

## XII. LINGUISTICS\*

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### A. A CLASS OF COMPLEX MODIFIERS IN ENGLISH

#### 1. Relative Adjectival Clause

Two transformations can follow the relative clause transformation, when the sentence occurring as relative clause has the form "N is A (+ Complement)." These transformations bring adjectives into prenominal and postnominal position under the appropriate conditions: they constitute the NA → AN rule.

##### A: Relative Clause

Description: S<sup>1</sup>: X N Y  
                  1 2 3

S<sup>2</sup>: N is A (+ Complement)  
          4 5                   6

Condition: 2 = 4

Change: 1 + 2 + wh\_ is + 6 + 3

##### B: Deletion of "wh\_ is"

1. Description: X N wh\_ is A Y  
                  1 2       3   4 5

Change: 1 + 2 + 3 + 4 + 5 → 1 + 2 + 4 + 5

2. Description: X (Predet) + Indef + N wh\_ is Adj Phrase Y  
                  1                   2                   3                   4                   5  
  Det

Change: same as 1

##### C: Order Change: NA → AN

Oblig 1. Description: X + (Det) Y + N A Z  
                                  1                   2   3 4

Condition: 2 ≠ some-, any-

Change: 1 + 2 + 3 + 4 → 1 + 3 + 2 + 4

Opt 2. Description: X (Predet) Indef Y N A Verbal Z  
  Det       3 4   5   6  
  Comp

Change: 1 + 2 + 3 + 4 + 5 + 6 → 1 + 2 + 4 + 3 + 5 + 6

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The rules allow deletion of "wh\_ is" for any relative clause of the form "N is A"; if the deletion rule (B) is applied to such clauses, the order-change rule (C) is obligatory.

When the shared noun has the definite article, and the relative clause has the form "N is A + Complement" (i.e., an adjectival phrase follows "is"), rules B and C cannot be applied. To put it positively, the deletion and order-change rules apply to relative clauses of the form "N is A + Complement" only when the N has the indefinite article.

The following types of sentences are affected by these rules:

- A: He served  $\left\{ \begin{matrix} \text{the} \\ \text{a} \end{matrix} \right.$  punch which was tasty but lethal.  
(rel: N is A)
- B: I bought  $\left\{ \begin{matrix} \text{the} \\ \text{a} \end{matrix} \right.$  book which was yellow with age.  
(rel: N is A + Comp)
- C: I met  $\left\{ \begin{matrix} \text{the} \\ \text{a} \end{matrix} \right.$  man who was taller than George.  
(rel: N is A + Comp<sub>verbal</sub>)
- D: John has  $\left\{ \begin{matrix} \text{the} \\ \text{a} \end{matrix} \right.$  car which is too old to sell.  
(rel: N is A + Comp<sub>verbal</sub>)
- E: Here is  $\left\{ \begin{matrix} \text{the} \\ \text{a} \end{matrix} \right.$  man who is easy to please.  
(rel: N is A + Comp<sub>verbal</sub>)
- F: I have  $\left\{ \begin{matrix} \text{the} \\ \text{a} \end{matrix} \right.$  car which is so old that I cannot sell it.  
(rel: N is A + Comp<sub>verbal</sub>)

When the rules are applied to sentence A the following sentences and ungrammatical sequences result:

- A: 1 – He served a punch tasty but lethal. (Rule B)  
2 – \*He served the punch tasty but lethal. (Rule B)  
3 – He served a tasty but lethal punch. (Rule C)  
4 – He served the tasty but lethal punch. (Rule C)

When sentences have relative clauses of the form "N is A + Comp" the rules apply somewhat differently. Deletion and order change result in ungrammatical sequences when the noun shared by containing and contained (relativized) sentences has the definite article, as indicated below. It must be specified that rule 2C apply only when the adjectival complement is verbal, so that ungrammatical sequences like B3 are excluded.

- B: 1 – I bought a book yellow with age. (Rule B)  
 2 – \*I bought the book yellow with age. (Rule B)  
 3 – \*I bought a yellow book with age. (Rule C)
- C: 1 – John has a car too old to sell. (Rule B)  
 2 – \*John has the car too old to sell. (Rule B)  
 3 – John has too old a car to sell. (Rule C)  
 4 – \*John has too old the car to sell. (Rule C)
- E: 1 – Here is a man easy to please. (Rule B)  
 2 – \*Here is the man easy to please. (Rule B)  
 3 – Here is an easy man to please. (Rule C)  
 4 – \*Here is the easy man to please. (Rule C)
- F: 1 – I have a car so old that I cannot sell it. (Rule B)  
 2 – \*I have the car so old that I cannot sell it. (Rule B)  
 3 – I have so old a car that I cannot sell it. (Rule C)  
 4 – \*I have so old the car that I cannot sell it. (Rule C)

The principle in operation here seems to be that when a noun has the definite article its adjectival modifiers must precede it. When a modifier is an adjectival phrase, then, all of which cannot precede a noun, it can be associated with its noun only by a relative clause.

