On the Peculiarities of Small Clauses: Clausehood and Selectional Relations

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Nozomi Moritake

1. Introduction

This paper explores the internal structure of small clauses (henceforth, SCs) and their peculiar properties. (1) shows a typical SC.

(1) John considers [$_{SC}$ Mary beautiful].

As (1) clearly shows, the internal structure of SCs is obscure because SCs only consists of subjects and predicates in contrast to ordinary clauses.[1]

Intriguingly, as Contreras (1995) argues, the acceptability of co-reference of a reciprocal with matrix subjects differs between (2a) and (2b).[2]

(2) a. *[How proud of each other$_i$]$_j$ do they$_i$ consider [$_{SC}$ John t_j]?
(Sportiche (1990: 15))

b. [How good a friend of each other('s)$_i$]$_j$ do they$_i$ consider [$_{SC}$ John t_j]?
(Contreras (1995: 137))

The only difference between (2a) and (2b) is the predicate type contained in SCs. We attempt to accommodate these facts in our proposal.

This paper will also investigate the construction called Mad Magazine Sentence. This consists of subjects and predicates, which resembles SCs, as (3) illustrates.

(3) Him wear a tuxedo?! (Sure.) (Akmajian (1984: 2))

This paper is organized as follows: Section 2 introduces puzzles involving the binding phenomenon in SCs. In Section 3, we briefly review previous analyses. Section 4 lays out some peculiarities of SCs, including clausehood and selectional properties. We outline the theoretical background of this paper in Section 5. Section 6

presents our main proposal. In Section 7, we deal with the Mad Magazine Sentence. Section 8 briefly concludes our paper.

2. Binding Phenomena

2.1. A Contrast between Predicates and Arguments

In this section, we would like to introduce some puzzles involving the binding phenomenon in SCs. Before presenting concrete examples of SCs, let us first look at other binding phenomena:

(4) a. [How proud of himself$*_{i/j}$]$_k$ does John$_i$ think he$_j$ will be t_k?
(Huang (1993: 108))

b. [Those pictures of himself$_{i/j}$]$_k$ John$_i$ thinks Bill$_j$ will buy t_k. (*ibid.*)

(4a) and (4b) both show that the predicate in a subordinate clause is fronted to the matrix clause. The difference between (4a) and (4b) is whether fronted predicates are AP (=(4a)) or DP (=(4b)). Furthermore, as we can see, the relevant distinction is tightly related to the binding phenomena: in (4a), a subject in the subordinate clause, but not a subject in the matrix clause, can bind a reflexive in the *wh*-moved AP predicate. (4b) is ambiguous in that either the matrix subject or the subordinate subject can be an antecedent of the reflexive *himself*. This fact is exemplified by combining the Predicate Internal Subject Hypothesis (henceforth, PISH) (cf. Kuroda (1988), Sprotiche (1988), Koopman and Sportiche (1991)) with Huang's (1993) proposal. According to PISH, a subject originates in a Spec position of the predicate. For instance, if a predicate is a verb (namely, v*P), the subject is base-generated in Spec-v*. Adopting this hypothesis, Huang (1993) argues that in (4a), the subject *he* originates in Spec-A, and the entire AP predicate including a trace (copy) of *he* moves to matrix Spec-C. In this case, *himself* is bound by the trace of *he*, not by *John*.[3, 4] (5) illustrates a rough derivation of (4a), where traces are replaced by copies indicated by strike-through texts and *how* is omitted for the sake of simplicity:

(5) [$_{CP}$ [$_{AP}$ ~~he~~ [$_{A'}$ proud of himself$*_{i/j}$]] [$_{C'}$ does [$_{TP}$ John$_i$ … [$_{CP}$ ~~[$_{AP}$ he [$_{A'}$ proud of himself]]~~ [$_{TP}$ he$_j$ … ~~[$_{AP}$ he [$_{A'}$ proud of himself]]~~]]]]]]

Here, the predicate cannot be fronted without including the copy of its subject since

such a movement violates the general constraint of movements: an intermediate projection cannot undergo movement.

In contrast, in (4b), the fronted phrase is a DP object, which does not involve the copy of *Bill* since the subject does not originate in a DP argument. Based on this claim, the derivation of (4b) is roughly illustrated in (6), where the DP object moves through embedded Spec-C.[5]

(6) [$_{CP}$ [those pictures of himself$_{i/j}$] [$_{TP}$ John$_i$ thinks [$_{CP}$ ~~[those pictures of himself]~~ [$_{TP}$ Bill$_j$ will buy ~~[those pictures of himself]~~]]]]

As (6) shows, the copy of *those pictures of himself* exists at the base-generated position and at embedded Spec-C, which enables *John* and *Bill* to c-command the reflexive *himself*. Therefore, the reflexive *himself* can be bound by either *John* or *Bill*. The contrast between (4a) and (4b) is therefore reduced to PISH.

2.2. Binding Phenomena in SCs

It is generally accepted that the subject of SCs binds anaphors (reflexives and reciprocals) in its predicate within SCs regardless of the phrasal category of the predicate. Let us look at (7).

