

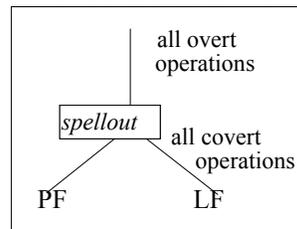
Extrapolation and Covert Movement

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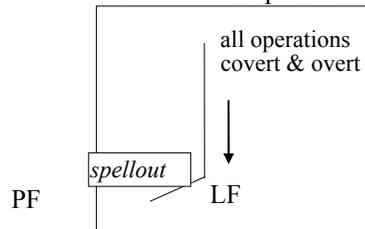
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Introduction

The traditional ‘Y-model’



An alternative picture



•Claims:

- a. Single cycle grammar: covert operations do not necessarily apply *after* all overt operations have taken place. There is no arbitrary dividing line between different kinds of operations.
- b. The phonological theory of QR: the traditional ‘overt’/‘covert’ distinction is a matter of pronunciation. Principles of the phonology-syntax interface determine which part of a chain to pronounce (see Bobaljik 1995, Groat and O’Neil 1994, Pesetsky 1998).

Under the “phonological theory of covert movement” (claim b) the syntax provides structures like (1a-b) to the phonology. Overt operations need not precede covert operations (claim a).

- (1)
 - a. Overt *wh*-movement
 ‘Which girl does John like’
 [which girl] does [John like which girl] → [which girl] does [John like ~~which girl~~]
 - b. Covert QR
 ‘A boy likes every girl’
 [every girl] [a boy likes every girl] → [~~every girl~~] [a boy likes every girl]

1. Extrapolation from NP – a puzzle

Movement out of NP is possible only if the moved constituent is a complement:

- (2)
 - a. Of whom did you see [a painting t]?
 - b. */??From where did you see [a painting t]?
 - c. */??By whom did you see [a painting t]?

However, extrapolation doesn't obey this generalization.

- (3) a. We saw [a painting t_i] yesterday [of John] $_j$.
 b. We saw [a painting (t_i)] yesterday [from the museum] $_j$.
 c. We saw [a painting (t_i)] yesterday [by John] $_j$.

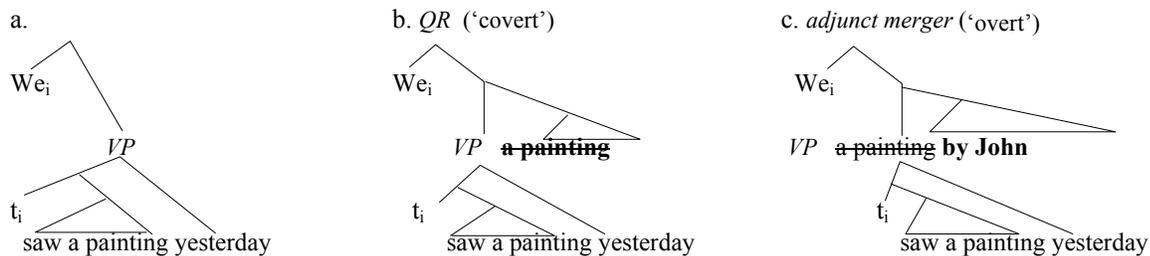
The puzzle might be resolved if we can show that the cases of adjunct extraposition, (3b,c) are not derived by movement.

Though not necessarily: We want to make sure that structures similar to (3b,c) cannot be legitimate inputs to *wh*-movement of the extraposed adjunct. (Consider from this perspective Culicover and Rochemont.)

2. The Proposal – Post-QR insertion of adjuncts

If we adopt the phonological theory of covert movement, we have a potential solution:

- (4) We saw a painting yesterday by John.



[A painting by John] λx we saw [the painting x]

A derivation along these lines was proposed for overt *wh*-movement by Lebeaux (1988). The extension to QR is straightforward under the copy theory of movement and the phonological theory of QR. (For related but different proposals see Guéron and May 1984 and Reinhart 1991.)

3. Prediction for Scope

- (5) **Williams' generalization:** When an adjunct β is extraposed from a "source NP" α , the scope of α is at least as high as the attachment site of β (the extraposition site).¹

Scope diagnosed by variable binding in ellipsis:

- (6) a. I read a/every book before you did.
 b. I read a/every book that John had recommended before you did.
 c. I read a/every book before you did that John had recommended.

¹ See Williams 1974, chapter 4. Williams focused on comparative- and result-extraposition, and did not make the complement/adjunct distinction (see section 4).

Scope diagnosed by NPI licensing:

Adjunct-extraposition bleeds Condition C:

- (7) a. I gave him_j a book yesterday that John_j liked
b. *I gave him_j a book that John_j liked yesterday

Conflicting requirements on scope of the source DP — Condition C vs. NPI

- (8) a. I wanted him_j not to talk to a (certain) girl yesterday that John_j has known for years
b. *I wanted him_j not to talk to any girl yesterday that John_j has known for years
c. I wanted John_j not to talk to any girl yesterday that he_j has known for years

Relative Scope of a negative QP and a rational clause :

- (9) a. John must miss no assignment that is required by his Math teacher in order to stay in school.
b. #John must miss no assignment in order to stay in school that is required by his Math teacher.
c. John must hand in no assignment in order to stay in school that is required by his Math teacher.

