

Transfer and Self Pair-Merge*

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1 Introduction

It has been claimed that Transfer not only sends information to PF/LF but also makes transferred domains inaccessible to the syntactic computation. Chomsky (2000, 2008), among others, claims that the latter is accomplished by removing transferred domains, i.e., the complements of a phase head C/v , from a workspace (called the “cashing-out” approach to Transfer) as in (1):

$$(1) \quad [_{XP} YP [_{X'} X ZP]] \text{ —Transfer—} \rightarrow [_{XP} YP [_{X'} X]]$$

(where X is a phase head)

In (1), the transferred domain ZP is removed (“cashed-out”) from the workspace, and thus no longer accessible to the syntactic computation. This paper instead proposes the Self Pair-Merge approach to Transfer, which claims that transferred domains, though remaining in a workspace, are made invisible/inaccessible to the syntactic computation through Self Pair-Merge by sending transferred domains from a “primary plane” to an opaque “separate plane” (adjunct plane). We argue that evidence for our Self Pair-Merge approach comes from a hitherto unexplained parallelism with opaqueness between adjuncts and transferred domains. The theoretical advantage of our approach is that Transfer is subsumed under Merge, thereby conforming to the strong minimalist thesis (SMT) which requires us to posit as little as possible beyond Merge. Our approach is thus theoretically more desirable than the “cashing-out” approach, which assumes the operation “remove a transferred domain from a workspace,” an extra operation beyond Merge, and is thus against the SMT. Our Self-Pair Merge approach to Transfer reduces computational burden by sending a transferred domain to an opaque “separate plane” through Pair-Merge, rather than removing it from a workspace. The existence of Self Pair-Merge to transferred SOs gives further support for Chomsky’s (2013, 2014) Free Merge system.

The organization of this paper is as follows. Section 2 claims that there is a parallelism between adjuncts and transferred domains regarding opaqueness. It is shown that while adjuncts and transferred domains are opaque to Move/Agree, they

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are transparent to binding dependencies. Section 3 proposes a Self Pair-Merge approach to Transfer, arguing that Self Pair-Merge applies to the complement of a phase head at Transfer. It is shown that our Self Pair-merge approach can explain the parallelism between adjuncts and transferred domains regarding opaqueness. Section 4 makes a concluding remark.

2 A Parallelism between adjuncts and transferred domains

2.1 Adjuncts

It is well known that adjuncts are opaque to Move, i.e., Internal Merge (IM) and Agree, as exemplified by (2) and (3):

- (2) ***Who** did John get jealous [*Adjunct* before I talked to *t*]
- (3) * [*Adjunct* kid y-āy-zahl] eni-r xabar
 girl.II.ABS II-arrive-WHEN mother-DAT news.III.ABS
 y-iy-s
 II-know-PST.EVID
 ‘When the girl arrived, the mother found the news.’
 (Polinsky & Potsdam 2001: 607)

In (2), *who* undergoes Move out of the adjunct. In (3), *kid* ‘girl’ within the adjunct undergoes Agree with the matrix verb *y-iy-s* ‘know’. Both (2) and (3) are deviant.

It has also been pointed out, however, that adjuncts are not opaque to all syntactic dependencies. Unlike Move and Agree, binding dependencies like (4)–(7) are accessible into adjuncts:

- (4) *Principle C of the Binding Theory*
 ***She**_{*i*} will call [*Adjunct* before **Mary**_{*i*} goes out].
- (5) *Variable Binding*
Someone_{*i*} serenaded the woman [*Adjunct* before **he**_{*i*} left the party].
- (6) *Long-distance Anaphor Binding (an example from Japanese)*
John_{*i*}-wa [*Adjunct* **Mary**_{*j*}-ga **zibun**_{*i/j*}-no heya-o soozisite kara]
 John-TOP Mary-NOM SELF-GEN room-ACC clean after
 ie-ni kaettekita
 home-DAT came
 Lit. ‘**John**_{*i*} came home [*Adjunct* after **Mary**_{*j*} cleaned **self**_{*i/j*}’s room].’

