Eliminating Pair-Merge

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1. Introduction

Two primitive structure-building operations have been proposed by Chomsky (2000, 2004) to capture argument-adjunct asymmetries: *Set-Merge* and *Pair-Merge*. They roughly correspond to *Substitution* and *Adjunction*, respectively, in Government and Binding theory (May 1985; Chomsky 1986) and early Minimalist Program (Chomsky 1995). To be more concrete, taking two Syntactic Objects (SOs), Set-Merge generates simple unordered sets, while Pair-Merge yields ordered pairs, as shown in (1).[1]

(1) *Two primitive operations*:
 a. Set-Merge (α, β) = {α, β} *arguments*
 b. Pair-Merge (α, β) = <α, β> *adjuncts*

In this paper, we will argue that Pair-Merge should be eliminated from syntax in favor of the so-called simplest Merge conception (Collins 2002; Epstein, Kitahara, & Seely (EKS) 2012; Chomsky 2013), which states that all Merge can do is combine two SOs into unordered sets and nothing more; namely, Merge (α, β) = {α, β}.[2] There are both theoretical and empirical arguments for the elimination of Pair-Merge. Theoretically speaking, the raison d'être of Pair-Merge is ad hoc in that it has been introduced into linguistic theory only to account for peculiar behaviors of adjunction, which is reminiscent of construction-specific transformations in early Transformational Grammar (Chomsky 1957). In addition, Pair-Merged adjuncts are just metaphorically stipulated to be on a "separate plane" (Chomsky 2004) to derive the invisibility of adjuncts to syntax. From the empirical point of view, Chomsky's (2008) Pair-Merge approach to the *Adjunct Condition* is too restrictive, meaning that some adjuncts are transparent for extraction. Furthermore, Chomsky's (2004) Pair-Merge approach to *Condition C Anti-Reconstruction* is too loose; some adjuncts are obligatorily reconstructed with respect to Condition C. Putting these arguments together, it is reasonable to dispense with Pair-Merge and seek another explanation in a theoretically and empirically desirable way.

Given these problems of Pair-Merge, the new proposal will be implemented by extending EKS's (2012) analysis of subjects to the domain of adjunction. Specifically, I propose that adjunction inevitably generates "two-peaked" structures, in which a sister of adjuncts is multiply dominated by two separate mothers, and argue that adjuncts appear to be on a "separate plane" due to this characteristic phrase structure configuration. For minimalist purposes, "two-peaked" structures are not generated via special operations such as *Re-Merge* (Johnson 2012) or *Parallel-Merge* (Citko 2005). Rather, they are

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[1]See Rudin (2003), Irurtzun & Gallego (2007), and Richards (2009) for useful reviews and various developments of Pair-Merge.

[2] Kayne (2011) proposes *Generalized Pair-Merge* which also generates ordered pairs <α, β> but encodes asymmetry of linear order 'α precedes β', not of phrase structure as in Chomsky (2004). The purpose here is to reanalyze Chomsky's (2004) Pair-Merge, not Kayne's (2011) version. Therefore, I remain open as to whether Pair-Merge in Kayne's sense is necessary or not.

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naturally derived from the defining symmetric geometry of adjunction, i.e. {XP, YP}, in concert with the principles of labeling (Chomsky 2013). In other words, our proposal is a theorem deduced from minimal basic axioms of syntactic structure-building.

The organization of this paper is as follows. Section 2 points out the theoretical and empirical problems of Pair-Merge. Section 3 makes a new proposal and accounts for invisible adjuncts with emphasis on the Adjunct Condition and Condition C Anti-Reconstruction. Section 4 expands the proposal and correctly predicts the transparency of certain adjuncts for extraction and obligatory reconstruction with respect to Condition C. Section 5 shows that the further predictions of the proposal are actually borne out. Section 6 is a conclusion of this paper.

2. Problems of Pair-Merge

2.1. Theoretical Problems of Pair-Merge

Chomsky (2004) most clearly states the motivation for two distinct modes of Merge. Set-Merge, on one hand, is the symmetric operation which generates simple unordered sets {α, β} on which c-command can be defined. He defines Set-Merge as in (2).