(7) a. We consider [$_{SC}$ Mary$_i$ proud of herself$_i$]. (Contreras (1995: 136))

b. I consider [$_{SC}$ them$_i$ each other$_i$'s friend]. (Contreras (1995: 142))

In (7a), *Mary* binds *herself* in its AP predicate, whereas *them* binds *each other* in its DP predicate in (7b). These two examples have no difference with respect to one property of subjects of SCs: they can bind anaphors in its predicate within SCs.

There is, however, a clear distinction between the following two sentences:

(8) a. *[How proud of each other$_i$]$_j$ do they$_i$ consider [$_{SC}$ John t_j]?
(Sportiche (1990: 15))

b. [How good a friend of each other('s)$_i$]$_j$ do they$_i$ consider [$_{SC}$ John t_j]?
(Contreras (1995: 137))

An obvious difference between (8a) and (8b) is whether the predicate is AP (=(8a)) or DP (=(8b)). This distinction further correlates with the possibility that a matrix subject is capable of binding *each other* located in the fronted *wh*-predicates: if the predicate

is AP, the matrix subject cannot bind *each other*. The matrix subject, on the other hand, can bind *each other* if the fronted predicate is DP. Note that an AP predicate bans the matrix subject from binding anaphors not only in *wh*-moved AP predicates as in (8a), but also in topicalized AP predicates as in (9).

(9) [Proud of himself$_{*i/j}$]$_k$ John$_i$ doesn't consider [$_{SC}$ Bill$_j$ t_k].

(Bowers (1993: 623))

In what follows, we refer to SCs with the AP predicate and SCs with the DP predicate as SCA and SCD, respectively. Briefly speaking, these observations are summarized as follows:

(10) a. In SCA, only the subject of SCA binds anaphors in an AP predicate.

b. In SCD, either the matrix subject or the subject of SCD can bind anaphors in a DP predicate.

The contrast between SCA and SCD is apparently similar to the empirical facts listed in (4). Suppose that these contrasts are due to the same reason as that of (8). We then expect that the subject of SCA originates in the AP predicate, and thus the matrix subject cannot be the proper antecedent for anaphors in the AP predicate, while the subject of SCD is not base-generated in the DP predicate, which permits anaphors in the DP predicate to be properly bounded by either matrix subjects or subjects of SCD when the DP predicate is fronted. From this point of view, we will discuss the internal structures of SCs in light of the recent framework of the Minimalist Program.

3. Previous Analyses

3.1. den Dikken (2006)

SCs involve a predication relation. In (11), the AP predicate *smart* is predicated of the subject *Imogen*.

(11) Brian considers [$_{SC}$ Imogen smart]. (den Dikken (2006: 58))

den Dikken (2006) argues that a predication relation is represented in a specific maximal projection headed by the functional head R(elator), which is shown in (12).

(12) [$_{RP}$ subject [$_{R'}$ R [predicate]]]

According to den Dikken (2006), this predication relationship is mediated by the

functional head R(elator), which can be realized by various elements. Based on this, den Dikken (2006) proposes a configuration of SCs as in (13).

(13) We consider [$_{RP}$ Mary [$_{R'}$ R [proud of herself]]] (=(7a))

The structure in (13) predicts that the predicate itself can undergo movement since it constitutes a maximal projection. More precisely, the predicate can move without including a copy of its subject, unlike Huang's (1993) analysis. This structure then incorrectly expects that *each other* in (8a) should be bound by *they* at the edge of matrix v*P since the relevant derivation proceeds as follows:

(14) [$_{CP}$ [How proud of each other$_i$] [$_{C'}$ do [$_{TP}$ they$_i$ [$_{v*P}$ ~~[How proud of each other$_i$]~~ [$_{v*P}$ ~~they~~ consider [$_{RP}$ John [$_{R'}$ R ~~[How proud of each other$_i$]~~]]]]]]]]

Therefore, we need an alternative analysis in order to capture the ungrammaticality of (8a).

3.2. Contreras (1995)

This subsection introduces Contreras's (1995) analysis. Based on the contrast between (8a) and (8b), Contreras (1995) divides the internal structure of SCs depending on what predicate is included in SCs. To be precise, Contreras (1995) examines SCA and SCD differently. We first present the internal structure of SCA:

(15) We consider [$_{FP}$ Mary$_i$ [$_{F'}$ F [$_{AP}$ t_i [$_{A'}$ proud of herself]]]]] (=(7a))

In this analysis, the subject of SCA originates in Spec-A. It then moves to Spec-F. Here, F simply means a functional head. According to this structure, the facts in (8a) and (9) can be appropriately accommodated with Huang's (1993) analysis: the predicate must move with a copy of its subject involved.

On the analogy of Larson's (1988) analysis of the Double Object Construction, Contreras (1995) provides the following structure for SCD:

(16) I [$_{VP}$ consider$_i$ [$_{FP}$ them$_j$ [$_{F'}$ t_i [$_{VP}$ t_j [$_{V'}$ t_i each other's friend]]]]] (=(7b))

First, *consider* is merged with *each other's friend*. After that, *them* is merged with its Spec-V. F is then merged with lower VP, and *them* moves to Spec-F. To retain the word order, Contreras (1995) assumes that the verb merged at lower V moves to higher V via F. This structure correctly captures (8b), where anaphors contained in the

DP predicate can be bound by either matrix subjects or subjects of SCs.[6]

(17) [CP [How good a friend of each other('s)$_i$] [C' do [TP they$_i$ [v*P ~~[How good a friend of each other('s)$_i$]~~ [v*P ~~they~~ consider [FP John [F' ~~consider~~ [VP ~~John~~ [V' ~~consider~~ ~~[How good a friend of each other('s)]~~]]]]]]]]]]

Furthermore, Contreras's (1995) analysis is superior to den Dikken's (2006) in that it properly captures the contrast between (8a) and (8b).