- (7) *Unselective Binding = Wh-arguments In-situ Licensing*
 John-wa [_{Adjunct} Mary-ga **nani**-o yomioete kara] issyoni
 John-TOP Mary-NOM what-ACC finished.reading after together
 dekaketa no
 went.out Q
 Lit. ‘John went out together [_{Adjunct} after Mary finished reading **what**]?’

In (4), the R expression *Mary* within the adjunct cannot take *she* as its antecedent due to Principle C of the binding theory. In (5), the quantificational expression *someone* licenses the pronoun *he* within the adjunct as its bound variable. (6) indicates that the reflexive pronoun *zibun* ‘self’ within the adjunct can take the matrix subject *John* as its antecedent. In (7), the indeterminate pronoun *nani* ‘what’ within the adjunct is licensed by the matrix Q-morpheme *no*.

2.2 Transferred Domains

I argue that the above contrast regarding opaqueness between Move/Agree and binding dependencies are not only observed with adjuncts but also with transferred domains.

2.2.1 Opaqueness of transferred domains with Move/Agree

Just like adjuncts are opaque to Move/Agree, transferred domains are also opaque to Move/Agree. Due to the opaqueness of transferred domains with Move, a movement operation proceeds successive-cyclically, i.e., locally, using phase edges as “escape hatches” as shown in (8):

- (8) What do you [_{vP} *t'''*] [think [_{CP} *t''*] [that John [_{vP} *t'*] [read *t*]]]]]]?

Evidence for successive cyclic movement comes from anaphoric reconstruction facts (Barss 1986), morphological reflexes of successive cyclic *wh*-movement in languages like Chamorro and Irish (Chung 1998, McCloskey 1990, 2002), *wh*-quantifier float facts in West Ulster English (McCloskey 2000), inversion triggered by *wh*-fronting in Belfast English (Henry 1995), and *wh*-copying and partial *wh*-movement facts in German (McDaniel 1989).

Transferred domains are also opaque to Agree. As argued by Polinsky & Potsdam (2001), Boeckx (2004), Bhatt (2005), and Richards (2012), among others, although long-distance Agree facts are widely attested in languages like Blackfoot, Chukchee, Hindi, Itelmen, and Tsez, those facts are only apparent and should be explained by different local analyses depending on the properties of long-distance Agree. First, Polinsky & Potsdam (2001) propose an LF-topicalization analysis of

Tsez long-distance Agree facts. Let us consider (9) as an example. Given that clause peripheral functional structures like CP and TopP are only present when required, their analysis assigns LF-representation (10) to (9):

- (9) Eni-r [už-ā **magalu** bāc'rufi] b-ixyo.
 mother-DAT boy-ERG bread.III.ABS III.ate III-know
 'The mother knows the boy ate the bread.'
 (Polinsky & Potsdam 2001: 584)
- (10) Eni-r [_{TOP} **magalu** [_{TP} už-ā t bāc'rufi]] b-ixyo.
 mother-DAT bread.III. ABS boy-ERG III.ate III-know

In (10), the embedded object *magalu* 'bread.III.abs' undergoes covert topicalization to Spec,Top, where local agreement with the matrix verb is possible.

Long-distance Agree facts in Hindi and Itelmen can be accommodated under a local analysis in terms of restructuring (Boeckx 2004, Bhatt 2005, Bobaljik & Wurmbrand 2005). In these languages, long-distance agreement is possible only into a non-finite complement of so called "restructuring verbs" like want and forget, as shown below:

- (11) *Hindi*
 Vivek-ne [**kitaab** paṛh-nii] chaah-ii.
 Vivek-ERG book.F read-INF.F want-PFV.FSG
 'Vivek wants to read the book.'
- (12) *Itelmen*
 Na əntxa-βum+nin [**kma** jeβna-s].
 he forget-1SG.OBJ=3CL me meet-INF
 'He forgot to meet me.'

If we assume with Wurmbrand (2001) that restructuring infinitives are reduced structures which do not involve projection of an embedded subject, restructuring infinitives are bare VPs. Agreement into restructuring infinitives is local in that it does not cross any phase boundary.

As for long-distance agreement in Chukchee like (13), Bobaljik (2008) proposes a proxy agreement analysis:

- (13) ənan qəlyiɬu ləŋərkə-nin-et [iŋqun ø-rətəmŋəv-nen-at **qora-t**]
 he -INST regret-3-PL that 3SG-lost-3-PL reindeer-PL
 'He regrets that he lost the reindeers.'