(2) *Set-Merge* (Chomsky 2004: 117):
"For structure building, we have so far assumed only the free symmetrical operation Merge, yielding syntactic objects that are sets, all binary: call them *simple*. The relations that come "free" (contain, c-command, etc.) are defined on simple structures."

Pair-Merge, on the other hand, is the asymmetric operation which creates ordered pairs <α, β> on which c-command cannot be defined. Borrowing Chomsky's words, Pair-Merge is characterized as in (3).

(3) *Pair-Merge* (Chomsky 2004: 117-118):
"But it is an empirical fact that there is also an asymmetric operation of adjunction, which takes two objects β and α and forms the ordered pair <α, β>, α adjoined to β."

Chomsky then presents the insight that Set-Merged objects are on the "primary plane", whereas Pair-Merged ones are on a "separate plane", which metaphorically captures the invisibility of adjuncts to the core phrase structural spine. This is summarized in the following passage (4).

(4) *Primary plane vs. Separate plane* (Chomsky 2004: 117-118):
"Given the basic properties of adjunction, we might intuitively think of α as attached to β on a separate plane, with β retaining all its properties on the "primary plane," the simple structure."

Chomsky's idea is intriguing, but subject to at least two minimalist critiques. First, Pair-Merge seems to be ad hoc in that it is construction-specific. Although there are lots of different types of adjuncts, it exists exclusively for adjunction. Recall that construction-specific transformations in the transformational generative syntax were eliminated partly because they are too descriptive. The same fate should be waiting for Pair-Merge. Second, the "separate plane" stipulation is not explanatory; adjuncts are invisible to syntax because they are introduced via Pair-Merge and put on a "separate plane". This is just a metaphorical restatement of the facts. Moreover, notice that, according to Chomsky's (2004) quote above (3), Pair-Merge is motivated by "an empirical fact". This strongly implies that if the empirical coverage of Pair-Merge can be explained in another way or Pair-Merge makes empirically wrong predictions, theoretical underpinnings of this special operation will be lost. It will be shown below that this is actually the case.

2.2. Empirical Problems of Pair-Merge

2.2.1. Adjunct Condition

The well-established generalization since Huang (1982) is that adjuncts are opaque to extraction: *Adjunct Condition*. This is exemplified in (5).

(5) *Adjunct Condition*:

a. *Who did Mary cry [$_{\text{ADJ}}$ after John hit <who>]?
(Huang 1982: 503)

b. *Which paper did you read Don Quixote [$_{\text{ADJ}}$ before filing <which paper>]?
(Nunes & Uriagereka 2000: 21)

c. *Who did an advocate speak to Betsy [$_{\text{ADJ}}$ before a discussion of <who>]?
(Johnson 2003: 188)

Chomsky (2008) offers the Pair-Merge approach to the Adjunct Condition, whose idea is that adjuncts are Pair-Merged on a "separate plane", hence invisible to probes for extraction. See the passage below.

(6) *Pair-Merge approach to Adjunct Condition* (Chomsky 2008: 146-147):
"The adjunct-island subcase follows if an adjunct is not in the search domain of the probe. That in turn follows from the approach to adjuncts in Chomsky 2004, taking them to be entered into the derivation by pair-Merge instead of set-Merge to capture the fundamental asymmetry of adjunction"

However, the recent literature has observed that certain classes of adjuncts are transparent for extraction. The crucial data are presented in (7).[3]

(7) *No Adjunct Condition*:

a. What did John arrive [$_{\text{ADJ}}$ whistling <what>]?
(Borgonovo & Neeleman 2000: 200)

b. What did John drive Mary crazy [$_{\text{ADJ}}$ trying to fix <what>]?
(Trueswell 2007: 1356)

c.

Kinél	szívott [$_{\text{ADJ}}$	nagyobbat <kinél>]?
who-to	smoke-Past	large-Cpl-Acc

'He smoked more than who?'
(Den Dikken 2012: 10)

d.

