Transfer Remnants and “Total” Transfer

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Abstract: In this talk I suggest that remnant structures may be derived not just by extraction of their internal parts, but by Transfer of their internal parts. In this phase-based approach, transferred material remains syntactically *in situ,* while still active syntactic objects are left unlinearized (*Total Transfer*). Material leftover after Transfer thus preserves its original hierarchical structure. Syntactic objects leftover after Transfer form a *Transfer Remnant*, which may include multiple “active” SOs of the same type. These may move individually, or the whole Transfer Remnant may collectively be targeted as a “Big Goal” for movement, as in multiple wh-movement. Original hierarchical relations between moving elements is thus generally retained.

# Some Structure-preservation

There exists a tendency in natural language for basic hierarchical relations between syntactic objects with some *similar* property (aka *feature*) to be maintained when movement related to the shared property applies:

X*f*

Y*f*

X*f*

Y*f*

X

Y*f*

*tX*

√ ok

*tY*

X*f*

*tX*

## Locality: Relativized Minimality (Rizzi 1990, Ferguson & Groat 1994), Superiority (“Closest Attract”; cf. Chomsky 2000 et seq)

Hierarchical relations between syntactic objects in identical types of positions (A, A´, X˚) or bearing certain features (Case, wh, φ, etc.) tend not to be disturbed. Core examples (base positions underlined):

### A-movement

1. a. [CP **It** seems [CP that [iP **John** was *tJohn* having a good time ]]].

b. \* [CP **John** seems [CP that [IP **it** was *tJohn* having a good time ]]].

### A´-movement

1. a. [CP **Who** *twho* wonders [CP **where** Joe went *twhere* ]]?

b. \* [CP **Where** does Joe wonder [CP **who** *twho* went *twhere* ]]?

### X˚-movement

1. a. [TP They **could** [ModP *tcould* [AspP **have** left ]]].

b. \* [TP They **had** [ModP **can** [AspP *thave* left ]]]?

### Superiority

1. a. [CP **Who** do you think [CP *t´´who* [TP *t´who* [vP *twho* left **when** ]]]]?

b. \* [CP **When** do you think [CP *t´when* [TP **who**[vP *twho* left *twhen* ]]]]?

## Clusters

Multiple movement of similar types of objects also retains base order, suggesting underlying hierarchy is maintained (see Pesetsky & Fox 2001 for a different approach). Core examples:

### Multiple Wh-movement

1. a. [CP  **Koj** **kogo** [TP *tkoj* viźda *tkogo*]]? (Bulgarian)

*Who whom sees*

‘Who saw whom?

b. \* **Kogo koj** viźda?

### Multiple Object Shift

Verb raising out of vP feeds object shift. From Rackowski & Richards 2005:

1. a. Ég skilaði **bókasafninu** **bókini** ekki [vP *tV  tbókasafninu tbókini*].

*I returned library-the.dat books-the.acc not*

‘I didn’t return the books to the library.” (Icelandic)

b. \* Ég skilaði **bókini** **bókasafninu** ekki [vP *tV  tbókasafninu tbókini*].

### Clitic clusters

Though much variation is found in base orders (PCC effects also interfere), base position hierarchy tends to be maintained where possible:

1. a. Marie **lui** **en** parle [VP *tV tlui ten*].

*Mary him.dat about-it speaks*

‘Mary speaks to him about it.’

b. \* Marie **en** **lui** parle.

### Indefinite wh-clusters

Again, there are many other factors involved, but the base pattern preserves order (Struckmeyer 2011, Lechner 1998):

1. a. … daß **wer** **was** nicht [ *twer twas* gekauft hat ]

*that somebody something not bought has*

‘… that somebody didn’t buy something.’

b. \* … daß **was wer** nicht gekauft hat.

(Note that scrambling is allowed only with multiple indefinite *wh*-elements.)

# Phase Theory

## The Phase Impenetrability Condition (PIC)

We’ll stick to PIC1 (cf. Richards 2011).

1. Phase Impenetrability Condition (Chomsky 2000)

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.

