Some Consequences of Labeling and Maximality: The Case of the Double Object Construction*

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Abstract
The indirect object cannot be extracted in the double object construction though it is extractable from the dative construction. For example, *who did John send the book* is unacceptable, but *who did John send the book to whom* is acceptable. This phenomenon has been analyzed in linguistic literature (e.g. Oba (2005, 2016), Hallman (2015)), but it needs to be reanalyzed using the current minimalist theory, which is superior to previous theories for various conceptual and empirical reasons. This paper proposes regarding a head $P_{\text{HAVE}}$, which is motivated by Harley and Jung (2015), as a criterial head yielding a possible halting site; it is $P_{\text{HAVE}}$ that makes the indirect object unmovable. Namely, the indirect object and the head $P_{\text{HAVE}}$ share the same feature $P_{\text{HAVE}}$ under labeling (see Chomsky (2013, 2015)). Then, the maximality principle (see Rizzi (2015a, b, 2016)) renders the indirect object “frozen” in place. This analysis also explains the non-sub-extractability of the indirect object.

1. Introduction
This paper argues that the labeling theory by Chomsky (2013, 2015) and the maximality principle by Rizzi (2015a, b, 2016) explain the non-extractability of the indirect object in the double object construction. The non-extractability has been analyzed within the earlier framework of syntactic theory (e.g. Oba (2005, 2016) and Hallman (2015)). I do not, however, adopt the earlier framework because the recent framework is conceptually better in terms of the Strong Minimalist Thesis (SMT) as well as evolvability and computational efficiency. Even empirically, the recent framework has explained various linguistic phenomena (see Chomsky (2013, 2015), Rizzi (2015a, b, 2016), Epstein, Kitahara and Seely (2016), Nomura (2017), etc.). However, the non-extractability of the indirect object has not been explained using the current minimalist framework, and it should, therefore, be reanalyzed using this current framework.
Chomsky’s (2013, 2015) labeling algorithm accounts for the obligatory exit of a syntactic object such as a vP-internal subject (i.e. an external argument (EA) at SPEC-vP). In contrast, Rizzi’s (2015a, b, 2016) maximality principle or Maximalilty provides a justification for permissible “halting sites” for movement. Let us consider the following example:

(1) *[..Q Which book] does John wonder \( t \) was published last year?*

The wh-phrase is not extractable under labeling and Maximalilty. Namely, *which book*, the non-maximal syntactic object with the Q label, is frozen in place following Maximalilty under which only maximal objects with a given label can be moved. Assuming this analysis is tenable, I will propose that it extend to the case of the double object construction.

The structure of this paper is as follows: section 2 briefly reviews Chomsky’s (2013, 2015) labeling algorithm and Rizzi’s (2015a, b, 2016) Maximalilty. In section 3, I will show the semantic and syntactic properties of the double object construction. Section 4 proposes that \( P_{\text{HAVE}} \) be a criterial feature. In section 5, the proposal under labeling and Maximalilty accounts for the non-extractability of the indirect object. In addition, the analysis explains the extractable case of the indirect object. Section 6 shows that the proposed analysis also explains a phenomenon of sub-extraction with respect to the double object construction. Section 7 concludes the paper.

2. Analytic Assumptions

2.1 Labeling and Maximalilty

Chomsky (2013, 2015) argues that labels on syntactic structures are essential for interpreting the syntactic objects at the process of externalization and at the conceptual-intentional (CI) interface. Informally, externalization is phonological realization, and the CI system is for semantics. Accordingly, Chomsky proposes the labeling algorithm as an essential computation in syntax. Labeling occurs as a result of minimal search conforming to a third-factor principle, Minimal Computation which is not unique to language (for more on the third factor, see Chomsky (2005, 2013) among others). The labeling algorithm below is, therefore, not an arbitrary stipulation but a naturally deduced algorithm that is appropriate for the normal science (the notation t
indicates a lower copy under the copy theory of movement).