Yamada-sensei-ga	shinsatsu-shita-yori(-mo)	Tanaka-sensei-ga	kanja-o
Dr.Yamada-Nom	examination-did-than(-also)	Dr.Tanaka-Nom	patient-Acc

[$_{\text{ADJ}}$ <Yamada-sensei-ga	shinsatsu-shita-yori(-mo)>	oozei]	shinsatsu-shita.
		many	examination-did

'Dr.Tanaka examined more patients than Dr.Yamada examined.'
(Miyamoto 2012: 344)

In the examples (7a-b), the *wh*-phrase *what* is extracted out of the adjuncts that are depictive secondary predicates. The Hungarian example (7c) demonstrates that the *wh*-phrase *kinél* 'who' can move from within the comparative adjunct. In Japanese (7d), it is also possible to scramble CP out of the nominal adjunct. Since those transparent adjuncts count as an adjunct due to their optionality, they are introduced via Pair-Merge under Chomsky's (2008) proposal. This in turn predicts that extraction should be blocked from them, which is empirically not correct. Therefore, the Pair-Merge approach to the Adjunct Condition is defective in that it is too restrictive.

2.2.2. Condition C Anti-Reconstruction

Lebeaux (2000) discovered that fronted adjuncts do not induce Condition C violations: *Condition C Anti-Reconstruction*. His classic examples are replicated below in (8).

(8) *Condition C Anti-Reconstruction with wh-movement* (Lebeaux 2000: 103):

a. *He$_i$ believes the claim that John$_i$ is nice.

b. *He$_i$ likes the story [$_{\text{ADJ}}$ that John$_i$ wrote].

c. *Whose claim that John$_i$ is nice did he$_i$ believe?

d. √Which story [$_{\text{ADJ}}$ that John$_i$ wrote] did he$_i$ like?

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[3]The examples (7a-b) seem to be weak islands because they do not allow extraction of *wh*-adjuncts (e.g. *why*).

In addition to *wh*-movement, Speas (1991) noted that the same pattern is found with topicalization, as shown in (9).

(9) *Condition C Anti-Reconstruction with topicalization* (Speas 1991: 250):
  a. √[$_{ADJ}$ In Ben$_i$'s office], he$_i$ is an absolute director.
  b. √[$_{ADJ}$ With John$_i$'s novel finished], he$_i$ began to write a book of poetry.
  c. √[$_{ADJ}$ To Ben$_i$'s surprise], he$_i$ noticed that the others had left.
  d. √[$_{ADJ}$ For Mary$_i$'s valor], I heard she$_i$ was given a medal.

Chomsky (2004) puts forth the idea that adjuncts are Pair-Merged on a "separate plane", hence invisible to c-command by pronouns. The Pair-Merge approach to Condition C Anti-Reconstruction is summed in (10).

(10) *Pair-Merge approach to Condition C Anti-Reconstruction* (Chomsky 2004: 118):
"What about Condition (C) at SEM? When X c-commands <α, β>, does it also c-command α and β? β was introduced by set Merge, and before α was adjoined to it, X c-commanded β … But extension of c-command to the adjoined element α would be a new operation, to be avoided unless empirically motivated."

Chomsky further maintains that Pair-Merge approach to Condition C Anti-Reconstruction wrongly predicts that the example (8b) is grammatical if adjuncts are on a "separate plane" forever. Thus, he proposes a new operation, *Simplification* (SIMPL), which converts ordered pairs <α, β> to simple unordered sets {α, β} at Spell-Out. That is, SIMPL should apply at Spell-Out to make in-situ adjuncts visible, as described in (11).

(11) *Simplification* (Chomsky 2004: 118):
"We know that at stage where <α, β> is spelled out, it also becomes a simple structure at SEM … Therefore, there is an operation SIMPL that converts <α, β> to {α, β}"

But now consider adjuncts which are obligatorily reconstructed with respect to Condition C. They are (12) observed by Speas (1991).