Adjectives always precede nouns except, strikingly, in the case of the indefinite pronouns "someone," "anything," and so forth. If rule B (deletion of "wh\_ is") is applied to a sentence with a relative clause, when the shared nominal is one of the indefinite pronouns, rule C (order change) does not apply.

- F: 1 – The police are dealing with someone who is bold. (Rule A)  
 2 – The police are dealing with someone bold. (Rule B)  
 3 – \*The police are dealing with bold someone. (Rule C)

Adjectives are not restrictive enough alone to determine definiteness or indefiniteness. They are affected only by the extreme cases such as those of the indefinite pronouns, when adjectives must follow. The converse of this is the rule for occurrence of the superlative adjective, which is itself definite and occurs only with nouns having the definite article. As might be expected, the superlative adjective must either precede a noun or be associated with it by a relative clause.

- G: 1 – They chose the student who was smartest in the class. (Rule A)  
 2 – \*They chose the student smartest in the class. (Rule B)  
 3 – They chose the smartest student in the class. (Rule C)

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Noun phrases in which a noun with the definite article is followed by an adjectival phrase do sometimes occur in sentences; such sentences are odd but perfectly intelligible. In them the definite article is used paradoxically, to mean a noun that is not particularized. The indefinite article can, in fact, be substituted for the definite article without change of meaning – the effect is rather a loss of intensity (the resulting sentence being no longer odd).

- H: 1 – The weapon deadlier than the H-bomb will never be launched.  
2 – A weapon deadlier than the H-bomb will never be launched.

### 2. Comparatives

Sentences containing comparisons (by comparative we understand adjectives inflected with 'er,' or variants thereof, which have a syntactically dependent complement introduced by 'than' or 'as') can be accounted for if one rule – for the comparative conjunction itself – is added to the system of rules given above. Comparisons are brought into other sentences as adjectival phrases whose complements are verbal by the relative, deletion, and order-change rules. The adjectival phrases with verbal complements are forms such as "easy to please," and the grading adjectival modifiers "too...to," "so...that," and "er...than" (for simplicity 'er...than' will be used for comparatives in general).

The comparative morphemes are of two types, which have different structural requirements. In both cases the required structure is formed by deletion of the second half of a conjunction.

Type 1: more (-er)...than	Type 2: more...than (but not inflected -er)
as...as	rather...than
less...than	less...than

When sentences are conjoined by the morphemes of type 1, the conjunction is subject to deletion only if an identical adjective occurs in both. If this is the case, the adjective must be deleted in the second sentence, and, after deletion of the adjective, 'is' (if it has the same form in both sentences) may be reduced or deleted.

- \*Joan is smarter than Clem is smart.  
Joan is smarter than Clem (is).  
Joan is smarter than she is pretty.

Sentences can be conjoined by the type 2 morphemes only if they have the same subject; after conjunction the second sentence must be reduced so that only the adjective remains. Thus although the morphemes 'more...than' and 'less...than' are homonymous, comparative sentences in which they occur are not: in conjunctions with type 2

morphemes the second sentence is reduced to a single adjective, whereas sentences with type 1 morphemes are reduced quite differently.

\*The sun is bright rather than the sun is hot.

The sun is bright rather than hot.

The sun is less bright than hot.

\*The sun is hotter than bright.

A rule to produce comparative conjunctions must provide for the operations of conjunction and deletion, under appropriate circumstances. The rule will have this form:

Comparative Conjunction

Va: verbs that can be followed by Adjective, such as seem, appear, become, grow

Vc: verbs that can be followed by (that) + S, such as think, wish, believe, expect

as...as: comparative morphemes of type 1 (less...than, as...as, more...than)

rather...than: comparative morphemes of type 2 (less...than, rather...than, more...than)

Elements specified only as "X", "Y", etc. may be null.