Scope diagnosed by creation verbs:

- (10) a. Bill hopes quite desperately to have many ideas that would help him get tenure.
b. *Bill hopes to have many ideas quite desperately that would help him get tenure.
c. Bill hopes to discuss many ideas quite desperately that he assumes will give him tenure.

Scope diagnosed by *there*-constructions:

- (11) a. Bill wants there to be many people (that he can talk to) at the party very badly
b. *Bill wants there to be many people at the party very badly that he can talk to.
c. Bill wants many people to be at the party very badly that he can talk to.

Scope diagnosed by existence presuppositions:

- (12) a. They are looking in vain for a book by Ronald Reagan. (The guy can't write)
b. #They are looking for a book in vain by Ronald Reagan. (The guy can't write)
c. They are looking for a certain book in vain by Irene Hein. (Somebody stole it.)
- (13) any *is licensed in the scope of the verb* look for.
a. I looked very intensely for anything that would help me with my thesis.
b. *I looked for anything very intensely that would help me with my thesis.
c. I looked for something very intensely that will (likely) help me with my thesis.
(Cf. *I would buy anything without making a fuss that will help me with my thesis.*)

- a. I looked in vain for any book that would help me with my thesis.
- b. *I looked for any book in vain that would help me with my thesis.
- c. I looked for a certain book in vain that will (likely) help me with my thesis.

4. The complement / adjunct distinction — setting the stage for additional predictions

Lebeaux (1988): Adjuncts can be inserted after movement; complements cannot (given the projection principle, cf. Freidin 1986, Chomsky 1993)

- (14) a. ??/*[Which book about John's_j library] did he_j read?
b. [Which book from John's_j library] did he_j read?
- (15) a. [Which bombings of his_j enemies] was Clinton_j very proud of?
b. ??/*[Which bombings of Clinton's_j enemies] was he_j very proud of?
- (14b') i. he_j read [Which book] --wh-movement -->
ii. [**Which book**] did he_j read [Which book] --adjunct insertion -->
iii. [Which book **from John's library**] did he_j read [Which book]
- (16) a. ?? [Which of the claims that someone hated John's_j mother] did he_j believe?
(cf. *which of the claims that someone hated his_j mother did John_i believe?*)
b. [Which of the claims that someone told John_j about] did he_j believe?
(cf. Freidin 1986; van Riemsdijk and Williams 1981)

For facts in another domain which are related to the distinction between complements and adjuncts in terms of late insertion (and are probably sharper), see Safir 1999.

We are led to:

- a. Complement extraposition cannot be derived by post QR insertion (given the projection principle). However, it can be derived by (rightward) movement of the extraposed material.
- b. Adjunct extraposition can be derived by post QR insertion. However, it cannot be derived by movement of the extraposed material (given an independently attested constraint on movement — no extraction of adjuncts from NP).

Further Predictions:

(i) *Will the extraposed material show characteristics of movement?*

Adjunct extraposition — no
Complement extraposition — yes

(ii) *Will the source NP show characteristics of QR?*

Adjunct extraposition — yes
Complement extraposition — no

4.1 Properties of Movement (of the extraposed material)

4.1.1 Definiteness

Movement out of Definite NPs is marked:

- (17) a. Who did you see [a picture of t]?
b. ??Who did you see [the last picture of t]?

Clarification: the superlative version of the (b) sentences is marked only on the "absolute reading" in the sense of Szabolcsi (1986).

- (18) a. I saw the last picture yesterday from Monet's waterlily series.
b. ?I saw the last picture yesterday of the waterlily from Monet's garden
c. I saw an old picture yesterday of the waterlily from Monet's garden.

(18b) might also have a derivation with adjunct extraposition. Compare:

- (19) a. ?I saw the last copy yesterday of the book we were talking about.
b. I saw an old copy yesterday of the book we were talking about.
- (20) a. John and Bill heard the same rumor yesterday that you were spreading.
b. ??John and Bill heard the same rumor yesterday that you were quitting.
c. John and Bill heard a similar rumor yesterday that you were quitting.

4.1.2 Condition C

Movement under normal circumstances is incapable of bleeding BT(C).

- (21) a. I gave him_i a picture yesterday from John's_j collection.
b. ??/*I gave him_i a picture yesterday of John's_j mother.
c. I gave him_i an argument yesterday that supports John's_j theory.
d. ??/*I gave him_i an argument yesterday that this sentence supports John's_jtheory.

Extraposition does not take an adjunct out of the Noun Phrase (even though it does take the adjunct to a position above elements that c-command the Noun Phrase at SS)

- (22) a. I told you about John's_j new argument that supports his_i theory.
b. *I told you about his_i new argument that supports John's_j theory.
c. I told John_j about your new argument that supports his_i theory.
d. *I t told him_i about your new argument that supports John's_j theory.
- (23) a. ?? I told you about John's_j new argument the other day that supports his_i theory.
e. * I told you you about his_i new argument the other day that supports John's_j theory.