(12) *Condition C Reconstruction* (Speas 1991: 250):
  a. *[$_{ADJ}$ In Ben$_i$'s office], he$_i$ lay on his desk.
  b. *[$_{ADJ}$ With John$_i$'s computer], he$_i$ began to write a book.
  c. *[$_{ADJ}$ To Ben$_i$'s office], he$_i$ takes the bus.
  d. *[$_{ADJ}$ For Mary$_i$'s brother], I heard she$_i$ was given some clothes.

The examples (12a-d) constitute minimal pairs with (9a-d), where the former and the latter share the same adjuncts, while Condition C Reconstruction is obligatory only in (12). Important here is that if Pair-Merge (+SIMPL) approach to Condition C Anti-Reconstruction proposed by Chomsky (2004) was right, Condition C would never be violated in (12), because Pair-Merged adjuncts become visible only at Spell-Out, i.e. fronted positions. Thus, the Pair-Merge approach to Condition C Anti-Reconstruction is too loose in that it rules in ungrammatical sentences.

2.3. Interim Summary

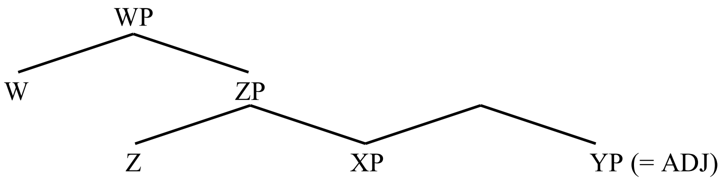
To sum up, we have shown that Pair-Merge does not work both theoretically and empirically. On the one hand, Pair-Merge is theoretically undesirable in the spirit of minimalism because of its construction-specific and stipulative nature. On the other hand, Pair-Merge is empirically challenged by the transparency of certain adjuncts for extraction and obligatory Condition C Reconstruction. In the remainder of this paper, I make a new proposal without introducing special structure-building operations and offer a new explanation for the Adjunct Condition and Condition C Anti-Reconstruction. To the extent that this proposal is successful, Pair-Merge should be eliminated from syntax.

3. Invisible Adjuncts = {XP, YP}

3.1. Proposal

Given the theoretical and empirical problems of Pair-Merge, we alternatively make a new proposal for the structure-building of adjuncts within the framework of *Bare Phrase Structure* (Chomsky 1994). Specifically, we propose the "two-peaked" structure (Epstein, Kitahara, & Seely 2012) for the phrase structure representation of adjuncts, as shown in (13).[4]

(13) *"Two-peaked" structure*:

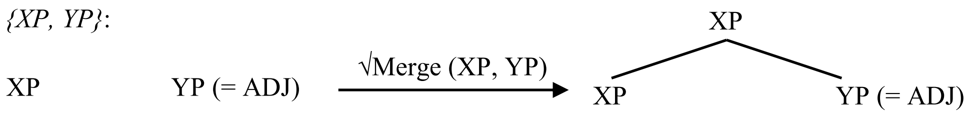


Crucially from a minimalist perspective, this proposed "two-peaked" structure is not a stipulation, but rather a theorem naturally deduced from the following three assumptions in (14).

(14) *Three axioms of phrase structure*:
  a. *{XP, YP}*: The defining geometry of adjunction is Merge (XP, YP).
   (May 1985; Chomsky 1986; Kayne 1994; Narita 2011; Ott 2011)
  b. *Labeling Algorithm*: Outputs of Merge are labeled algorithmically.
   (Chomsky 2007, 2008, 2013)
  c. *Label Accessibility Condition*: Unlabeled SOs are inaccessible to Merge.[5]
   (Chomsky 2000; Collins 2002; Hornstein 2009)

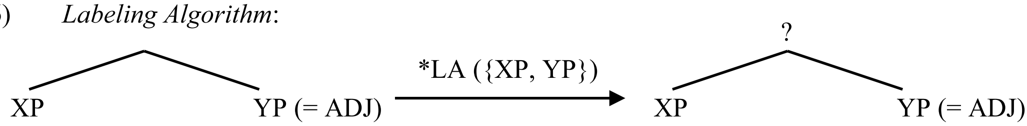
The logic of deduction consists of three steps. First, adjunction has been assumed to be Merge of two phrases, i.e. {XP, YP}, since the Government and Binding era.[6] It adjoins an adjunct YP onto a *Category* XP to create a *Segment* of XP (May 1985; Chomsky 1986). This is schematized in (15).