(2) The Labeling Algorithm:

a. Label \( \langle H, XP \rangle = [H \ H \ XP] \)
b. Label \( \langle XP, t_{VP} \rangle = [X \ XP \ t_{VP}] \)
c. Label \( \langle XP_F, YP_F \rangle = [F \ XP_F \ YP_F] \)

The simplest case is (2a). When labeling applies to a head-phrase structure, the head becomes a label. In contrast, when labeling applies to a phrase-phrase structure, the structure should be modified unless both heads share a feature F (or a bundle of features F). In (2b), \( t_{VP} \) is a lower copy of the phrase \( YP \). A lower copy is, by definition, invisible to labeling (see Chomsky (2013, 2015)). The structure \( [XP \ t_{VP}] \) is labeled as \( X \) which is identical to the head \( X \) under the Bare Phrase Structure (BPS) (for more about the BPS, see Chomsky (1995a, b)). If the \( YP \) is not a lower copy as in (2c), sharing \( F \) is the only option to properly label the phrase-phrase structure.

The labeling algorithm explains the obligatory exit of the EA from \( vP \). Thus, we no longer assume the Extended Projection Principle (EPP) or its descendant, the EPP feature. Roughly speaking, EPP states that SPEC-T or the subject position should be overtly occupied by an element.

(3) \([C \ [F \ John_F \ T_F \ t_{John} \ like \ Mary]] \) (John likes Mary.)

In the derivation of (3), the EA John externally merges with (i.e. is base-generated in) \( vP \). Then, John internally merges with (i.e. moves to) T because John and like do not share any features, but John shares Phi-features with T (i.e. agreement). EPP, therefore, reduces to labeling which itself is just minimal search. According to Rizzi (2015a, b. 2016), a shared F can be “a criterial feature” such as Q(uestion), Foc(us), Top(ic) and Subj(ect).

Adopting the labeling algorithm, Rizzi (2015a, b. 2016) postulates the maximality principle:

(4) Maximaliy: only maximal objects with a given label can be moved.

(\textit{Rizzi (2015b: 327)})
The maximality principle readily deduces a stipulation of the traditional X-bar theory (i.e., XP objects can be moved, but X-bar objects cannot) under labeling that conforms to a third-factor principle not specific to human language. Adhering to the SMT, the theory of labeling and Maximality is thus superior to the X-bar theory or the other theories largely specific to human language.

2.2 The Halting Problem

Rizzi (2010, 2015a, b, 2016) and others show “the halting problem” for the wh-movement. That is, a wh-phrase at SPEC-Q, where Q is selected by a verb like wonder, is impossible to extract, hence, “criterial freezing” occurs.

(5) The Halting Problem for Wh-Movement:

a. Bill wonders \[ \langle Q \langle Q \text{ which candidate} \rangle Q \text{ you voted for } t_{wh} \rangle \]

b. \[*\langle Q \text{ which candidate} \rangle \text{ does Bill wonder } \langle Q t_{wh} Q \text{ you voted for } t_{wh} \rangle \]

(adapted from Rizzi (2010: 20))

This halting problem has been explained in many ways, and it dates back to Lasnik and Saito (1992). In the current minimalist theory, the problem is recaptured under labeling and Maximality. As Rizzi (2016: 116) states, “[i]n terms of BPS, a maximal projection must be understood dynamically, as the maximal node with a given label.” If \( \langle Q \text{ which candidate} \rangle \) is moved from SPEC-Q as in (5b), it violates Maximality since the phrase is the non-maximal object with the given label Q. The maximal object with the label Q is \( \langle Q \langle Q \text{ which candidate} Q \text{ you voted for } t_{wh} \rangle \rangle \). Thus, \( \langle Q \text{ which candidate} \rangle \) (i.e. X-bar object) is unmovable, but \( \langle Q \text{ which candidate} Q \text{ you voted for } t_{wh} \rangle \) (i.e. XP object) is movable.

An anonymous reviewer mentions that which candidate is not the X-bar object but the maximal object DP bearing \( [+Q] \). According to Rizzi (2015a, b), criterial features become labels when they are shared. Following this assumption, the label of which candidate is not DP but just Q. Therefore, the maximal object bearing the Q label is \( \langle Q \langle Q \text{ which candidate} \rangle Q \text{ you voted for } t_{wh} \rangle \) in (5). In other words, \( \langle Q \text{ which candidate} \rangle \) is informally the X-bar object bearing the Q label. Furthermore, Rizzi (2015a, b, 2016) does not postulate \( C_{\langle Q} \) (i.e. C bearing \( [+Q] \)), contrary to Chomsky (2013, 2015). Instead, he assumes the dedicated Q head. Note that the word X-bar
*object* is used as an informal term to denote an unmovable syntactic object. There is no X-bar object, which was defined in the X-bar theory, in the minimalist framework since it violates the Inclusiveness Condition (see Chomsky (1995a, b)).