Notice that Contreras (1995) proposes the structure of SCD on the analogy of Larson's (1988) analysis of the Double Object Construction. There are, however, clear differences between SCD and Double Object Construction. It is taken for granted that Heavy NP Shift cannot be applied to an indirect object in the Double Object Construction as in (18a), while (18b) shows that it is entirely possible in SCD.

(18) a. *John sent t_i a letter [every musician in the orchestra]$_i$.
(Larson (1988: 354))

b. I consider [SC t_i a fool] [any man who smokes]$_i$. (Aarts (1992: 132))

Therefore, there is no principled reason to construct the structure of SCD based on a formal analogy of the Double Object Construction.

Furthermore, the category of F is yet to be determined. It is theoretically desirable to eliminate vague elements from syntax. From these perspectives, we argue that Contreras's (1995) analysis still needs to be reconsidered.

4. Peculiarities of SCs

This section discusses specific properties of SCs. First, the proposition expressed by a complement clause following the verb *considered* is identical regardless of whether it consists of a finite clause or SCs (cf. Chomsky (1981, 1986), Aarts (1992), among others).

(19) a. John considered that Mary is beautiful.

b. John considered Mary beautiful.

SCs, however, lack overt C and T as the following examples illustrate:

(20) a. *I didn't consider that/if/whether/for it suitable. (Radford (1988a: 327))

b. *I consider your attitude to/can deeply offensive. (*ibid*.)

In addition, Kitagawa (1985) argues that SCs have an interpretation identical to the clause including an overt copula, in spite of the fact that it is never lexicalized in SCs:

(21) a. *I consider [SC him be a genius]. (Kitagawa (1985: 214, slightly revised))
b. I consider [he is a genius]. (Kitagawa (1985: 214))

In short, SCs superficially lack C, T, and V, though they have a parallel interpretation to an ordinary clause including those elements. Here, we would like to introduce Chomsky's (1981) claim:

(22) a. As usual, *consider* takes NP or clausal arguments, […] By the assumption (I) of uniformity of lexical entry – the null hypothesis – (iv) and (v) (*Bill foolish* and *it important that S*) must also involve clausal arguments: […] (Chomsky (1981: 106, underlined texts mine))
b. [a] "small clause" – a clausal structure lacking INFL and the copula. […] Comparison with languages similar to English suggests that S'-deletion is obligatory for small clauses …. (Chomsky (1981: 107))

To recapitulate Chomsky's (1981) claim, SCs satisfy the selectional property of verbs, namely that verbs take a clausal complement, despite the fact that C and T are not overtly realized within SCs. Chomsky (1981) further assumes that C is eliminated from SCs by S'-deletion, which is an operation that deletes S' (namely, a CP layer). These points are challenging when we propose internal structures for SCs, but should be dealt with. We then attempt to encompass those facts in our proposal.

5. External Pair-Merge of Heads

Before starting to discuss our concrete proposal, we introduce external Pair-Merge of heads proposed by Epstein, Kitahara, and Seely (EKS) (2016), which is crucially related to our main discussion.

On the basis of Chomsky's (2004, 2015) definition of (Internal) Pair-Merge, EKS (2016) propose that Pair-Merge can also be externally applied to R(oot) and v* as <R, v*> before they are introduced into the derivation. In this case, the phasehood of v* is cancelled at the beginning of the derivation because Pair-Merge of R to v* makes v* (with unvalued phi-features) invisible to narrow syntax.

(23) [e]xternal pair-Merge of R to v* makes v* including its uPhi (unvalued phi-features) invisible.

(Epstein, Kitahara, and Seely (2016: 96, underlined texts mine))

Mizuguchi (2019a) extends this mechanism to a relation between C and T, and proposes that <C, T> and <T, C> amalgams are introduced in the Exceptional Case-Marking Construction (ECM) and the Raising Construction, respectively.[7] The following schemata represent rough structures for ECM and Raising Construction.

(24) a. We consider Mary to be proud of herself. (ECM)

b. We [R-v* [Mary [~~R~~ [~~Mary~~ [<C, T> be [~~Mary~~ proud of herself]]]]]]

(25) a. Mary seems to be here. (Raising Construction)

b. Mary seems [~~Mary~~ [<T, C> [be [~~Mary~~ here]]]]

The advantage of Mizuguchi's (2019a) proposal is that both clauses contain C. Recall that Chomsky (1981) argues that *consider* takes clausal arguments. *Seem* can also take clausal arguments as in *It seems that Mary is here*. What this implies is that there may be C in ECM and Raising Construction. Mizuguchi's (2019a) proposal can accommodate Chomsky's (1981) assumption. On top of that, Mizuguchi's (2019b) claim has a possibility that the selectional requirement suggested by Chomsky (1981) is satisfied. Mizuguchi (2019b) points out that Merge comes for free in narrow syntax (cf. Chomsky (2004 *et seq*)), and thus it is difficult to constrain Merge in terms of selection. He then argues that selection works at the Conceptual-intentional (CI) interface. If this is on the right track, both ECM and Raising Construction contain C and the selectional properties of *consider* or *seem* can be properly met at the CI interface. This proposal sheds light on an analysis of SCs. In the following sections, we will discuss the internal structures of SCA and SCD based on these perspectives.