(15) *{XP, YP}*:



Second, given that the Category-Segment distinction is undefined within Bare Phrase Structure (Chomsky 1994; Kayne 1994) and projection is eliminated due to its theory-internal nature (Chomsky 2013), labels of phrase structure are assigned independent of structure-building by Merge. In this respect, Chomsky (2013) explicitly proposes that labels are determined via a *Labeling Algorithm* (LA). For example, when a head Merges with a phrase {X, YP}, LA unambiguously selects the closest head, i.e. {X}, as a label of the entire SO. However, in Merge of two phrases {XP, YP} or two heads {X, Y}, LA is ambiguous, so that the resultant SO remains unlabeled. Since adjunction is one instance of symmetric {XP, YP} structures, therefore, the structure resulting from adjunction has no label, as shown in (16).

(16) *Labeling Algorithm*:



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[4]This proposed structure may make wrong predictions about binding into adjuncts and optionality of adjuncts with VP-fronting/ellipsis. I leave these problems for future research.

[5]LAC means that labels of phrase structure are necessary in syntax for the derivation to continue, which has a similar effect to *Edge Feature* in Chomsky (2008). However, see Chomsky (2013) for the opposite view that labels are necessary only at the interfaces.

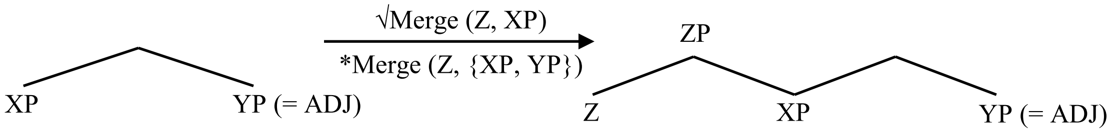
[6]I put aside head-adjunction structures {X, Y} (Marantz 1997; Embick & Marantz 2008) for future study.

Third, we assume the *Label Accessibility Condition* (LAC), which states that unlabeled SOs cannot be accessed by Merge. One particular version of the LAC formulated by Hornstein (2009) is adopted (17).

(17) *Hornstein's (2009) Label Accessibility Condition*:
Only the label of a syntactic object is accessible to Merge.

Interestingly, since adjunction structures remain unlabeled as discussed above, they cannot be an input of Merge. Consequently, the next application of Merge with Z must inevitably target one of two daughters of the unlabeled SO. This final step of deduction is illustrated in (18).

(18) *Label Accessibility Condition*:

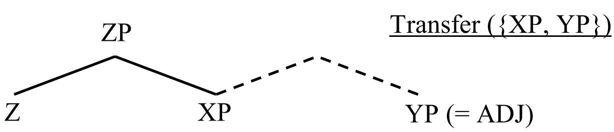


Note here that Merge (Z, XP) is labeled because LA can find Z as the closest head for the label of the entire SO. In this way, the "two-peaked" structure results from minimal basic assumptions of syntactic structure-building. Additionally, this is a non-stipulative way to explain Chomsky's (2004) insight that adjuncts are on a "separate plane". In the remainder of this section, we show that this proposal successfully explains the Adjunct Condition and Condition C Anti-Reconstruction.