2.3 A Subject Criterion

While the previous section explained the freezing effect in an A-bar position (i.e. SPEC-Q), this section gives a general review of the freezing effect in an A position. Rizzi (2015a) argues that Subj appears in the TP space under his cartographic approach dating back to Rizzi (1997) (the head Phi and the head T may be a single head (see Rizzi (2015a)).

(6) ... Fin ... Subj ... Phi ... T ...

(Rizzi (2015a: 26))

The Subj head above is, in his term, a criterial feature/head because "the subject is the argument that is taken as 'being about' that argument" (Rizzi (2015a: 24)). One might say that the Subj head yielding this aboutness property does not exist since subjects can be regarded as topic-like elements in some sense. In other words, Topic could be enough to explain the aboutness property. Rizzi (2006), however, argues against this view. Even in a language like Italian which permits null subjects, a subject is feasible as an answer to the question *what happened*.

(7) The Aboutness Property of Subjects:

Che cosa è successo?

‘What happened?’

a. Un camion ha tamponato l’autobus per Roma
   a truck has bumped-into the bus for Rome
   ‘A truck bumped into the bus for Rome.’

b. L’autobus per Roma è stato tamponato da un camion
   the bus for Rome is been bumped-into by a truck
   ‘The bus for Rome was bumped into by a truck.’

c. #L’autobus per Roma, un camion lo ha tamponato
   the bus for Rome a truck it has bumped-into
   ‘The bus for Rome, a truck bumped into it.’ (a–c: Rizzi (2006: 122))
In the first two answers above, the subjects can be answers to the question “what happened,” but in the last one, the topic *L’autobus* cannot be a possible answer. The subject criterion or Aboutness needs to be distinct from the Topic.

Furthermore, Rizzi (2015a: 26) states that the functional head, Subj, structurally defines the subject-predicate articulation. It follows that SPEC-Subj, Subj and COMPL-Subj cause the subject-predicate interpretation as far as the structural configuration contributes to the semantic interpretation of the CI system. The canonical position for subjects is, therefore, not SPEC-T but SPEC-Subj under the system in Rizzi (2015a).

(8) a. Subj attracts a nominal element to its SPEC.

b. Subj triggers the aboutness interpretation and the subject-predicate interpretation at the interface. (a, b: adapted from Rizzi (2015a: 26))

The syntactic property in (8a) reminds us of EPP. However, there is no EPP in the spirit of the labeling theory (cf. note 4). So that Subj attracts an appropriate nominal element, it is necessary to assume a [+Subj] feature on the nominal.

Assuming this subject criterion, the syntactic object at SPEC-Subj is frozen. Rizzi (2015a, b) shows that-trace effect can be explained under labeling and Maximality.

(9) That-Trace Effect:

a. *Who_{+[Subj]} do you think [that [Subj t_{wh+[Subj]} Subj will come]]?*

b. *Who_{+[Q]} do you think [that *[Subj Mary_{+[Subj]} Subj will meet t_{wh+[Q]}]]?*

(a, b: adapted from Rizzi (2015a: 27))

In (9a), *who* is impossible to extract since *[Subj who Subj will come]* is the maximal object with the given label Subj in the embedded clause. This violates the maximality principle. One might say that the label/projection of *who* is not Subj but Q. Recall that the label/projection of the syntactic object becomes the shared criterial feature when feature sharing occurs. The label of *who* becomes Subj because *who* shares the feature with the Subj head. See the relevant discussion in section 2.2. In (9b), *who* can be extracted because it is the maximal object with the given label Q or D. Thus, only maximal objects with a given label can be moved, regardless of a Q label.

If the complementizer *that* is omitted, that-trace effect disappears. As Rizzi (2015b:
335, fn. 16) notes, when C is omitted, Subj is also omitted. Therefore, freezing is not triggered.

(10) Who do you think \( \notin \) [t, wh Subj will come]??

In this case, the wh-phrase who is maximal with respect to its Q label under labeling and Maximality. Notice that the label of the entire embedded clause becomes the label of will, which is T (or another head for auxiliaries), because who has moved from SPEC-T (cf. (2b)). Also, even if C is not omitted, the label of the whole embedded clause should not be Q for two reasons: C for declaratives and Q are different heads in Rizzi’s (2015a, b, 2016) system, and think cannot select Q.