6. Analysis

6.1. Theoretical Assumptions

6.1.1. Labeling Algorithm

Chomsky (2013, 2015) maintains that Merge is a primitive operation and that Merge comes for free. Merge applies to two syntactic objects (henceforth, SO),

forming a two-membered unlabeled set. According to Chomsky (2013), however, the label must be assigned to every SO in order for the CI and Sensorimotor (SM) interfaces to interpret the set. He posits that the labeling algorithm (hereafter, LA) determines the label of the set. He further assumes that Minimal Search (in what follows, MS) is applied to the set at the timing of Transfer, and the first head found by MS is regarded as the label of the set. Consider the set consisting of a head (H) and a phrase (XP).

(26) $\{_{\alpha}$ H, XP$\}$ (α=H)

MS finds the head H in α. In this case, H serves as the label of this set.

The next instance we consider is a complex case where the set consists of two phrases, namely {XP, YP}. Consider (27).

(27) $\{_{\alpha}$ XP, YP$\}$

Unlike (26), MS locates two heads (X and Y) simultaneously in (27), which induces a labeling indeterminacy. To avoid this indeterminacy, Chomsky (2013, 2015) assumes that there are two ways to solve the problem in (27). One is a movement (that is, Internal Merge (IM)) of one of two phrases. Chomsky (2013) argues that when XP moves out of the set {XP, YP}, a copy of XP left by IM is invisible to MS, whereby the head of the remaining SO (=Y), becomes the label of this set as in (28).

(28) {XP $\{_{\alpha}$ ~~XP~~, YP$\}$} (α=Y(P))

The other strategy is feature sharing. When each head shares a prominent feature (an agreement feature (Chomsky (2015)), the relevant feature counts as the label of the set. Consider (29), where X and Y share a feature F via agreement.

(29) $\{_{\alpha}$ $\{_{XP}$ $X_{[F]}$ {WP}$\}$, $\{_{YP}$ $Y_{[uF]}$ {ZP}$\}\}$ (α=<F, F>)

In this case, the label of α is determined by the shared feature as <F, F>. This paper adopts the mechanism of LA proposed by Chomsky (2013, 2015).

6.1.2. Raising to Object

It has been claimed since Postal (1974) that the subject of SCs raises to matrix clause (cf. Lasnik and Saito (1991), Bowers (1993), Hong and Lasnik (2010), *inter alia*). This assumption is supported by the following contrast between (30) and (31):

(30) a. ?*The DP proved [that the defendants were guilty] during each other's trials.
(Lasnik and Saito (1991: 328))

b. ?*The DA proved [that none of the defendants were guilty] during any of the trials. (Lasnik and Saito (1991: 329))

(31) a. The DA proved [two men guilty] during each other's trials.
(Hong and Lasnik (2010: 279))

b. The DA proved [noone guilty] during any of the trials. (*ibid*.)

The acceptability of (30) is severely degraded because the embedded subjects cannot c-command into the matrix clause adjuncts, and thus binding of a reciprocal and licensing of NPI fail. (31) is, however, grammatical. This is reducible to the assumption that the subjects of SCs raise into the matrix clauses, allowing them to bind a reciprocal and license NPI. Thus, this paper assumes with previous studies including Postal (1974) that the subjects of SCs must raise to the matrix clauses as in (32).

(32) The DA [R-v* [two men [[~~R~~ [SC ~~two men~~ guilty]] during each other's trials]]]

6.2. Proposal

We have already seen in Section 4 that SCs show clausal properties: an interpretation identical to ordinary clauses and selectional properties of matrix verbs. On the basis of these characteristics, we propose that C, T, v*, and R are introduced into the derivation with all of them externally Pair-Merged as <R, <v*, <T, C>>>. Note that we postulate that the amalgam <R, <v*, <T, C>>> can be a label on its own on the analogy of the assumption that the amalgam <R, v*> is qualified as the label (cf. Chomsky (2015), EKS (2016)). SCs then involve functional categories such as C or T identical to ordinary clauses. Due to this, we assume that SCs have the same interpretation as clauses in general. We further claim that matrix R selects C in the amalgam <R, <v*, <T, C>>> at the CI interface (*pace* Stowell (1981, 1983)). This argument fits Chomsky's (1981) implication that the verbs taking SCs satisfy their lexical entries, namely taking clausal arguments. In addition, we assume that the

amalgam <R, <v*, <T, C>>> can be realized as *as* in SCs and R has the prerogative whether R spell-outs the amalgam <R, <v*, <T, C>>> (cf. den Dikken (2006)).[8]