3.2. Deriving Adjunct Condition

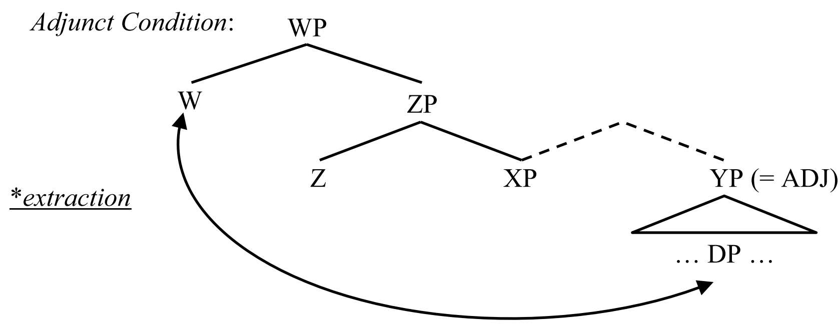
Now we extend Epstein, Kitahara, & Seely's (2012) analysis of the Subject Condition to the Adjunct Condition. EKS proposes that once "two-peaked" structures are generated, one of two peaks has to undergo Transfer for the derivation to continue and converge semantically.[7] Their proposal is schematized in (19).

(19) *Transfer*:



Simplifying somewhat, EKS argues that subject raising to [Spec, TP] generates the "two-peaked" structure due to its counter-cyclicity, one peak including the subject must undergo Transfer, and thus the subject become opaque for extraction. Here we argue that the same logic applies to adjuncts. Specifically, the Adjunct Condition follows because adjuncts must undergo Transfer before the landing site of extraction is introduced.[8] This is summarized in (20).

(20) *Adjunct Condition*:



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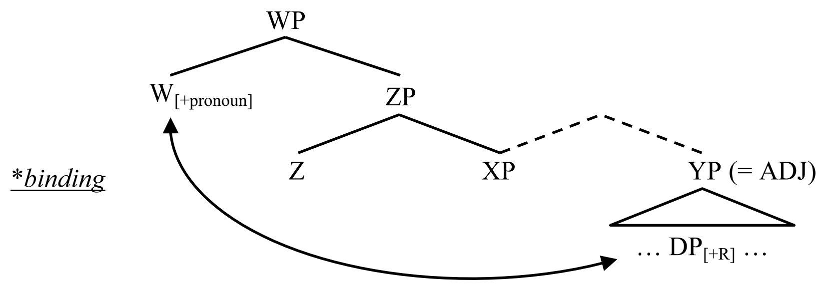
[7]I assume here that unlabeled SOs pose no problems at the semantic interface (contra Chomsky 2013). In fact, Hornstein & Pietroski (2009) proposes that labeled and unlabeled SOs are interpreted as an argument and a modifier, respectively.

[8]Suppose that XP is *v*P and YP is an adjunct PP. The question is whether, when {*v*P, PP} undergoes Transfer, *v*P becomes opaque for extraction. Empirically, it should not; otherwise, the complement of VP never moves out. Therefore, we stipulate that *v*P remains in syntax as a member of {Z, *v*P}. I leave this for future investigation.

3.3. Deriving Condition C Anti-Reconstruction

Condition C Anti-Reconstruction also follows because R-expressions inside adjuncts go through Transfer before introducing pronouns which would induce a Condition C violation. In other words, since adjuncts must undergo Transfer as soon as they are introduced into the derivation, it is too late for pronouns to bind R-expressions inside the adjuncts. The relevant structure is shown in (21) for clarity.

(21) *Condition C Anti-Reconstruction*:



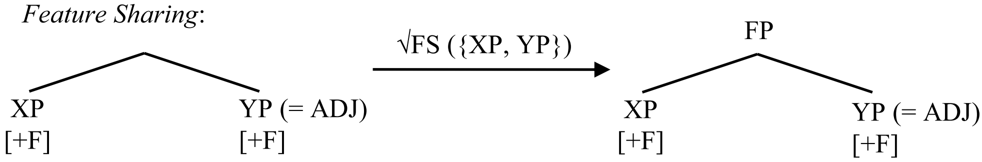
There are no derivational points where pronouns bind R-expressions. Condition C reconstruction is derived. As for the visibility of in-situ adjuncts (8b) which Chomsky (2004) captured with SIMPL, we simply assume following Obata (2010) that the chunks sent to interfaces via Transfer are "re-assembled" into one representation for global semantic computations like Condition C. This line of inquiry remains to be worked out.