3. The Double Object Construction

3.1 The Asymmetric Relation

Since Larson (1988), it has been widely accepted that the asymmetric relation exists between the indirect object and the direct object. That is, the indirect object should asymmetrically c-command the direct object in the double object construction.

(11) a. I showed Mary herself.
    b. *I showed herself Mary.
    c. I showed no one anything.
    d. *I showed anyone nothing. \( (a-d: \text{Larson (1988: 336–337)}) \)

The first and the third examples are unproblematic since Mary and no one asymmetrically c-command herself and anything, respectively. In contrast, the second and the fourth examples are problematic since herself and anyone asymmetrically c-command Mary and nothing, respectively. As long as the phenomena concerning anaphors and the negative polarity items are explained by the hierarchical relations, the indirect object occurs hierarchically higher than the direct object.

3.2 Prospective Possession

In the double object construction, it is widely assumed that there is prospective possession between the indirect object and the direct object (see Green (1974). Pinker
(2013), Harley (1995, 2002), Harley and Jung (2015), and works cited therein). *John gives Mary the book* is roughly paraphrased as *John “causes” Mary to “have” the book.* The verb *give* can be decomposed into at least two elements, CAUSE and HAVE.

(12) a. John sent a package to the [border / boarder].
    b. John sent the [boarder / "border"] a package.

    (a, b: adapted from Pinker (2013: 56))

In the dative construction, there is no such entailment as shown in (12a). The indirect object can, therefore, be an inanimate nominal such as *border.* In contrast, because prospective possession is denoted in the double object construction, the inanimate nominal *border* cannot occur as an indirect object (see (12b)). Note that possession does not have to be literal, but the referent of the indirect object can metaphorically possess the referent of the direct object.

(13) a. John told Mary the story.
    b. John asked Mary a question.
    c. John showed Mary the answer.

The examples above all show the recipient’s metaphorical possession. The properties reviewed in this section depend on semantics. Harley (1995, 2002) and Harley and Jung (2015) capture the semantic properties by the dedicated feature/head $P_{\text{HAVE}}$. Specifically, see Harley and Jung (2015) for a detailed discussion on how the syntactic head $P_{\text{HAVE}}$ is amenable to the semantic properties.

### 3.3 Structures of the Double Object Construction

Under a version of Distributed Morphology, Harley and Jung (2015) capture this semantic peculiarity, using the dedicated head $P_{\text{HAVE}}$ which is one of the prepositional heads proposed by Harley (1995, 2002) (for more on Distributed Morphology, see Halle and Marantz (1997), Marantz (1997, 2013) and Embick and Marantz (2008)). According to Harley and Jung (2015), the structure of the double object construction is as follows (the irrelevant parts of the structure are omitted):
(14) John sent [the boarder $P_{\text{HAVE}}$ a package]

Prospective possession shown in (12)–(13) is explained by this structure; $P_{\text{HAVE}}$ denotes prospective possession in (14). Furthermore, the asymmetric relation shown in (11) is also captured by this structure.

The structure proposed by Harley and Jung (2015) has a great advantage concerning the empirical facts of the double object construction. However, they do not mention the non-extractability of the indirect object.

(15) Wh-Movement:
   a. What did Mary give/send John t?
   b. *Who did Mary give/send t the computer?

(16) Relativization:
   a. This is the computer which Mary gave/sent the friend t.
   b. *This is the friend who Mary gave/sent t the computer.

(17) Clefting:
   a. It is the computer that Mary gave/sent John t.
   b. *It is John that Mary gave/sent t that computer.

(18) Tough Movement:
   a. That computer is easy to give/send John t.
   b. *John is easy to give/send t that computer.

(19) Topicalization:
   a. That computer, Mary gave/send John t.
   b. *John, Mary gave/send t that computer.