1a. Conjunction (1)

Description:  $\underline{S}^1$ : NP  $\left\{ \begin{array}{l} \text{is} \\ V_a \end{array} \right.$  A X;  $\underline{S}^2$ :  $\underbrace{(\text{NP}+V_c)}_5$  NP  $\left\{ \begin{array}{l} \text{is} \\ V_a \end{array} \right.$  A Y

1 2 3 4 5 6 7 8

Change: 1 + 2 + 3 + 4

5 + 6 + 7 + 8 + as...as  $\rightarrow$  1 + 2 + as 3 4 as + 5 + 6 + 7 + 8

1b. Description:  $\underline{S}^1$ : NP  $\left\{ \begin{array}{l} \text{is} \\ V_a \end{array} \right.$  A;  $\underline{S}^2$ : NP  $\left\{ \begin{array}{l} \text{is} \\ V_a \end{array} \right.$  A

1 2 3 4 5 6

Condition: NP<sub>1</sub> = NP<sub>2</sub>

Change: 1 + 2 + 3

4 + 5 + 6 + rather than  $\rightarrow$  1 + 2 + 3 + rather than + 4 + 5 + 6

2. Deletion; obligatory

a.

Description: NP  $\left\{ \begin{array}{l} \text{is} \\ V_a \end{array} \right.$   $\underbrace{\text{as A}}_2$  X  $\underbrace{\text{as } (\text{NP}+V_c)}_3$  NP  $\left\{ \begin{array}{l} \text{is} \\ V_a \end{array} \right.$  A Y

1 2 3 4 5

Condition: A<sub>1</sub> = A<sub>2</sub>

Change: 1 + 2 + 3 + 4 + 5  $\rightarrow$  1 + 2 + 3 + 5

b.

Description: NP  $\left\{ \begin{array}{l} \text{is} \\ V_a \end{array} \right.$  A X rather than NP  $\left\{ \begin{array}{l} \text{is} \\ V_a \end{array} \right.$  A Y

1 2 3 4

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Change:  $1 + 2 + 3 + 4 \rightarrow 1 + 3 + 4$

3. Deletion; optional

a.

Description: NP  $\left\{ \begin{array}{c} \text{is} \\ \text{V} \\ \text{a} \end{array} \right.$  as A X as NP  $\left\{ \begin{array}{c} \text{is} \\ \text{V} \\ \text{a} \end{array} \right.$  Y  
 $\underbrace{\hspace{1.5cm}}_1 \quad \underbrace{\hspace{1.5cm}}_2 \quad \underbrace{\hspace{0.5cm}}_3 \quad \underbrace{\hspace{0.5cm}}_4 \quad \underbrace{\hspace{1.5cm}}_5 \quad \underbrace{\hspace{0.5cm}}_6$

Condition:  $1 = 5$ , X and Y non-null

Change:  $1 + 2 + 3 + 4 + 5 + 6 \rightarrow 1 + 2 + 3 + 4 + 6$

b.

Description: NP  $\left\{ \begin{array}{c} \text{is} \\ \text{V} \\ \text{a} \end{array} \right.$  as A X as NP  $\text{V}_c$  NP is Y  
 $\underbrace{\hspace{3.5cm}}_1 \quad \underbrace{\hspace{1.5cm}}_2 \quad \underbrace{\hspace{0.5cm}}_3 \quad \underbrace{\hspace{0.5cm}}_4$

Change:  $1 + 2 + 3 + 4 \rightarrow 1 + 2 + 4$

c.

Description: NP W + Af as A X as(NP  $\text{V}_c$ ) NP Y# Z  
 $\underbrace{\hspace{0.5cm}}_1 \quad \underbrace{\hspace{1.5cm}}_2 \quad \underbrace{\hspace{3.5cm}}_3 \quad \underbrace{\hspace{0.5cm}}_4 \quad \underbrace{\hspace{0.5cm}}_5$

Condition:  $2 = 4 + 5$

If 3 includes NP  $\text{V}_c$ ,  $4 \neq \text{null}$

Change:  $1 + 2 + 3 + 4 + 5 \rightarrow 1 + 2 + 3 + 4$

The conjunction and obligatory deletion rules will form sentences such as:

(Rule 2a) John is taller than Bill is.

John is taller than you think he is.

(Rule 2b) The sun is bright rather than hot.

The optional deletion rules will form sentences such as:

(Rule 3a) The color is prettier in the shadow than in the light.

(Rule 3b) John is taller than you think.

(Rule 3c) John is taller than Bill.

The play will be better than you think it will.