4. Visible Adjuncts = {XP, YP} + Feature Sharing

In the previous section, it has been shown that the new theoretically-desirable alternative explains the empirical coverage which Pair-Merge has dealt with. But this is not the end of the story. In this section, I hope to convincingly argue that this proposal is superior to Pair-Merge not only theoretically but also empirically, meaning that the exceptional data to Pair-Merge is actually not exceptional, but rather predictable.

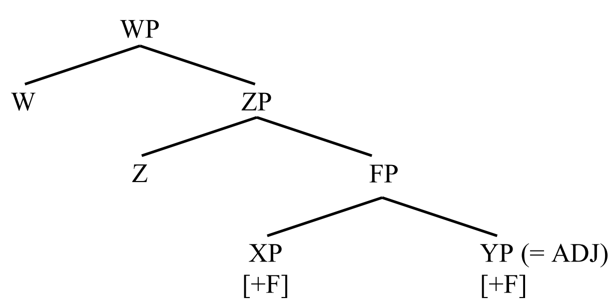
As a necessary background for the following discussions, Chomsky (2013) maintains that it is possible even for symmetric {XP, YP} structures to be labeled in some specific syntactic processes. One of them is *Feature Sharing* (FS), which labels {XP, YP} as FP if XP and YP share the same prominent feature [+F]. This is shown in (22).

(22) *Feature Sharing*:



As a result, if XP and the adjunct YP share some feature [+F] and the adjunction structure {XP, YP} is labeled, the next application of Merge with Z can target FP because there are no reasons for LAC to force "two-peaked" structures. Therefore, the adjunction structure {XP, YP} with FS results in a "one-peaked" structure, as in (23).

(23) *"One-peaked" structure*:



Metaphorically speaking, FS moves adjuncts from a "separate plane" onto the "primary plane". The intriguing prediction here is that adjuncts with FS are transparent for extraction and exhibit Condition C Reconstruction. We show below that this is actually the case.

Remember that some well-defined set of adjuncts are transparent for extraction (7) and obligatorily reconstruct with respect to Condition C (12). What are they exactly? Importantly for the purpose here, the literature on those visible adjuncts converges into the following generalization.

(24) *Descriptive generalization*:
Adjuncts entering Agree are visible to extraction and binding.

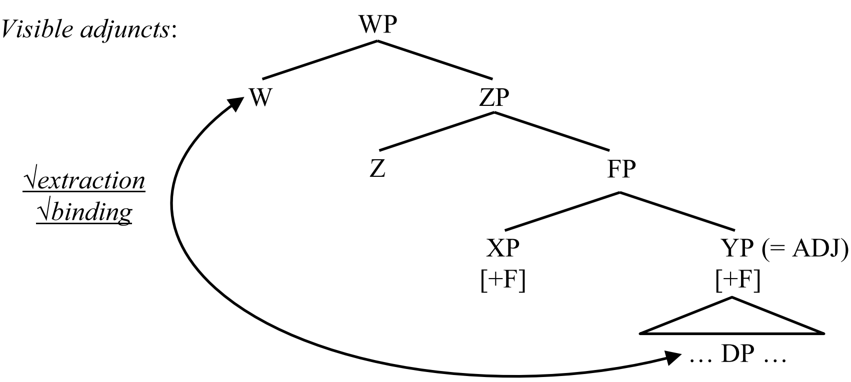
More concretely, works on transparent adjuncts such as den Dikken (2012) and Miyamoto (2012) independently reach the following conclusions.

(25) "the accusative-marked adverbial modifier is in an Agree relation with *v* and that this Agree relation makes the projection of the adverbial modifier transparent"
(den Dikken 2012: 11)

"what makes some object-oriented secondary predicates transparent for extraction is the fact that object-oriented FQs can enter into an Agree relationship with Asp via the NP they modify during the course of the derivation"
(Miyamoto 2012: 365)

Assuming that Agree implicates FS as proposed by Frampton & Gutmann (2000) and Pesetsky & Torrego (2007), the generalization makes sense perfectly. That is, Agree establishes FS, which in turn makes labeling of {XP, YP} possible. Consequently, the "one-peaked" structure is generated, and extraction and binding become permissible, as illustrated in (26).