Oba (2005, 2016) and Hallman (2015) explain the non-extractability by assuming the elaborated syntactic structures. Their structures, however, are proposed under the earlier framework. The non-extractability should, therefore, be reanalyzed under the current framework. For instance, Oba (2005) argues that Thematization/Extraction (Th/Ex), which was originally proposed by Chomsky (2001), applies to the double object structure. When Th/Ex applies to the indirect object, it becomes unmovable because its phonological features have been spelled out to the phonological component.
However, the postulation of Th/Ex is dubious for empirical reasons. See Julien (2002) and Omune (2016) for a relevant discussion. Oba (2016) adopts the approach of criterial freezing by Rizzi (2010) and proposes a new structure of the double object construction. His analysis successfully explains the non-extractability of the indirect object but is still based on the earlier framework such as Chomsky (2000, 2001) and Rizzi (2010). Hallman (2015) adapts the traditional Larsonian structure and proposes the following structure of the double object construction:

(20) Hallman’s (2015) Structure of the Double Object Construction:

In this structure, DP₁ John is the indirect object, and DP₁ a puppy is the direct object. Hallman (2015: 417) argues that “[A-bar] movement may proceed from vP₂ but not
The indirect object is, therefore, non-extractable. However, it is not the explanation but the mere generalization from the familiar phenomena (e.g. Chomsky (1981), Lasnik and Saito (1984, 1992) and Diesing (1992)) including (15)–(19). What we want is not the generalization but the explanation. *Why can’t A-bar movement proceed from vP?* Hallman’s (2015) analysis does not answer the question. Furthermore, as mentioned, the structure is proposed in the earlier framework. In the following section, I propose that structure (14) account for both the non-extractability of the indirect object and the extractability of the direct object under labeling and Maximality. Additionally, the indirect object becomes extractable in passives.

(21) John was given the book.

I will also show that this extractability is explained by structure (14).

4. [+PHAVE] = a criterial feature

Adapting Rizzi’s (2006, 2015a, b, 2016) subject criterion (and Maximality) discussed in section 2.3, I propose that PHAVE be a criterial feature like Subj.

(22) A Proposal:

[+PHAVE] is a criterial feature.

The proposal is straightforward when we consider prospective possession which is the core property of PHAVE. Since [X [PHAVE Y]], is roughly interpreted as X HAVE Y, the subject-predicate interpretation holds. Namely, X is interpreted as something like the subject, which has the aboutness property. This view is supported by the following facts:

(23) a. John sent the girl a letter.

b. #John sent a girl the letter. (Oba (2016: 207))

When we compare the two examples above, the former is more natural than the latter since the indirect object is generally interpreted as old information in the double object construction. This is explained by the aboutness property. The indirect object is the
argument that is taken as “being about” that argument. Because criterial features are related to discourse properties, it is reasonable to assume (22).

Additionally, as reviewed in section 2.3, Subj occurs lower than C though CP’s left periphery is typically rich in the standard cartographic approach (see Rizzi (1997), among others). Given the parallelism between the two phases, CP and vP, it is plausible that the criterial head $P_{\text{HAVE}}$ occurs lower than v.

(24) CP phase:
... C ... Subj ...
(25) vP phase:
... v ... $P_{\text{HAVE}}$ ...

In sum, because $P_{\text{HAVE}}$ denotes the subject-predicate interpretation bearing prospective possession, it qualifies as a criterial feature such as $[+\text{Subj}]$. In addition, the parallelism between vP and CP holds by assuming $P_{\text{HAVE}}$ in vP.

5. A New Analysis

5.1 No Escape from SPEC-$P_{\text{HAVE}}$

As shown in section 3.3, it is impossible to extract the indirect object in the double object construction. This non-extractability is readily explained by proposal (22). Adopting Harley and Jung’s (2015) analysis, the structure of the vP phase for the double object construction is as follows (IO = Indirect Object, DO = Direct Object, and R is a verbal root underspecified as to categories):

(26) $[\text{EA } [\_v \text{ v-R } [\_r \text{ IO } [P_{\text{HAVE}} \text{ DO}]]]]$

I assume that IO bears $[+P_{\text{HAVE}}]$ in terms of labeling. Without assuming this, $\alpha$ cannot be labeled because both IO and $[P_{\text{HAVE}} \text{ DO}]$ are maximal objects. Recall that labeling $[\text{XP YP}]$ fails unless either XP or YP moves, or unless X and Y share the same feature (see (2)). The assumption is, therefore, tenable.