α (=HP)

H

X

Y

## Unvalued features, Phase Edges, and the IFM

Unvalued features cause a crash at the interfaces, thus if phase-head H does not value a feature uF on Y in its complement, Transfer must move Y to the phase-edge…

1. so that uF remains accessible to further computation (and can get valued);
2. so that the interfaces “know” uF should not be interpreted (cf. feature-inheritance at Transfer to let interfaces “know” a valued feature should be ignored; see Richards 2011, 2012).

This is called *Indirectly Feature-driven Movement* (IFM). Example: a passive vP, with defective v unable to value Case.

vP

vdef

DPuCase

# Problems with phase-theoretic approach

## A redundancy: Activity vs. PIC

Consider the continued derivation of (10), with unvalued φ-features of T (perhaps inherited from C) probing for something “active” bearing φ-features (cf. Activity Condition of Chomsky 2000, 2001):

vP

vdef

*tDP*

Tuφ

C

DPuCase

Why is DP visible to the probe C?

1. It is on the phase edge (PIC);
2. It bears an unvalued feature, uCase.

* **Redundancy**

## Other odd things about IFM:

### Movement to the edge does not “remove” uF from the lower occurrence

Lower and higher occurrences are the *same element.* The interfaces still need explicit instruction to “avoid” uF.

### Only PF is affected

The DP in (11, 12) still gets its object theta-role upon Transfer; the lower occurrence is necessarily visible to LF computation. Thus deletion of the lower copy might be a “solution” to get rid of uF for PF, but not for LF.

Even at PF there is potential problem: Lexical or Quirky Case might be valued in the base position; deletion of the lower copy would render this mysterious (see section 5.4)

### What licenses “extra” movement when a feature is valued?

Feature-valuation is often accompanied by movement to the Edge of the phase doing the valuation (hence Spec-Head relations). But Agree does not require this configuration. Why is there overt movement that *looks like* IFM, but involves a valued feature?

### A Problem for wh-movement/superraising

Why doesn’t IFM interfere with command relations for, e.g., Superiority?

1. \* When do you think wholeft?

vP

v

*twhen*

who

when

If *when* bears an unvalued operator feature that drives movement, IFM makes it structurally higher than *who,* thus closer to a wh-probe. (Case movement of *who* to Spec TP doesn’t help; *when* will move again to Spec CP, and remain higher.)

1. a. Who did John tell to do what?

b. \* What did John tell who to do?

vP

v

*twhat*

who

what

John

tell

. . .

Similar problems emerge for A-movement/Superraising and wh-Islands.

# Countercyclic operations

Perhaps relative hierarchy is preserved through interlocking movements. . .

## Tucking-in operations (Richards 1997, Preminger 2007)

Force the moving element to move low:

1. a. b.

vP

v

*twhen*

who

when

CP

C

*tkogo*

koj

kogo



*tkoj*

1

2

A *countercyclic* operation; cf. also formation of Wh-clusters (Grewendorf 2001), clitic clusters (Cardinaletti 2006, Roberts 2010 etc.).

## Merge does not yield “tucking in”

Merge (a,b) → {a, b}. *That’s all we have.* “Tucking in” in (13) it would require destroying old structure and building a new structure.

Allowing such operations entails that Syntax can arbitrarily remerge structures in order to rearrange terms and define new ones any way we see fit: a highly non-restrictive kind of structure-building (see Bobaljik 1995).

Proposal

# Total Transfer

Eliminate IFM. Then hierarchical relations remain unaltered.

## Getting rid of IFM

1. **Total Transfer**

a. All material in a phase  with head H is transferred directly to the interfaces.

b. uF on X, if not licensed/valued by H, is interpreted at the interfaces as a specific *instruction.*

At PF, uF serves as an instruction *not to linearize X in *

1. Example:

vP

vdef

**DPuCase**

V

VP

PF

LF

(Assuming here no further uFs on V/vdef). Now vdef can be linearized with respect to VP; VP in turn can linearize its parts: but DPuCase will not be linearized. PF has interpretations for two objects, but they are not linearized with respect to each other:

1. What PF sees:

vP

vdef

DPuCase

V

VP

**⦾**

&

Linearization:

v>V,

DP

This is clearly “not yet” convergent, as there is no single string (cf. Epstein & Seely 1999). No order is established between the DP and the vP (cf. Fox & Pesetsky 2004). The DP can be linearized by merging once its Case feature is valued:

vP

vdef

**DPCase**

V

VP

T

**DPCase**

PF

LF

PF now linearizes DP, since it has no uF:

vP

vdef

DPCase

V

VP

**⦾**

T

TP

Linearization:

DP>T>vP

v>V

*(complete)*

**Two problems:**

1. Doesn’t Transfer *get rid of* the structure (see Narita 2011, 2012), making vP disappear too?
2. Won’t the derivation crash if LF/PF are sent unvalued uF?