- f. ?? I told him_i about your new argument the other day that supports John's_j theory.

4.1.3 Coordination

ATB movement is possible out of coordination: complement Extraposition can take advantage of this possibility; adjunct Extraposition cannot.

- (24) a. I wanted to [present an argument__] and [discuss evidence__] very badly that what John told me is right.
b. *I wanted to [present an argument__] and [discuss evidence__] very badly that was discovered by John.
- (25) a. I wanted to [read a book__] and [understand an article__] very badly about the museum we visited last year.
b. *I wanted to [read a book__] and [understand an article__] very badly from the library we visited last year.

4.1.4 Parasitic Gaps

Movement can license PGs:

- (26) I presented an argument__ before having evidence__
a. that what you told me is right.
b. *that you told me about.
- (27) I read a book__ before reading an article__ a. about John
b. *from John's library

Note of caution: When implicit domain restriction is available, unlicensed parasitic gaps might appear to be possible.

- (28) a. I read an article from John's library before reading a book.
b. I read an article__ before reading a book from John's library.
- (29) I read a book about John before reading an article.
b. I read a book from John's library before reading an article.
(bad with implicit domain restriction)
(bad with implicit domain restriction)

4.2 Properties of QR (of the source NP)

4.2.1 Scope of the source NP

- (30) a. I discussed an argument that Chomsky developed before you did.
b. I discussed an argument before you did that Chomsky developed.
b. I discussed an argument before you did that Chomsky's recent theory is right.

- (31) a. They are looking in vain for a book in vain by Ronald Reagan. (The guy can't write)
 b. #They are looking for a book in vain by Ronald Reagan. (The guy can't write)
 c. They are looking for a book in vain about Irene Heim. (She wouldn't grant the interview.)
- (32) a. The teacher must discuss no evidence that was discovered by Darwin .
 b. The teacher must discuss no evidence in order to please the school board that was discovered by Darwin. (Inappropriate in Kansas)
 c. The teacher must discuss no evidence in order to please the school board that Darwin's theory might be right.
- (33) a. Bill hopes to have many ideas quite desperately about Binding theory.
 b. *Bill hopes to have many ideas quite desperately that are about Binding theory.
- (34) a. Bill wants there to be a lot of evidence very desperately that his theory is right.
 b. * Bill wants there to be a lot of evidence very desperately that supports his theory.
- (35) *"Free choice" any is licensed in the scope of the verb look for.*
 a. I looked very desperately for any clue that the detective might have overlooked.
 b. *I looked for any clue very desperately that the detective might have overlooked.
 c. I looked for any clue very desperately that the detective might have overlooked important evidence.

4.2.2 QR in co-ordination

QR of QP out of a conjunct A (in a structure A & B) is possible iff QP binds a variable in B (Ruys 1992). Extraposition behaves as expected under the QR analysis presented here.

- (36) a. \uparrow A (#different) student $\overbrace{[[likes\ every\ professor] \text{ and } [hates\ the\ dean]]}^{(\exists > \forall)}$ $*(\forall > \exists)$
 b. \uparrow A (different) student $\overbrace{[[likes\ every\ professor]_i \text{ and } [wants\ him_i\ to\ be\ on\ his\ committee]]}^{(\exists > \forall)}$ $(\forall > \exists)$
- (37) a. ??I wanted to [present an argument_i___] and [talk about its_i consequences] very badly that John told me about.
 b. *I wanted to [present an argument ___] and [talk about these consequences] very badly that John told me about.
 c. *I wanted to [present an argument_i___] and [talk about its_i consequences] very badly that what John told me is right.
- (38) a. ??I wanted to [read a book_i___] and [meet its_i author] very badly from the library we visited last year.
 b. *I wanted to [read a book ___] and [meet this author] very badly from the library we visited last year.

- c. *I wanted to [read a book_i___] and [meet its_i author] very badly about the museum we visited last year.
- (39) a. ??I wanted to [study an approach_i___] and [understand its_i consequences] very badly that was developed for the study of extraposition.
- a. *I wanted to [study an approach_i___] and [understand your paper] very badly that was developed for the study of extraposition.
- b. *I wanted to [study an approach_i___] and [understand its_i consequences] very badly to the study of extraposition.

Conclusions:

- Complement extraposition has properties of movement (of the extraposed material), whereas Adjunct extraposition doesn't.
- We therefore need a derivation for adjunct extraposition that does not involve movement. The copy theory along with the phonological theory of QR provides us with this derivation.
- Adjunct extraposition is the result of post QR adjunct insertion. There are very intricate predictions derived from properties of QR (scope and the behavior of QR in coordination). These predictions appear to be correct.
- The post-QR insertion of extraposed adjuncts is a case of an “overt” (= pronounced) operation following a “covert” (= silent) movement. We therefore have a strong empirical argument against the traditional Y-model of the grammar, and in favor of an alternative in which syntax intersperses pronounced operations with silent ones (perhaps a representational view along the lines of Brody).

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