(33) a. Imogen considers [$_{SC}$ Brian (as) a nice guy]. (den Dikken (2006: 34))
b. Imogen regards [$_{SC}$ Brian *(as) a nice guy]. (*ibid.*)

6.3. The Internal Structure of SCA

This subsection discusses the internal structure of SCA. On the basis of the discussion in Section 2.2, we propose that the subject of SCA is first merged with an AP predicate in accordance with PISH and the amalgam <R, <v*, <T, C>>> takes the resulting constituent as its complement. Our concrete proposal is as follows:

(34) a. We consider Mary proud of herself. (=(7a))
b. {$_{\alpha}$ {$_{D}$ Mary} {$_{A}$ proud of herself}}
c. {$_{\beta}$ <R, <v*, <T, C>>> {$_{\alpha}$ {$_{D}$ Mary} {$_{A}$ proud of herself}}}
d. {$_{\gamma}$ {$_{D}$ Mary} {$_{\beta}$ <R, <v*, <T, C>>> {$_{\alpha}$ ~~{$_{D}$ Mary}~~ {$_{A}$ proud of herself}}}}
e. {$_{\eta}$ we {$_{\zeta}$ v* {$_{\varepsilon}$ {$_{D}$ Mary} {$_{\delta}$ R {$_{\gamma}$ ~~{$_{D}$ Mary}~~ {$_{\beta}$ <R, <v*, <T, C>>> {$_{\alpha}$ ~~{$_{D}$ Mary}~~ {$_{A}$ proud of herself}}}}}}}}
(α=A, β=γ=<R, <v*, <T, C>>>, δ=R, ε=<phi, phi>)
f. {$_{\kappa}$ C {$_{\iota}$ we {$_{\theta}$ T {$_{\eta}$ ~~We~~ {$_{\zeta}$ R-v* {$_{<phi, phi>}$ {$_{D}$ Mary} {$_{R}$ ~~R~~ {$_{<R, <v*, <T, C>>>}$ ~~{$_{D}$ Mary}~~ {$_{<R, <v*, <T, C>>>}$ <R, <v*, <T, C>>> {$_{A}$ ~~{$_{D}$ Mary}~~ {$_{A}$ proud of herself}}}}}}}}}}}
(ζ=η=R-v*, θ=T, ι=<phi, phi>, κ=C)

First, *Mary* and *proud of herself* are merged as in (34b). The amalgam <R, <v*, <T, C>>> is merged with the resulting structure, arriving at (34c). After that, *Mary* is internally merged with β, resulting in (34d). The following operations then take place and the derivation arrives at (34e): R is merged with γ, *Mary* is internally merged with δ, and v* and *We* are introduced into the derivation. At this point, MS applies to the sets in (34e). The relevant labels are determined as follows: α=A, β=γ=<R, <v*, <T, C>>>, δ=R, ε=<phi, phi>. After the labeling, R is internally Pair-Merged with v* (cf. Chomsky (2015)). (34f) represents the CP phase level operations: T is merged with ζ, and *We* subsequently undergoes IM with θ. C is then introduced into the derivation. MS is applied to the sets here. The relevant labels are as follows: ζ=η=R-v*, θ=T,

ι=<phi, phi>, κ=C.

We can accommodate (8a) and (9) together with Narita's (2015) analysis. The relevant examples are repeated here as (35a) and (35b), respectively.

(35) a. *[How proud of each other$_i$]$_j$ do they$_i$ consider [$_{SC}$ John t_j]?

(Sportiche (1990: 15))

b. [Proud of himself*$_{i/j}$]$_k$ John$_i$ doesn't consider [$_{SC}$ Bill$_j$ t_k].

(Bowers (1993: 623))

Narita (2015) reformulates Huang's (1993) analysis in order to fit into the latest Minimalist Program framework. Narita (2015) argues that the set composed by both "traces" (copies) left by IM cannot be labeled felicitously. This is because copies left by IM is invisible to MS (Chomsky (2013)). He refers to this constraint as *{*t*, *t*}.

(36) *{*t*, *t*}

Syntactic Objects (SOs) whose two members are both "traces" (copies) created by Internal Merge (IM) are ruled out. (Narita (2015: 286))

This filter-like condition bans the following structure because the label of α cannot be determined, violating Full Interpretation at the interfaces.

(37) XP … YP … {$_α$ ~~XP~~, ~~YP~~} (α=?)

Narita (2015) then claims that when predicates are fronted, a copy of its subject must be involved in them in order for the relevant set to be labeled felicitously. In (38), the label of α is determined as the category of the predicate (here, A(P)).

(38) {$_α$ {~~subject~~} {$_A$ predicate}} … subject … ~~{$_α$ {subject} {$_A$ predicate}}~~

(α=A)

If subjects and predicates undergo IM separately, the resulting representation will be as follows, where the label of α remains unspecified. It raises a problem against the interfaces.

(39) predicate … subject … {$_α$ ~~{subject}~~ ~~{predicate}~~} (α=?)

On the basis of Narita's (2015) analysis, (35a) and (35b) are explained by the following: in both examples, the fronted predicates must contain the copy of their subject. The matrix subjects thus cannot engage in a binding relation with a reciprocal or reflexive. The representations in (40) show this point (with many simplifications).

