta-position of the matrix verb:

(26) \[\text{ [vp John, v [vp thinks [cp [t, he] C [TP [John he] T [vp is [sc [John he] smart]]]]]]}\]

Here we have the question why the pronouns in (21) and (22) cannot take *John* as their antecedents. Kayne summarizes as follows concerning the movement of the doubling constituent from the contrast between (19) and (21)/(22):

(27) The pronoun (hence the doubling constituent) must move to a position above the subject theta-position (i.e. outside the thematic part of the structure).

(Kayne 2002: 145)

(28) There is no appropriate licensing position for the pronoun within VP or between VP and the subject theta-position.
Kayne argues that for a coreferential reading between *John* and *him* in (22) to be possible, 
[*John him*] would have to start out in the theta-position of *intelligent* and then move to a
higher intermediate position before *John* moves up into the subject theta-position of
*consider* but in (22), such an intermediate position is not available and the intended reading
is impossible.

If the proposal in (3) in this paper is tenable, we don’t have to appeal to Kayne’s
explanation in the premise of (27) and (28). Let us consider the derivation of (22) from the
viewpoint of our proposal. We can think that (22) has the derived structure shown in (29):

\[(29) [\text{C} [\text{T} [\text{VP} [\text{John him}] \text{v} \text{VP considers [\text{SC} [\text{John him} \text{intelligent}]]}]])\]

In the proposal in (3), because [*John him*] in (29) moves into the Phase edge, the copy [*John
him*] within SC is deleted. Therefore, the extraction of *John* out of [*John him*] in Spec, vP
is possible. But in this case, *John* has no position where *John* can get a theta-role. This
violates the theta-criterion. Moreover, *him* has received a theta-role in SC and would get
one more theta-role in Spec, vP. This also violates the theta-criterion. Like this, assuming
(3), we correctly rule out (22) in the intended reading. The same explanation applies to (23).

4. Conclusion
In this paper, I have proposed (3) concerning Copy in the minimalist setting, which cor-
rectly explains the subject/object asymmetry with respect to extraction. And I have also
shown that the proposal in (3) provides the theoretical grounding for Kayne’s (2002) ap-
proach to pronouns and their antecedents.

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Notes
1 Because we presuppose PIC, if in these derivational steps the first movement of [*Juan le*] is not to
the outer Spec, vP (i.e. the Phase edge), [*Juan le*] forms a Unit in (3) and the extraction of *Juan* to the
upper position is not allowed.
2 The essential difference between this case and (15), Kayne says, is that in (15) (in the second move-
ment step (i.e.(15b)), the double *Juan* moves from within the doubling constituent [*Juan le*] into a
higher non-theta-position.

References