(27) $[\text{EA } [\_v \text{ v-R } [P_{\text{HAVE}} \text{ IO}[+P_{\text{HAVE}}] [P_{\text{HAVE}} \text{ DO}]]]]$
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Crucially, proposal (22) indicates that \([+P_{\text{HAVE}}]\) on IO is a criterial feature. Given (27), the structure for *John sent the boarder a package* is as follows (the boarder\([+P_{\text{HAVE}}]\) means that the nominal bears the feature \([+P_{\text{HAVE}}]\)):

\[
(28) \quad [C \ [\text{John} \ldots T \ldots \text{send} \ [P_{\text{HAVE}} \ \text{the boarder} \ [P_{\text{HAVE}} \text{ a package}]]]]
\]

(c.f. (14))

In this structure, a criterial feature \([+P_{\text{HAVE}}]\) is assigned to the indirect object *the boarder*. When the boarder\([+P_{\text{HAVE}}]\) merges with \([P_{\text{HAVE}} \text{ a package}]\), they share the criterial feature \([+P_{\text{HAVE}}]\) (see (22)). After a criterial feature is shared, the highest object with the label of the shared criterial feature becomes the maximal object. In contrast, feature sharing degrades each object, which was maximal, with the label of the criterial feature to the X-bar objects. Consequently, \([P_{\text{HAVE}} \text{ the boarder} \ [P_{\text{HAVE}} \text{ a package}]]\) becomes the maximal object with the given label \(P_{\text{HAVE}}\) under the labeling algorithm and Maximality. In other words, both the boarder\([+P_{\text{HAVE}}]\) and \([P_{\text{HAVE}} \text{ a package}]\) become X-bar objects with the given label \(P_{\text{HAVE}}\). This means that the boarder (and \([P_{\text{HAVE}} \text{ a package}]\)) cannot move further under the maximality principle. Namely, the boarder is frozen because it is not the maximal object with the given label \(P_{\text{HAVE}}\). All the bad cases in (15)–(19) are, therefore, explained under labeling and Maximality without postulating a new mechanism. The indirect object is non-extractable from the structure in (27).

5.2 Extractable Objects

Contrary to the case of the indirect object, the direct object is extractable as in (15)–(19). This extractability is also explained by structures (27)–(28) under labeling and Maximality. The direct object *a package* in (28) is the maximal object with the given label \(N\).\(^{11}\) Given the maximality principle, such objects are extractable. All the good cases in (15)–(19) are, therefore, explained.

As mentioned, it has been argued in the literature that the indirect object becomes extractable in passive voice.\(^{12}\)

\[
(29) \quad \text{John was given the book.}
\]
This case could be a counter-example to the analysis, but it is not necessarily so. If we assume that $P_{\text{HAVE}}$ raises (or internally pair-merges) to v-R, this case becomes unproblematic.

\[(30) \left[ v \ P_{\text{HAVE}} \right. - v-R \ [IO_{+[P_{\text{have}}]} \ t_{\text{have}} \ DO] \left. \right]\]

There is no feature sharing between $IO_{+[P_{\text{have}}]}$ and $t_{\text{have}}$ since the lower copy is, by definition, invisible.\(^{13}\) Hence, IO can be moved further because it is the maximal object with the given label $P_{\text{HAVE}}$.

As is well known, the indirect object and the direct object are both extractable from the dative construction.

\[(31) \ a. \ Who \ did \ John \ send \ the \ book \ to \ t_{\text{wh}}? \]
\[(31) \ b. \ Who \ did \ John \ send \ t_{\text{wh}} \ to \ Mary?\]

It is straightforward because $P_{\text{HAVE}}$ does not occur in the construction, but the typical or standard $P$ (i.e. $to$ in (31)) does. Both SPEC-P and COMPL-P are not criterial positions.

6. Further Consequences

6.1 Featural Relativized Minimality

Runner (2001) observes that the indirect object cannot be sub-extracted.

\[(32) \ *Who \ did \ you \ say \ Cindy \ sent \ a \ friend \ of \ t_{\text{wh}} \ a \ picture? \quad (\text{Runner} \ (2001: \ 40))\]

This empirical fact leads to an interesting consequence about the formalization of $[+P_{\text{HAVE}}]$ based on fRM (featural Relativized Minimality). That is, $[+P_{\text{HAVE}}]$ belongs to the Operator class.