**Two Solutions:**

## Weak Transfer (cf. Chomsky 2013)

Chomsky (2013): Transfer need not involve “loss” of syntactic structure. Structure remains present, can be probed into, merged, etc. The structure is not “gotten rid of;” it just becomes effectively inert. No syntactic operation can change a transferred domain: this would violate No Tampering.

## uFs are interpretable: “Do not linearize”

On the LF side, uF may be involved in theta-assignment (via uCase), and with *variable* interpretation (via uOp features). On the PF side, uF simply means “I am a trace, do not linearize me in this Transfer Domain.” uF is thus a kind of *instruction* to both interfaces.

uF, a subtype of FF, thus *relates* the PF and LF interpretation of SOs.

## Lexical Case: evidence for early PF interpretation of non-linearized elements

Lexical properties of V can require specific morphological Case on argument DP, without structurally licensing DP:

1. a. … dass er mirdat geholfen hat.

b. … dass mirdat geholfen wurde.

vP

vdef

**mir**dat

**uCase**

geholfen

VP

PF

LF

Licensing of DAT must apply here: yet linearization has not yet taken place.

## Retaining hierarchical relations

Another example: Superiority

vP

v

**who**

**when**

V

No linearization yet for *when,* due to its unvalued Operator feature. (None yet for *who* either, due to Case; that comes later.) Therefore, *who* will forevermore count as a closer target for a wh-probe.

## *In Situ* Case licensing

Note that the object of a passive remerges in Spec TP since it could not be linearized in the vP. But if v\* is not defective, we expect movement to be unnecessary:

vP

v\*

**DPuCase**

V

VP

PF

LF

Linearization:

v\* > V > DP

Thus phase heads that value/license uF on XP already *within* their phase do not necessarily require movement of XP.

**Open Question:**

*What triggers remerge?*

* 1. If it is free, why could it not wait indefinitely, allowing elements to move arbitrarily high?
  2. If it is triggered by valuation, then there is no *in situ* Case as in 24.

## Further conceptual/empirical advantages

1. **Eliminates Redundancy:** The redundancy noted in 3.1 is overcome: elements are visible not because they are both on the phase edge and have uF, but *simply because they have uF.* What is accessible to syntactic computation is whatever has “visible” features.
2. **Sheds light on the the Spec-Head relation:** Since only SOs bearing unvalued features remain unlinearized, we can now *motivate* movement as being triggered by feature-valuation: the SO is now phonologically interpretable, but where should it go? The phase it was first-merged in has already undergone Transfer, and is thus linearized: further operations on it would be countercyclic. So the SO must remerge outside that phase: to wit, to the Spec of the valuing head. Linking remerge with feature-valuation/licensing is thus a means to satisfy interface conditions: in this case, formation of a single, total linear order of lexical items at PF.
3. **Allows limited long-distance Agree** (cf. Bošković 2007, Polinsky & Potsdam 2001): a feature F on XP may be visible to a probe, even though F is valued. But XP cannot move: it has already been linearized in its Phase, and has no features left to value anyway (so its remerge is not triggered).
4. **Accommodates Lexical/Quirky Case:** Moved elements are still interpreted at PF in their base positions, allowing them to be sensitive to local morphological environments there, even if they are not linearized there.
5. **Naturalizes the PIC:** No operation can alter interpretation (PF, LF) of a transferred phase, although the elements of the transferred phase are still visible, and *new* relations based on them can be formed.

# Transfer Remnants

Key insight of Relativized Minimality: **orthogonality**

* of positions (A, A´, X˚) (Rizzi 1990)
* of features (Case, φ, wh/Op, focus, etc.) (Ferguson & Groat 1994, Ferguson 1997)

In terms of Probe-Goal: a probe only “sees” features of a similar kind. Wh/focus does not intervene for a phi probe, and vice versa.