(40) a. {$_{\alpha}$ ~~{John}~~ {how proud of each other$_{i/*j}$}} … they$_j$ … John$_i$ … {$_{\alpha}$ ~~{John}~~ {how proud of each other$_i$}}

b. {$_{\alpha}$ ~~{Bill}~~ {proud of himself$_{i/*j}$}} … John$_j$ … Bill$_i$ … {$_{\alpha}$ ~~{Bill}~~ {proud of himself$_i$}}

In both cases, the label of α is properly determined as A.

6.4. The Internal Structure of SCD

In this subsection, we analyze the internal structure of SCD. Let us see (41).

(41) John considers [$_{SC}$ [$_{DP}$ Bill] [$_{DP}$ Bob's friend]]. (Williams (1984: 297))

What (41) shows is that Spec-D in predicative DP is already filled by *Bob* as in [$_{DP}$ Bob [$_{D'}$'s [$_{NP}$ friend]]]. Therefore, as Williams (1984) argues, subjects of SCD, unlike those of SCA, cannot be merged within their predicates. A question then arises as to where subjects of SCD originate.

Before answering the question above, let us consider (42).

(42) a. John is my best friend.

b. My best friend is John.

According to Moro (1997), the sentence in (42b) is referred to as the inverse copular sentence. On the basis of Narita's (2015) analysis of the relevant constructions, (42b) is briefly derived as follows:

(43) {my best friend {is {John, ~~my best friend~~}}} (cf. Narita (2015: 289))

What is crucial for Narita's (2015) analysis is that the complement of copular verbs consists of a symmetrical set involving two DPs and one of them undergoes IM to a sentence initial position.

Now, observe the following examples from Moro (1995).

(44) a. I consider [$_{SC}$ John as my best friend]. (Moro (1995: 119))

b. *I consider [$_{SC}$ my best friend as John]. (*ibid.*)

Intriguingly, as (44b) represents, DP predicates cannot be inverted within SCD (cf. Heycock (1995), den Dikken (2006)). Furthermore, the ungrammaticality of (44b) is indifferent to the realization of *as* in SCD as (45b) suggests.

(45) a. I consider [$_{SC}$ John the culprit]. (Heycock (1995: 227))

b. *I consider [$_{SC}$ the culprit John]. (*ibid*.)

If we assume that subjects and predicates in SCD form a symmetrical set like {[$_{DP}$ subject], [$_{DP}$ predicate]} as (43) does, we wrongly expect that (44b) and (45b) are, in principle, derivable contrary to the facts. These observations then tell us that the internal structure of SCD may be different from (43).

The amalgam <R, <v*, <T, C>>> involves the verb property due to the presence of R and v*, suggesting that it has a predicative property as well. With the discussions so far in mind, we propose that the amalgam <R, <v*, <T, C>>> can select not only AP or DP predicates as its complement but also DP subject as its external argument. In short, we propose that the amalgam <R, <v*, <T, C>>> has a unique selectional property: it may but need not take DP subjects as its external argument. Based on this proposal, the derivation of (7a), repeated here as (46a), is as follows:

(46) a. I consider them each other's friend. (=(7a))

b. {$_{\beta}$ them {$_{\alpha}$ <R, <v*, <T, C>>> {each other's friend}}}

c. {$_{\zeta}$ I {$_{\varepsilon}$ v* {$_{\delta}$ them {$_{\gamma}$ R {$_{\beta}$ ~~them~~ {$_{\alpha}$ <R, <v*, <T, C>>> {$_{D}$ each other's friend}}}}}}} (α=β=<R, <v*, <T, C>>>, γ=R, δ=<phi, phi>)

d. {$_{\iota}$ C {$_{\theta}$ I {$_{\eta}$ T {$_{\zeta}$ ~~I~~ {$_{\varepsilon}$ R-v* {$_{<phi, phi>}$ them {$_{R}$ ~~R~~ {$_{<R, <v*, <T, C>>>}$ ~~them~~ {$_{<R, <v*, <T, C>>>}$ <R, <v*, <T, C>>> {each other's friend}}}}}}}}}} (ε=ζ=R-v*, η=T, θ=<phi, phi>, ι=C)

First, the amalgam <R, <v*, <T, C>>> and *each other's friend* form a set and *them* is subsequently merged with this set, resulting in (46b). R is then merged with β and *them* undergoes IM with γ. v* and the subject *I* are introduced in the derivation in order. At this point, MS is applied to the sets and the labels are identified as follows: α=β=<R, <v*, <T, C>>>, γ=R, δ=<phi, phi>. R is internally Pair-Merged with v* after the labeling (cf. Chomsky (2015)). (46d) represents the CP phase level operations. T is merged with ζ, the subject *I* undergoes IM with η, and C is introduced into the derivation. MS occurs at this point and the labels are determined as in ε=ζ=R-v*, η=T, θ=<phi, phi>, ι=C.

Recall that a reciprocal in DP predicates can be bound by a matrix subject when the relevant predicates are fronted to a sentence-initial position as (47) represents.