As Rizzi (2015a: 28) notes, fRM “assumes that relevant morphosyntactic features triggering movement are organized into feature classes along the following lines:”

\[(33) \ \text{Argumental: Subj, person, number, gender, case, ...} \]
\[(33) \ \text{Operator: Q, Foc, Neg, Quantificational adverbials, ...} \]
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Modifier: ...
Topic: ...

(adapted from Rizzi (2015a: 28))

fRM solves the locality problem: the closest nominal would be attracted. As Rizzi (2015a: 27) notes, “[o]ne salient property of chains terminating in Spec Subj is that they are strictly local, with the closest nominal element systematically attracted to Spec Subj.” Let us consider the following structures with respect to Foc and Subj:

(34) a. Foc ... [DP v [V DP [+Foc]]]
    b. Subj ... [DP v [V DP [+Subj]]]  (Rizzi (2015a: 28))

In (34a), Foc can attract DP [+Foc] since there is no intervening element between Foc and DP [+Foc]. On the other hand, Subj cannot attract DP [+Subj] because DP at SPEC-v is a possible intervener that bears “Argumental” features (e.g. person, number, gender). The locality of subjects is thus explained by fRM.

6.2 Sub-Extraction

As shown in the previous section, [+Subj] belongs to the Argumental class in (33). However, what class does [+P_{HAVE}] belong to? It seems straightforward that it belongs to the same class as [+Subj] because its semantic property is similar to [+Subj]. This feature classification, however, leads us to an unwelcome result concerning the case of sub-extraction. Let us consider the structure of (32) under the proposed analysis:

(35) *[Q Who [+Q] [Q you say Cindy sent [p_{have} [p_{have}, a friend of t_{wh} [+Q]]] [P_{HAVE} a picture]]]]

("Who did you say Cindy sent a friend of t_{wh} a picture?)

who must be sub-extractable if the feature classification is tenable, but the fact is opposite: it is no longer tenable. Nevertheless, the structure of (35) still seems right. The problem of sub-extraction can be solved by assuming that the feature class of [+P_{HAVE}] is not Argumental but Operator. That is, I assume [+P_{HAVE}] and Q belong to the same feature class.
(36) Argumental: Subj. person, ...
Operator: P_{HAVE}, Q, Foc, ...

The revised classification correctly explains the derivation of (35). When Q tries to attract whom_{Q}, it fails. The label P_{HAVE} on a friend of whom_{Q} blocks Q’s attraction because P_{HAVE} and Q both belong to the same “Operator” class.

The semantic nature of Operator [+P_{HAVE}] is obscure, but it is possible to interpret the argument structure of the double object construction as follows (R_{send} is the verbal root of send):

(37) [John v_{cause-R_{send}} [+P_{HAVE} [P_{HAVE Mary [+P_{HAVE}]]]] [P_{HAVE} P_{HAVE} [the book]]]]]]
↓

for PROSPECTIVE POSSESSOR x, x Mary, John CAUSE x to HAVE the book by sending.

I will leave further refinement of the semantic nature of Operator [+P_{HAVE}] to future research.

In short, the following generalization holds: P_{HAVE} is semantically similar to Subj, but its feature class is the same as Q (and other features like Foc, Neg). Although how this feature classification affects the semantic nature is vague, the problem not only applies to P_{HAVE} but also to other heads such as Foc, Neg and Quantificational adverbials. We need further studies to unveil the detailed property of P_{HAVE} and the feature classes.

7. Conclusion

This paper briefly reviewed the recent theoretical framework of syntax and discussed its consequences, particularly focusing on the double object construction in English. The main proposal in this paper is that [+P_{HAVE}] is a criterial feature. Given the proposal and structure by Harley and Jung (2015), labeling and Maximality yield a new analysis of the non-extractability of IO. In addition, it has been suggested that P_{HAVE} is a criterial head belonging to the feature class, Operator. This suggestion eventually accounts for the non-sub-extractability of IO. Accordingly, this paper has shown that the recent theory of minimalist syntax can explain the phenomena of
extraction in the double object construction.

**Notes**

* I gratefully acknowledge the valuable comment and feedback by two anonymous reviewers of this work. All remaining weaknesses and errors are my own responsibility.

1. According to Chomsky (2010: 52), the simple equation of the SMT holds as follows, satisfying interface conditions: \( \text{SMT} \) Interfaces + Merge = Language. As for evolvability, see Hauser, Chomsky and Fitch (2002), Hauser et al. (2014) and Chomsky (2010, 2013).