Consider the superiority example again, a finite clause derivation having reached a C phase, with an active wh-probe on C:

1. a. The structure

vP

v

**(who)**

**when**

V

AdvP

who

T

CuWh

TP

VP

PF

LF

(

b. What C can potentially “see:”

**who**

**when**

CWh



In single wh-movement languages: since *who* is closest to C, it must be the element left unlinearized (with *when* licensed in some other manner as *in situ* wh).

But what if C can license two whPs? How do they “come together?” Note: they are already together, in , *as* !

## Multiple whP-movement: “Big Goals”

Informal Proposal: two possible notions of closeness to probe PF.

1. **Big Goal Parameter** *(def.)*

In [ P*f* . . . [ X*f* [ Y*f* [ Z*f* ]]]], the closest Goal for P*f*is

1. X*f*([−big]), or
2.  ([+big]).

The notion of a “Big Goal” can be seen as dynamic labeling of constituents: cf. Chomsky, in press; Blümel 2012, Rizzi 2012: shared prominent features re-label a constituent.

A language like English with single wh-movement has the parameter setting [−big]. Thus in (20b) above, *who* is attracted by a higher probe.

A language like Bulgarian with multiple wh-Movement has the parameter setting [+big] for F=[wh] (or possibly F=[focus]; cf. Bošković 1997,Cheng 1997)

Bulgarian example (put aside movement of verb for now):

1. a. **Koj kogo** viźda? ‘Who saw whom?’

vP

v

**koj**

**kogo**

V

*tkoj*

T

CuWh

TP

VP

viźda

b. What PF has (to wit: *viźda, koj,* and *kogo,* unordered):

vP

v

⦾

⦾

V

⦾

T

TP

VP

viźda

koj

kogo

CuWh

c. What C sees (a Big Goal):

**koj**

**kogo**

CuWh



C can now value the uOp features on *koj* and *kogo,* which must linearize: this is done by merger of :

d. Movement of :

**koj**

**kogo**

CuWh





**. . .**

e. What PF now has:

vP

v

⦾

⦾

V

⦾

T

TP → 

VP

viźda

kogo

koj

C



* Notice that brackets effectively disappear: though in one sense the entire syntactic structure of  is remerged, in another sense, since everything in it has been transferred except the uninterpreted whPs, only those whPs are now transferred: as if nothing else where there.
* Call this derivationally “slippery” constituent a *Transfer Remnant.*

**Question:**

What about all the other material in (T, v+ *viźda*)? Why isn’t it “pied-piped” with or pronounced a second time?

**Answer:**

All the other material in  has been transferred as the complement of C. It is in an **unalterable** precedence relation with C: it follows C (all of it -- with gaps for occurrences of the whPs). Any further operations on it would violate No Tampering/Cyclicity.

No additional stipulations here are being added here. Only what is naturally assumed for Weak Transfer (Chomsky 2013, Blümel 2012) applies. Consider the standard case of two phases:

1. a. “Classic” Transfer of phase complement:

[ C [SBJ [ T [ *tsbj* [ v\* [ V OBJ ]]]]]]

b. Total Transfer of entire phase (with T considered a phase):

[ C [SBJ [ T [ *tsbj* [ v\* [ V OBJ ]]]]]]

In either analysis, the transferred inner phase is not “transferred again” upon transfer of the outer phase. Whatever has been transferred is forever unalterable.

## Generalizing Big Goals: Multiple Object Shift

1. Ég skilaði **bókasafninu bókini** ekki. ‘I returned the books to the library.’

(Icelandic)

vP

Ég

*tV*

T+v+V

TP

VP →

skilaði

bókini

bókasafninu



ekki

…

*tbókasafninu*

*tbókini*

Assumption: some feature of the DPs related to specificity, possibly [+person], is valued/licensed outside vP. This could be due to an additional functional head above v, or by merger to a position outside the scope of v (cf. the Repel operation of van Crænenbroeck 2006).

## Big Goals and Clitic Clusters

Similar assumption for clitics: they bear a feature/features ([number], [peson], etc,; see esp. Cardinaletti 2007, Roberts 2010).