Although it appears that the matrix light verb *ləŋərkə-nin-et* 'regret-3-PL' agrees directly with the embedded plural object *qora-t* 'reindeer-pl', Bobaljik argues that

the matrix verb agrees with a null proleptic object in the matrix clause, which is coreferent with the embedded object.

2.2.2 Transparency of transferred domains with binding dependencies

Unlike Move/Agree, binding dependencies, which are accessible into adjuncts (4)–(7), are also accessible into transferred domains (14)–(17):

- (14) He_i [_{VP} says [_{CP} that Mary [_{VP} thinks [_{CP} that Suzy [_{VP} claimed [_{CP} that John_i is leaving]]]]]]].
- (15) Everyone_i [_{VP} told John [_{CP} that people [_{VP} knew [_{CP} that he_i should leave]]].
- (16) John_i-wa [_{VP} [_{CP} Mary_j-ga [_{VP} zibun_{i/j}-no heya-de benkyoo siteiru]
John-TOP Mary-NOM SELF-GEN room-in studying
to] omotteiru]
C think
Lit. ‘John_i thinks that Mary_j is studying in self_{i/j}’s room.’
- (17) John-wa [_{VP} [_{CP} Mary-ga [_{VP} [_{CP} Suzy-ga [_{VP} nani-o katta]
John-TOP Mary-NOM Suzy-NOM what-ACC bought
to] itta] to] omotteiru no
C said C think Q
Lit. ‘John thinks that Mary said that Suzy bought what?’

In (14), the R expression *John* within the transferred domain cannot take *he* as its antecedent due to Principle C of the binding theory. In (15), the quantificational expression *everyone* licenses the pronoun *he* within the transferred domain as its bound variable. (16) indicates that the reflexive pronoun *zibun* ‘self’ within the transferred domain can take the matrix subject *John* as its antecedent. In (17), the indeterminate pronoun *nani* ‘what’ within the transferred domain is licensed by the Q-morpheme *no*.

The above-mentioned parallelism regarding opaqueness between adjuncts and transferred domains needs an explanation. The “cashing-out” approach, however, cannot explain the parallelism between adjuncts and transferred domains. Especially, it cannot explain (14)–(17), where binding accesses an element inside a transferred domain. This is because once the transferred domain is removed from the workspace, there is no way of accessing an element inside the transferred domain, unless we assume an ad hoc procedure by which a “cached-out” structure somehow finds its way back to its interpretation site.

3 A proposal

I adopt Chomsky's (2004) theory of adjunction, where apart from Set-Merge $\{\alpha, \beta\}$, Pair-Merge $\langle \alpha, \beta \rangle$ is introduced to explain a property of adjunction. Adjuncts, being Pair-Merged, are on a "separate plane" and thus opaque to the syntactic computation. Chomsky also argues (based on Binding Condition C reconstruction facts) that after structure-building is complete, ordered pairs $\langle \alpha, \beta \rangle$, which are generated by Pair-Merge, may undergo the operation Simplification (SIMPL), being converted to simple sets $\{\alpha, \beta\}$ at LF; SIMPL makes adjuncts put back on "a primary plane" and thus visible at LF.

Given that Move/Agree, having PF reflexes, apply in the overt component (during structure-building) whereas binding applies at LF (Chomsky 1995, among others), the Pair-Merge theory of adjunction explains the opaqueness of adjuncts to Move/Agree (2), (3) and their transparency to binding relations (4)–(7). This is because a Pair-Merged adjunct $\langle \alpha, \beta \rangle$, being on a "separate plane," is opaque to the overt syntactic computation like Move/Agree. The Pair-Merged adjunct $\langle \alpha, \beta \rangle$ however, is converted to $\{\alpha, \beta\}$ through SIMPL at LF, thereby adjuncts are transparent to binding dependencies at LF.