(47) [How good a friend of each other('s)$_i$]$_j$ do they$_i$ consider [$_{SC}$ John t_j]?
(Contreras (1995: 137))

We propose that subjects of SCD originate as the external argument of the amalgam <R, <v*, <T, C>>>, which permits DP predicates alone to undergo IM without a violation of *{*t*, *t*} in contrast to that of AP predicates in SCA. Consider the rough derivation of (48).

(48) {{$_D$ how good a friend of each other('s)$_i$} … they$_i$ … {$_{R\text{-}v^*}$ ~~{$_D$ how good a friend of each other('s)$_i$}~~ {$_{R\text{-}v^*}$ … John … {$_{<R,\ <v^*,\ <T,\ C>>>}$ ~~John~~ {$_{<R,\ <v^*,\ <T,\ C>>>}$ <R, <v*, <T, C>>> ~~{$_D$ how good a friend of each other('s)$_i$}~~}}}}}

As (48) shows, the DP predicate does not include a copy of its subjects. Therefore, the DP predicate itself can be internally merged, allowing a reciprocal to be bound by the matrix subject since the copy of the relevant predicate is left at the edge of matrix v*P.

We have argued that the contrast between (8a) and (8b) is reducible to two types of internal structures of SCs: SCA and SCD. Our proposal is superior to Contreras (1995) in that we do not rely on an arbitrary functional head F and the derivation of SCD is proposed independently of an analogy of the Double Object Construction.

7. Mad Magazine Sentence

Akmajian (1984) notes that the Mad Magazine Sentence (hereafter, MMS) has an exclamatory function. Furthermore, these expressions are highly frequent and natural in an informal speech. A typical example of it is represented in (49).

(49) a. What, me worry? (Akmajian (1984: 2))
b. Him wear a tuxedo?! (Sure.) (*ibid.*)

MMS resembles SCs: (i) modal auxiliaries do not appear (=(50a, b)), (ii) sentential adverbs are never licensed (=(50c, d)), and (iii) subjects with Accusative Case are realized (=(50e, f)).

(50) a. *Her will/might call me up?! (Akmajian (1984: 3))
b. *I consider [$_{SC}$ your attitude can deeply offensive].
(Radford (1988a: 327, slightly revised))
c. What! *Her unfortunately lose her job! (Akmajian (1984: 3))

d. ?*John considers [$_{SC}$ Mary probably scared of snakes] – certainly she is scared of snakes. (Nakajima (1991: 40))

e. What! Her/*She call me up?! Never!
(Akmajian (1984: 3, slightly revised))

f. I consider [$_{SC}$ him/*he unsuitable for the job]. (Radford (1988b: 9))

MMS contains verb phrases, unlike SCs. However, inflection never appears on verbs as (51) illustrates.

(51) *Him gets a job?! (Akmajian (1984: 3))

From observations made in (50) and (51), we assume that T is not overtly realized and there is no phi-feature agreement in MMS. Note that this assumption does not mean that MMS excludes the possibility that there is T in MMS. It just says that T does not have overt morphology.

Based on Akmajian's (1984) claim that MMS has an exclamatory force, we posit that it involves C, which indicates an exclamatory force. In relation to this, it is worth noting here that focal stress is always placed on the subjects of MMS. (52) illustrates this point, where capital letters represent focus.

(52) HIM/*'im get a job!? (Akmajian (1984: 8, slightly revised))

We assume from (52) that C involved in MMS has a focus-feature except phi-features. In general, C represents the Force of sentences, for instance, declarative, interrogative, exclamative, and so on. Each C consists of different featural specifications. Therefore, assuming that C involved in MMS has a focus-feature but not phi-features is not *ad hoc* but based on facts listed above. To recap, our proposal is as follows:

(53) a. In MMS, T is externally Pair-Merged with C as <C, T>. We assume that this C does not have phi-features.

b. T is invisible to narrow syntax due to it being Pair-Merged with C. We assume that the invisibility of T in narrow syntax prohibits sentential adverbs and modal auxiliary from appearing in MMS.

c. Subjects and <C, T> are agreed via focus-feature in most cases, and the set {$_{\alpha}$ subjects, <C, T>} is labeled as <Foc, Foc>. That is, there is focus-feature sharing in MMS.

Let us consider the rough derivation of (49b).

(54) $\{_{<Foc, Foc>}$ him $\{_{<C, T>}$ <C, T> $\{_{R\text{-}v^*}$ ~~him~~ wear a tuxedo$\}\}\}$

After v*P is completed, the amalgam <C, T> is merged. A subject then undergoes IM with the amalgam <C, T>. There, the subject and the amalgam <C, T> are agreed through a focus-feature, which provides the label <Foc, Foc>. Note that subjects of MMS are always realized with Accusative Case. This may be attributed to a Default Case assignment. Recall that we postulate that there is no phi-feature agreement in MMS. As is generally acknowledged in the Minimalist Program, Case assignment takes place as a reflex of phi-feature agreement (Chomsky (2000 *et seq*)). If so, Case assignment does not occur in MMS due to the absence of phi-feature agreement. Schütze (1997, 2001) argues that if Case is not structurally assigned to DP, Default Case will be assigned to it. In English, Accusative Case is considered as Default Case (Schütze (1997, 2001), *inter alia*). To summarize these points so far, we propose that the lack of phi-feature agreement in MMS forces subjects to receive Default Accusative Case, suggesting further that the lack of inflection on verbs is reducible to this assumption.

