1. Introduction

We demonstrate how a derived basis accounts for traditional binding facts accounts for coherence relations in a variety of multi-object constructions. Why is (1) well-formed, but (2) ill-formed (Condition A effects)? Why is (3) well-formed but (4) aren’t there a Condition A effects?

(1) I showed John, himself, in the mirror.
(2) I showed John, to himself, in the mirror. (Pesetsky 1995:125-126)
(3) Pictures of himself, worry John. (Belleti & Rizzi:317)
(4) Our account for these constructions without recourse to representational-level Conditions A-C (Chomsky 1981).

Our account has been implemented using a computer model.

• A computer model aids theory development and verification.

2. Background

Kayne 2002

A pronoun element and an antecedent originate within a doubling constituent of the form [Spec head] where the Spec is the antecedent and the head is the pronominal.

John him

A Spec can move out of a doubling constituent, but a head cannot. The Spec can only move out of a doubling constituent if the doubling constituent has moved.

• A reflexive DP (e.g., himself) contains a position for the doubling constituent to move to.

(5) [John him] (John him]'s self

Problem: It is not clear why a doubling constituent must move in order for the Spec to be extracted.

Phase Theory (Chomsky 2000, 2001, etc.):

A derivation proceeds in phases. The complement of a phase head is sent to Spell-Out separately from a phase edge.

(6) Phase-Impenetrability Condition:

In phase α with head H, the domain of H is not accessible to operations outside α, except H and its head are accessible to such operations. (Chomsky 2000:108)

Kayne 1995:

A Spec can move out of a doubling constituent, but a head cannot. The Spec can only move out of a doubling constituent if the doubling constituent has moved.

• A reflexive DP (e.g., himself) contains a position for the doubling constituent to move to.

3. Proposals

Proposal 1: Doubling Constituent

We assume a modified version of Kayne's doubling constituent proposal.

• Proposed doubling constituent structures:

(7) (a) pronoun and r-expression (non-phase) (phase)

(8) Last Report (LP)

A Levinstr lemma (LP) with an uninterpretable feature that is in imminent danger of falling outside of a probe-goal scopal relation will, if possible undergo internal merge into an available theta-position.

• The LP process enables us to assume a modified view of the Phase Impenetrability Condition: when a phase head is Merged, a lower phase, including the edge, is closed off.

(9) Last Report: 

\[ \text{LP} \rightarrow \text{theta}-\text{expression} \]

• X" and Y" are phase heads. When X" is Merged, Y" will be closed off.

Z, a DP with an uninterpretable feature, is subject to LR and undergoes internal merge into theta-position in the higher XP.

• These proposals predict (1-3).

Proposal 2: Last Report (LP)

A Levinstr lemma (LP) with an uninterpretable feature that is in imminent danger of falling outside of a probe-goal scopal relation will, if possible undergo internal merge into an available theta-position.

• The LP process enables us to assume a modified view of the Phase Impenetrability Condition: when a phase head is Merged, a lower phase, including the edge, is closed off.

(10) Last Report: 

\[ \text{LP} \rightarrow \text{theta}-\text{expression} \]

• X" and Y" are phase heads. When X" is Merged, Y" will be closed off.

Z, a DP with an uninterpretable feature, is subject to LR and undergoes internal merge into theta-position in the higher XP.

• These proposals predict (1-3).

4. Model

We tested our theory with a computer model:

• Basic probe-goal search of Phase Theory

 Probability of LR Theta-Merge when a phase is closed off

Doubling constituent structure (7a-c)

• We assume multi-object PPP structures, following Pesetsky (1995).

(11) (a) I showed John, himself, in the mirror.

[θ [λ \[v \[ω \[G \[G \]] \]] \]]]

θ is a null pronoun that assigns Case to a theme (Pesetsky 1995).

(12) (b) I showed John, to himself, in the mirror.

[θ [λ \[v \[ω \[G \[G \]] \]] \]]]

θ is a null pronoun that assigns Case to a theme (Pesetsky 1995).

(13) (a) Pictures of himself, worry John.

• Picture-DP gets causative theta-role twice (once from CP and once from CAUSP).

• A DP can be assigned the same theta-role multiple times (Pesetsky 1995).

5. Derivations

(1) I showed John, himself, in the mirror.

• Doubling constituent is base generated within a picture DP.

(2a-b) [a] *I showed John, himself, in the mirror.

[θ [λ \[v \[ω \[G \[G \]] \]] \]]]

θ is a null pronoun that assigns Case to a theme (Pesetsky 1995).

6. Conclusion

This work demonstrates how a derivation based analysis, motivated by the needs to achieve computational efficiency, accounts for a variety of coherence facts involving constructions that underlying have multiple objects.

This work demonstrates how a computer model can be used to verify how well a theory works.

We can also account for a variety of other data (see Chomsky et al. (2000))

(14) (a) John, praises him,

(b) John, praises himself.

In (14a), when v* is Merged, ‘John’ is not contained within a phase that is about to be closed off and so LR cannot apply. See (15a).

• In (14b), when v* is Merged, ‘John’ is contained within a DP phase (due to the phase head ‘self’): LR applies and ‘John’ moves to subject theta-position. See (15b).

References


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* is Merged, ‘John’ is contained within a phase that is about to be closed off and so LR cannot apply. See (15a).

• In (14b), when v* is Merged, ‘John’ is contained within a DP phase (due to the phase head ‘self’): LR applies and ‘John’ moves to subject theta-position. See (15b)

(15) (a) Pictures of himself, worry John.

• Doubling Constituent is base generated within a picture DP.

• Picture DP Merges with CAUSP (null P that assigns a causative theta-role but no Case).

• CAUSP is a phase head: ‘John’ undergoes LR to theta-position (13a).

• LR applies because ‘John’ lacks Case and a theta-role.

• Merge CAUSP (causative v that occurs in experienctial constructions).

• CAUSP is a phase head: pictures of himself undergoes LR to theta-position (13b).

• LR applies because pictures of himself lacks Case.

• Picture-DP gets causative theta-role twice (once from CAUSP and once from CAUSP).

• A DP can be assigned the same theta-role multiple times (Pesetsky 1995).