The transformational history of a sentence containing a comparison shows the application to underlying sentences of the comparative conjunction rule and the relative clause, deletion, and order-change rules. If the members of the comparative conjunction are themselves complex, other transformations may precede the comparative. The following example shows the development of a sentence in which all of the rules apply and, in addition, two transformations precede the application of the comparative rule.

I: John has a bigger car than Bill has.

Underlying Sentences	Operations	Resulting Sentences
1 - Bill has a car.	→ A: nominalization	→ a - The car that Bill has...
2 - The car is big.	→ B: relative: 2 a	→ b - The car that Bill has is big.
3 - The car is big.	→ C: comparative conjunction: 3 b	→ c - The car is bigger than the one that Bill has is big.
	D: oblig deletion	→ d - The car is bigger than the one that Bill has is.
4 - John has a car.	→ E: relative: 4 d	→ e - John has a car that is bigger than the one that Bill has is.
	F: opt deletion of relative	→ f - John has a car bigger than the one that Bill has is.
	G: order change	→ g - John has a bigger car than the one that Bill has is.
	H: oblig deletion	→ h - John has a bigger car than the one that Bill has.
	I: opt deletions	→ i - John has a bigger car than Bill has.

In this example one of the members of the comparative conjunction has the same underlying form as the sentence containing it. The subject of sentence b – one of the sentences conjoined by the comparative rule – is a nominalization of sentence 1; sentence 1 has the same form as sentence 4, which contains the comparative conjunction. When optional deletions (operation I) have been performed, the similar underlying sentences occur more fully in the final sentence than do the intermediate forms.

When a contained comparison is so reduced that an underlying sentence similar to the containing sentence occurs, further reduction is possible. The verb phrase may be reduced step by step (if it contains auxiliaries) and/or deleted altogether. This operation is parallel to the optional reduction of the second verb phrase in comparative conjunctions. Thus sentence I,

1 - John has a bigger car than Bill has  
can be further reduced:

2 - John has a bigger car than Bill.

And sentences with more complicated verb phrases can be reduced in the same manner.

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- J – 1 – Steve has been getting better marks than Jim has been getting.
- 2 – Steve has been getting better marks than Jim has been.
- 3 – Steve has been getting better marks than Jim has.
- 4 – Steve has been getting better marks than Jim.

A comparative conjunction contained in another sentence need not, however, have a member with the same underlying form as the containing sentence. In a sentence like

K – He climbed a higher mountain than Everest

the members of the comparison are:

- A mountain is high.
- Everest is high.

They have no structure beyond "N is A," and the optional deletion rule that laid bare similar underlying sentences in the preceding example does not apply (nor do the following rules for reduction).

The occurrence of contained comparisons that may or may not have members with the same underlying form as the containing sentence; and the optional deletion rules together predict the occurrence of ambiguous sentences. Sentence L has two different structural descriptions.

- L – I have a smarter brother than Evan.
- Containing sentence: I have a brother.
- Contained comparison 1: The brother is smarter than Evan.
- Contained comparison 2: The brother is smarter than the brother Evan has.

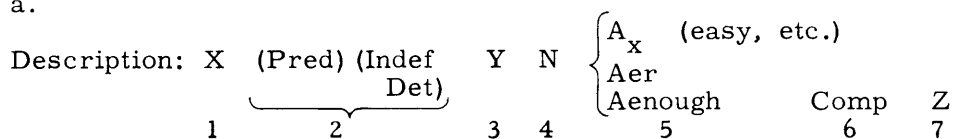
3. Adjective Embedding

The relative clause and deletion rules (A and B) were presented in full at the beginning of this report. Rule C, which requires some detail, follows.

(The only compared adjectives that have verbal complements are those with type 1 morphemes. In the following rules only type 1 morphemes will occur: "as...as," "er...than." The form "er...than" will refer to "more...than," "-er...than," and "less...than.")

Rule C: Order Change

- 1. Same as C1.
- 2. Optional: NA Comp → A N Comp
- a.





Change: 1 + 2 + 3 + 4 + 5 + 6 + 7 → 1 + 2 + 5 + 3 + 4 + 6 + 7

b.

Description: X NP  $\left\{ \begin{array}{l} \text{as} \\ \text{too} \\ \text{so} \end{array} \right.$  Comp Y  
                   1 2 3 4 5

Change: 1 + 2 + 3 + 4 + 5 → 1 + 3 + 2 + 4 + 5

Adjective phrases that are not verbal, such as "yellow with age," "tired of games," and so forth, and occur with indefinite article nouns are left, as they should be, following the noun. Here we have specified the class of adjectives that take verbal complements. It might be more effective because of idioms like "easy on the eyes," "easy in her ways" (as opposed to "easy to please"), to specify instead that the complement of a movable adjective must be verbal.