1. Marie **lui en** parle. ‘Mary speaks to him about it.’ (French)

vP

Marie

*tV*

T+v+V

parle

TP

VP →

en

lui



*tlui*

*ten*

T

*tv*

# Successive-cyclic movement: gone

How serious a problem is this?

## Intermediate wh-agreement

1. Manu na isla ni masangani hao man-ansias siha

*which L island Comp* ***agr****.Pass-say.to you* ***agr****-anxious they*

pära uma-muv siha guätu *t* ?

*Fut* ***agr****-move they over-there*

‘Which island were you told that they are eager to move to?’ (Chamorrow; from Chung 1998:211)

But under Weak Transfer, each stage of Transfer leaves unvalued Op-features visible to any Probe, whether or not they move. *In situ* analysis works fine. Such cases are interpretable as cases of *long-distance Agree.*

* Hypothesis: intermediate wh-agreement values features of Probe, but not of Goal.

1. . . . pära [VP **umauWH**-muv siha guätu [uOp **Manu na isla** ]]

Probe Goal

# Possible Extensions

## Gapping

1. Frank gave cake to the boys, and **Mary** ~~gave~~ **cookies** **to the girls.**

Hypothesis: elements leftover in gapping share contrastive focus feature *f*. Ellipsis involves Transfer of FinP to LF, while Spell-Out of CP is shunted (i.e. “thrown away”). Transfer of FocP licenses remaining material.

1. a. Transfer FinP, not including XP*f* in linearization: but elide at PF

to

FinP

Fin°

Mary*f*

gave

cookies*f*

the girls

PP*f*

PF – but elided!

LF

b. The active, unlinearized remnant, visible to Foc*f*:

to

Mary*f*

cookies*f*

the girls

*f*

*f*

c. Merge and Transfer FocusP:

to

Mary*f*

cookies*f*

the girls

*f*

*f*

Foc°*f*

FocP

PF

LF

## VP Remnant Movement

So far we have assumed phase heads license and linearize with their complements, leaving unlicensed elements inside unlinearized:

A

H

XP

YP

B

H > XP‒YP,

YP

Possibility: an inversion of this, in which a phase head licenses something inside its complement, but not its complement as a whole:

H

XP

YP

H > YP,

XP‒YP

I.e. a form of Distributed Spell Out. Consider German VP-fronting, leaving behind material not known to scramble:

1. [VP Geküsst haben] wird er bestimmt schon **wen/niemanden**.

T

vP

wen/

niemanden

geküsst

haben

Two possibilities:

* 1. *vP bears topic/focus feature*

This feature is shared by all vP elements except the indefinite/quantifier direct object, *and* this feature is not licensed/tolerated in the FinP/T domain (cf. van Craenenbroek 2006 on “Repel-f ”.). Remerge outside of FinP is licensed.

* 1. *Linearization may optionally effect only a subpart or subparts of a spelled-out constituent*

What remains must Remerge at some point, where it will receive special interpretation. (This analysis presents possible problems for locality, if there is no licensing “Probe”.)

As a result of T-phase Transfer of vP, *wen/niemanden* will be effectively “removed” from vP without movement. The Transfer Remnant vP is then fronted with what appear phonologically to be traces:

wen/

niemanden

geküsst

haben

geküsst

haben

wird er bestimmt schon

wen/

niemanden

## “Mysterious” Kaynean Remnant movements

A problem for LCA-based approaches: XP raises to Spec HP to check/license a feature associated with H. But original order is restored by remnant movement to some mysterious Spec GP.

Example from Kayne 2005: Stylistic inversion (SCL = Silent Clitic)

1. a. [IP je crois que Jean-SCL est parti ] →

b. Jean [ F° [IP je crois que *tJean*-SCL est parti ]] →

c. [IP je crois que *tJean*-SCL est parti ][ G° [ Jean [ F° *tIP* ]]]

F° can be plausibly associated with semantics associated with Stylistic Inversion of the subject. But what is G° but a place to put the IP?

Alternative analysis: F can only see, and only linearize against, elements with focus feature *f*. Everything else fails to be linearized in 34a), necessitating remerge of the Transfer Remnant IP (34b).