Finally, let us see the contrast between (55a) and (55b).

(55) a. What! No one eat this wonderful cake?! Impossible.
(Akmajian (1984: 4, fn. 4))

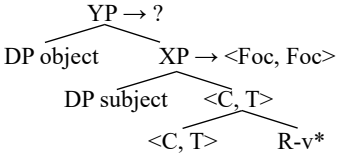
b. What! *This wonderful cake, no one eat?! (*ibid*.)

(55a) is a canonical example of MMS, whereas (55b) suggests that Topicalization of objects is generally inapplicable in MMS. Our proposal correctly accounts for the ungrammaticality of (55b). Consider the rough derivation of (55b).

(56) $\{_{\beta}$ this wonderful cake $\{_{<Foc, Foc>}$ no one $\{_{<C, T>}$ <C, T> $\{_{R\text{-}v^*}$ no one eat this wonderful cake$\}\}\}\}$

As (56) shows, Topicalization of objects yields a multiple Spec construction. For expository purposes only, let us see the tree diagram in (57).

(57)



XP is labeled as <Foc, Foc> through focus-feature sharing. However, since only the subject agrees with <C, T>, there is no feature sharing between the topicalized object and <C, T>, resulting in an unlabeled structure which violates Full Interpretation. Thus, our proposal correctly predicts (55b) to be illicit.

It is worthwhile to note here that as Akmajian (1984) points out, Topicalization of objects is indeed possible as in (58b) insofar as there is no overt subject.

(58) a. What! *That trash novel, us read by tomorrow?! (Akmajian (1984: 10))

b. What! That trash novel, read by tomorrow?! (*ibid.*)

Our proposal can accommodate this fact in terms of a syntactic perspective. Suppose that the subject is not merged in narrow syntax in (58b). If so, the derivation would be as follows:

(59) {$_{\gamma}$ that trash novel {$_{<C,\ T>}$ <C, T> {$_{R\text{-}v^*}$ read ~~that trash novel~~ by tomorrow}}}

In this case, the problem noted in (57) does not arise since subjects never appear, which enables C to agree with the topicalized object via topic-feature in (59). Due to this agreement, the label of γ is identified as <Top, Top>. Therefore, (58b) would be grammatical in contrast to (55b) and (58a).

8. Conclusion

This paper proposed that the internal structures of SCs are divided into two types – SCA and SCD – based on the binding phenomenon. Furthermore, we presented a hypothesis that the amalgam <R, <v*, <T, C>>> is mediated in both types of SCs. Two peculiar properties of SCs, selection and clausehood, follow from the presence of this amalgam. Finally, we extended our analysis and provided a proposal for the Mad Magazine Sentence in terms of the recent Minimalist Program.

Notes

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[1] In SCs, there are sometimes other elements between subjects and predicates as in the following example.

(i) Imogen considers [$_{SC}$ Brian (as) a nice guy]. (den Dikken (2006: 34))

We will discuss this matter in detail in Section 6.2.

[2] In the following examples, we sometimes use indices (for instance, i, j, and so on) and traces for expository purposes only.

[3] It is generally acknowledged that anaphors (reflexives and reciprocals) must be locally c-commanded by their suitable antecedents. This is called Condition A. What counts most in Condition A is that if two potential antecedents exist in a single sentence as in (i), the closer of the two antecedents (the underlined antecedent in (i)) is chosen as the appropriate antecedent. In other words, the system relates the anaphor to the first DP available within the local domain. To recap, Condition A somehow has a minimality effect.

(i) {… antecedent$_1$ … {… <u>antecedent$_2$</u> … anaphor}}

We do not discuss the exact formulation of this minimality fact, which is not germane here.

[4] Chomsky (1993) argues that Condition A is an interpretive rule and applies at LF, where copies left by movement can participate in a calculation of binding. However, in the current Minimalist Program, LF is completely abandoned. This paper then assumes that copies can be bound at the Conceptual-intentional interface instead of at LF. The bulk of it is the same as Chomsky's (1993) theory of Condition A. We leave the concrete analysis of Condition A for future research.

[5] Since Chomsky (2000), it has been generally acknowledged that A'-movement proceeds through v*P and CP phase edges. This is endorsed by the Phase Impenetrability Condition.

(i) Phase Impenetrability Condition
In phase α with head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations. (Chomsky (2000: 108))

In (6), however, we omit a copy of the A'-moved element at the v*P edge since it does not matter to our main discussion. Note that in the following discussion, we will represent derivations in the same manner as long as it does not raise a problem.

[6] Here, we use v*P instead of VP in light of the Minimalist Program.

[7] Note that the idea that external Pair-Merge can be applied to C and T was first introduced by Sugimoto (2016).

[8] In addition to *as*, the amalgam <R, <v*, <T, C>>> can be lexicalized as *like* or *for*.

(i) a. Imogen treats Brian like a fool. (den Dikken (2006: 35))

b. Imogen takes Brian for a fool. (*ibid*.)

This suggests that matrix verbs can also select how they realize the amalgam <R, <v*, <T, C>>>.

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