I extend this Pair-Merge analysis of adjuncts to Transfer. It has been claimed by Guimarães (2000), Kayne (2009) and Adger (2013) that in Set Merge (α, β) , nothing in Chomsky's (2013, 2014) Free Merge system prevents α from being identical with β ; α may Set-Merge with itself (called Self Set-Merge), resulting in $\{\alpha, \alpha\}$. I argue that Self Pair-Merge is also available, resulting in the ordered pair $\langle \alpha, \alpha \rangle$. I propose the Self Pair-Merge approach to Transfer, arguing that Self Pair-Merge applies to the complement of a phase head at Transfer as shown in (18):

$$(18) \quad [_{XP} YP [_{X'} X \mathbf{ZP}]] \text{ —Transfer—} \rightarrow [_{XP} YP [_{X'} X \langle \mathbf{ZP}, \mathbf{ZP} \rangle]]$$

In (18), the transferred domain ZP, being Self Pair-Merged, is made inaccessible to the syntactic computation by being sent to an opaque "separate (adjunct) plane." The Self Pair-Merge approach can explain the parallelism between adjuncts and transferred domains. Since adjuncts, being Pair-Merged, are opaque to the overt syntactic computation like Move/Agree (2), (3), it follows from the Self Pair-Merge approach to Transfer that transferred (Self Pair-Merged) domains are also opaque to Move/Agree as shown in Section 2.2.1. Moreover, since adjuncts are transparent to the syntactic computation at LF like binding dependencies through SIMPL (4)–(7), it follows that transferred domains are also transparent to binding dependencies (14)–(17) at LF after SIMPL as shown in (19):

$$(19) \quad [_{XP} YP [_{X'} X \langle \mathbf{ZP}, \mathbf{ZP} \rangle]] \text{ —SIMPL—} \rightarrow [_{XP} YP [_{X'} X \{\mathbf{ZP}, \mathbf{ZP}\}]]$$

The set $\{\alpha, \alpha\}$ is identical to the set $\{\alpha\}$ according to the Extensionality Axiom of Set Theory, since both of them have exactly the same membership. In other words, if the operands of Set-Merge are identical, the output is a singleton set. Then, $\{ZP, ZP\}$ in (19) is identical with ZP as shown in (20):

$$(20) \quad [_{XP} YP [_{X'} X \{ZP, ZP\}]] = [_{XP} YP [_{X'} X ZP]]$$

Hence, the transferred domain is properly interpreted as the complement of a phase head at LF, being accessible to binding dependencies.

It should be noted that in contrast with the “cashing-out” approach to Transfer, which removes the transferred domains from a workspace, the Self Pair-Merge approach claims that transferred domains are still in the workspace but become invisible to the syntactic computation by being sent to a “separate (adjunct) plane” through Self Pair-Merge. In this respect, our approach is similar to Uriagereka’s (1999) conservative approach to Spell-Out, which collapses the syntactic object (SO) $\{\alpha, \{L, K\}\}$ into the non-SO (a “frozen” compound) $\{\alpha, \langle L, K \rangle\}$ through Spell-Out, and Collins & Stabler’s (2011) non-tampering condition respecting version of Cyclic Transfer, which replaces the transferred domain by $\langle \text{Transfer}_{PF}(\text{SO}), \text{Transfer}_{LF}(\text{SO}) \rangle$ (the forms interpretable by the S-M and C-I interfaces). Our approach to Transfer, however, differs from theirs in that the former, but not the latter, can account for the transparency of transferred domains with binding dependencies. This is because Uriagereka’s and Collins and Stabler’s approaches would incorrectly predict that transferred domains are no longer visible to any syntactic operations. Furthermore, the Self Pair-Merge approach to Transfer is conceptually more attractive than the “cashing-out” approach, Uriagereka’s conservative approach, and Collins and Stabler’s Cyclic Transfer approach in that our approach only makes use of Merge, an indispensable and independently motivated operation, thereby conforming to the strong minimalist thesis (SMT) which requires us to posit as little as possible beyond Merge.

4 Conclusion

This paper has proposed Transfer as Self Pair-Merge, where the transferred domains are in the workspace but made invisible by application of Self Pair-Merge. The proposed analysis is supported by the parallelism between adjuncts and transferred domains regarding opaqueness. Under our approach, Transfer is subsumed under Merge, thereby conforming to the strong minimalist thesis (SMT).

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