2. Chomsky (2013: 44) assumes “\( \alpha \) to be ‘in the domain D’ if and only if every occurrence of \( \alpha \) is a term of D.”

3. The element occupying the subject position can be phonologically null. For instance, PRO and pro have no phonological content.

4. To completely eliminate EPP, it is essential to assume the weakness of T in English (and that of the verbal roots in any language). Chomsky (2015) assumes that weak heads cannot serve as labels and therefore must agree to be strong and serve as labels. Accordingly, expletives (e.g. *it* and *there*) must merge and agree with T in expletive constructions. What features the expletive *there* bears is controversial, but it arguably has at least one Phi-feature, [person] (see Chomsky (2000, 2001, 2004), Richards and Biberauer (2005), among others).

5. Rizzi (2015b) suggests that we may replace the Subj head with the Person head, contrary to Rizzi (2015a). However, this paper adopts Subj for expository purposes.

6. An anonymous reviewer states that (7c) is unacceptable because *L’autobus* is focused. If it were focused, however, the comma after *L’autobus per Roma* should be removed from the sentence.

7. An anonymous reviewer wonders whether postulating Aboutness is compatible with the minimalist theory. This is an important question because the postulation of discourse related features (e.g. Foc, Top and Subj) in lexicon violates the Inclusiveness Condition (see Chomsky, Gallego and Ott (to appear)). Conceptually,
the minimalist theory should not assume those features. However, without
postulating those features, the minimalist theory could lose its empirical coverage
of explaining various phenomena such as topicalization, focalization and Aboutness.
To reduce the tension between conceptual desiderata and empirical coverage, it is
necessary to await the further refinement of the theory itself.

8. Theoretically speaking, \([\text{Subj} \; \text{who} \; \text{Subj} \; \text{will} \; \text{come}]\) can be extracted from the
embedded CP in (9a) as long as we follow the Maximalty Principle because the
syntactic object is maximal with respect to the label Subj. Empirically, the
extraction, nevertheless, seems to be impossible. I tentatively assume that the
phase impenetrability condition \((\text{PIC})\) (see Chomsky (2000, 2001)) bars this
extraction. PIC states that the complement of a phase head (i.e. C and v) is not
accessible. Therefore, the complement of \text{that} is non-extractable. The compatibility
between PIC and the maximality principle remains to be investigated.

9. Rizzi (2015b) does not explain in detail why the C deletion triggers the Subj
deletion. However, he suggests that C and Subj are in a special relation that is
motivated by feature inheritance. For more on feature inheritance, see Richards

10. The detailed argument structure of (14) is \([\text{EA} \; v_{\text{cause}} \cdot R_{\text{send}} \; [I_A \; \text{P} \; \text{HAVE} \; I_A_2]]\). Note
that \(v_{\text{cause}}\) is for transitive/causative event, \(R_{\text{send}}\) denotes the verbal root of \text{send}, and
\(I_A\) is an internal argument. In addition, \(R_{\text{send}}\) directly adjoins to \(v_{\text{cause}}\) in this
structure.

11. This label may not be N but may be other features such as D, Subj and Top,
depending on which features the direct object bears. As for nominal structures
under the labeling theory, see Oishi (2015).

12. In passive voice, IO should move from the predicate internal position in terms of
labeling. If IO remains in situ, labeling cannot correctly take place in the TP space.
That is, IO should move to SPEC-T because T alone is too weak to serve as a label.
Given the weakness of T, Subj could be weak since SPEC-Subj is the canonical
position for subjects under the cartographic approach by Rizzi (2015a, b, 2016).
See also note 4. In addition to passives, we can extract IO but not DO in the
(i) Who did you give what/which check?

It is clear that the multiple wh-phrases affect the extractability. Accordingly, it seems that the extractability, in this case, is not explained only by the structures of the double object construction and the dative construction. It should be explained by the structures and the mechanism of the multiple wh-question. Additional research is required on this topic.

13. According to Epstein, Kitahara and Seely (2016), the lower copy left by internal pair-Merge of heads (i.e. head-raising) is visible. However, following Nomura (2017), I simply assume that all lower copies are invisible under the definition in note 2. See Chomsky (2015) for more on this matter.

References