1. Je crois qu’est parti Jean.

a. [FP **F***f***°** [IP je crois que **Jean***f*-SCL est parti ]]

Linearization: *F > Jean,*

*je > crois > que > SCL > est > parti*

→ Merge IP outside FP →

b. [[IP je crois que **⦾**-SCL est parti ] [ F**°. . .**[ Jean]]]

Linearization: *je > crois > que > SCL > est > parti > F > Jean*

Similar analyses available for Heavy NP shift, rightward focus, etc. Bellunese “non-Chinese” rightward whP (from Poletto & Pollock 2013):

1. À-tu parecia che?

a. [IP tu à parecia che ]

b. [ **F*f*°** [IP tu à parecia **che*f*** ]]

Linearization: *F > che,*

*tu > à > parecia*

c. [[IP à tu parecia **⦾**] [ F**°. . .** [ che ]]] (with further displacement of *à*)

Linearization: *à > tu > parecia > F > che*

**Question:** When should remerger of the Remnant occur? Optimally, as soon as linearization would be licensed, i.e. in this case, right away. How to enforce this? This returns us to the general question of when Remerge of non-linearized elements is forced – some sort of Earliness Principle is at work. (It is as if linearization itself were a “feature” to be valued: valuation ↔ remerge.)

## Predicate Clefts

Yoruba (examples from Kobele 2006):

1. **rira fun ni** o ra isu fun mi

*Nom-buy give Foc he buy yam give me*

“It was buy the yam for me that he did.”

From [ V1 DP1 V2 DP2 ] structure, only [ V1 V2 ] is copied.

*Tentative analysis:* V elements are merged all sharing a focus feature. In vP phase, PF spells out and linearizes elements bearing focus feature u*f* by *ignoring* the feature. To avoid violation of recoverability of deletion, PF makes *extra copies* of V-elements bearing u*f.* These cannot be linearized without higher agreeing Foc°. Introduction of Foc° licenses linearization of these extra copies, drawn from the Transfer Remnant vP.

# (Yet more) problems for future work

## Islands (other than Relativized Minimality types)

1. a. \* Which official do you know [DP the man next to *t* ]?

b. \* Which official did [TP [DP friends of *t*] condemn the president ]?

No game to play with +/˗ edge features or the like (cf. Richards 2012). Something like defective intervention may be going on (cf. Stroik 2009: definiteness features of D “freeze” whP without checking them). Many island effects will have to amount to A-over-A violations, perhaps relativized over features.

## Analyzing non-order-preservation

* This may generally be movement driven by features that are *not* shared (eg. person vs. number, focus vs. interrogative, inherent vs. structural Case, etc.).
* Looser constraints on lower elements of clusters (examples from Boskovic 1997):

1. a. Koj kogo kak e tselunal?

*who whom how is kissed*

‘Who kissed whom how?’

b. Koj kak kogo e tselunal?

*who how whom is kissed*

c. Koj kogo kuide e vidjal?

*who whom where is seen*

c. Koj kuide kogo e vidjal?

*who where whom is seen*

## Why do some languages form big goals and others not?

* Deep theoretical question concerning dynamic nature of labels (cf. Chomsky in press, Blümel 2012 ms., Rizzi 2012 ms.).
* Is there a relation between Big Goals and LF Absorption?

## Intermediate landing sites and Binding Domains: does loss of successive cyclic movement through Spec CP cause trouble here?

1. [Which picture of himself] does John think [CP ***t´WhP*** [ Mary likes *tWhP* ]]?

# Conclusion

IFM movement to the Edge is theoretically problematic, complicates superiority, and leaves open the question of why feature-valuating movement often entails movement. By doing away with it, we retain base-generated hierarchical relations, and explain movement as a merger that “completes” the interpretation SO (in particular, its linearization).

The syntactically active parts of structures left over after Transfer are those which both 1. have not been fully interpreted, and 2. are visible, due to some shared feature, to some Probe (or other licenser) that can “advance” their interpretation (again, in particular, their linearization). Such pieces of structure, the Transfer Remnant, may behave as a group, since they are all contained in the phase that failed to fully interpret them at Transfer. This may account both for clustering phenomena of various kinds, and for problematic Remnant Movement cases where one or the other movement appears to be otherwise unmotivated.

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