(26) *Visible adjuncts*:



To recapitulate, the interaction between FS and labeling correctly predicts the visible adjuncts which Pair-Merge cannot explain. Given that our proposal is theoretically desirable in keeping to the simplest conception of Merge, this empirical success renders our alternative even more robust.

5. Further Predictions

The current proposal further makes the following bidirectional predictions about correlations between extraction and binding (27).

(27) *Correlations between extraction and binding*:
a. If an adjunct is opaque for extraction, it should also be invisible to binding.
b. If an adjunct is invisible to binding, it should also be opaque for extraction.
c. If an adjunct is transparent for extraction, it should also be visible to binding.
d. If an adjunct is visible to binding, it should also be transparent for extraction.

In light of these predictions, there seems to exist one counterexample: both *Relative Clauses* (RCs) and *Nominal Complement Clauses* (NCCs) are opaque for extraction (i.e. *Complex NP Constraint*), but they are different in visibility to binding.[9] For example, the NCC example (8c) does show Condition C Reconstruction, whereas the RC example (8d) does not.

However, this counterexample is only an apparent counterexample. In fact, Lasnik (1998) argues that Lebeaux's asymmetry in Condition C Reconstruction between NCCs and RCs is an illusion.[10] His argument is based on the following examples (28), which show that NCCs also do not violate Condition C if pragmatically well-controlled.

(28) *Condition C Anti-Reconstruction with NCCs*:
a. √Which piece of evidence [$_{NCC}$ that John$_i$ was guilty] did he$_i$ successfully refute <DP>?
b. √How many arguments [$_{NCC}$ that John$_i$'s theory was correct] did he$_i$ publish <DP>?
c. √Which proof [$_{NCC}$ that Mary$_i$'s theory is superior to John's] did she$_i$ present <DP>?
(Lasnik 1998: 87)

Moreover, Donati & Cecchetto (2011) points out that NCCs are actually adjuncts based on three syntactic diagnostics such as θ-Criterion exemption, constituency, and islandhood. Putting Lasnik's observation and Donati & Cecchetto's argument together, it is reasonable to think that NCCs are adjuncts. Thus, both NCCs and RCs are {XP, YP} and generate the "two-peaked" structure. This is why they show opacity for extraction and no Condition C Reconstruction. We conclude that Lebeaux's (2000) observation is just an apparent counterexample, so that our bidirectional predictions are borne out in this particular domain.

6. Conclusion

In this paper, we have argued that Pair-Merge should be eliminated from syntax in favor of the simplest conception of Merge (Collins 2002; Epstein, Kitahara, & Seely 2012; Chomsky 2013). Given the theoretical and empirical problems of Pair-Merge, the new proposal has been made based on the principles of labeling and "two-peaked" structure and then explained the Adjunct Condition and Condition C Anti-Reconstruction including the problematic data with Pair-Merge. Therefore, this "two-peaked" approach to adjunction is both theoretically and empirically superior to Pair-Merge.

This being said, there is one problem with our proposal; *wh*-adjuncts like *why* are predicted not to move, which is just wrong. In this respect, Stepanov (2001) proposes an ingenious solution in terms of feature interpretability, whereas Lasnik & Uriagereka (2005) puts forth the "Surfing" hypothesis that an adjunct with a *wh*-feature can freely move ("surf") across phase edges. The question of how they are connected with the idea here remains to be explored. Furthermore, there are several possible extensions of the current proposal such as Late-Merge (Fox & Nissenbaum 1999; Fox 2002) and symmetric {X, Y} structures (Marantz 1997; Embick & Marantz 2008).

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[9] I thank Richard Kayne (p.c.) for bringing my attention to Taraldsen (1981) and Chung & McCloskey (1983), which observe some interesting cases of transparent RCs. Whether they involve Agree or not is still up in the air.

[10] David Pesetsky (p.c.) points out that Lebeaux's asymmetry revives when relational nouns like *aspect* are employed to remove appositive interpretations and require genuine complements.

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