### 3. Obligatory deletions after 2

a1.

Description: X  $\left\{ \begin{array}{l} \text{(T) Aer} \\ \text{as A (T)} \end{array} \right.$  Y N  $\left\{ \begin{array}{l} \text{than} \\ \text{as} \end{array} \right.$   $\underbrace{(\text{NPV}_c)}_3$  NP is Z  
                   1 2 3 4 5

Change: 1 + 2 + 3 + 4 + 5 → 1 + 2 + 3 + 5

a2.

Description: X  $\left\{ \begin{array}{l} \text{(T) Aer} \\ \text{as (T)} \end{array} \right.$  Y N  $\left\{ \begin{array}{l} \text{than} \\ \text{as} \end{array} \right.$   $\text{NPV}_c$  NP  $\underbrace{\text{NP VP}}_5$   
                   1 2 3 4 5

Change: 1 + 2 + 3 + 4 + 5 → 1 + 2 + 3 + 5

b.

Description: X  $\left\{ \begin{array}{l} \text{too A (T)} \\ \text{(T)A enough} \end{array} \right.$  Y N  $\underbrace{\text{for N}}_3$   $\underbrace{\text{to V}}_4$  Z  
                   1 2 3 4 5

Condition: N in '3' = N occurring in '1'

Change: 1 + 2 + 3 + 4 + 5 → 1 + 2 + 4 + 5

Rules 2 and 3 will form sentences such as the following:

(Rule a1) John wrote as good an exam as the one Bill wrote.

(Rule a2) He has a better voice than I thought he had.

(Rule b) The contractor built too flimsy a house to sell.

### 4. Optional transformations

a1 and a2: Deletion

Description: same as 3b

Condition: only one of a1 and a2 may be applied

Change: a1: 1 + 2 + 3 + 4 + 5 → 1 + 2 + 4 + 5

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a2: 1 + 2 + 3 + 4 + 5 → 1 + 2 + 3 + 5

b. Deletion

Description: X  $\left\{ \begin{array}{l} (T) \text{ Aer} \\ \text{as A(T)} \end{array} \right.$  Y N  $\left\{ \begin{array}{l} \text{than} \\ \text{as} \end{array} \right.$  NP(that) NP VP Z  
 1 2 3 4 5

Condition: N in '4' = N occurring in '1'

Change: 1 + 2 + 3 + 4 + 5 → 1 + 2 + 4 + 5

c. Deletion

Description: X  $\left\{ \begin{array}{l} (T) \text{ Aer} \\ \text{as A(T)} \end{array} \right.$  Y N  $\left\{ \begin{array}{l} \text{than} \\ \text{as} \end{array} \right.$  NPV<sub>c</sub> NP VP  
 1 2 3 4

Change: 1 + 2 + 3 + 4 → 1 + 2 + 3

d1. Substitution of 'do'

Description: X VP Y  $\left\{ \begin{array}{l} (T) \text{ Aer} \\ \text{as A(T)} \end{array} \right.$  Z N  $\left\{ \begin{array}{l} \text{than} \\ \text{as} \end{array} \right.$  (NPV<sub>c</sub>) NP VP W  
 1 2 3 4 5 6

Condition: 2 = 6

Change: 1 + 2 + 3 + 4 + 5 + 6 → 1 + 2 + 3 + 4 + do + 6

d2. Order Change

Description: X VP Y  $\left\{ \begin{array}{l} (T) \text{ Aer} \\ \text{as A(T)} \end{array} \right.$  Z N  $\left\{ \begin{array}{l} \text{than} \\ \text{as} \end{array} \right.$  NP do W  
 1 2 3 4 5 6

Change: 1 + 2 + 3 + 4 + 5 + 6 → 1 + 2 + 3 + 5 + 4 + 6

e. Reduction of verb phrase

Description: X  $\underbrace{W + Af}_2$  Y  $\left\{ \begin{array}{l} (T) \text{ Aer} \\ \text{as A(T)} \end{array} \right.$  Z N  $\left\{ \begin{array}{l} \text{than} \\ \text{as} \end{array} \right.$  (NPV<sub>c</sub>) NP R# S  
 1 2 3 4 5

Condition: 2 = 4 + 5

1 + 3 includes NPV<sub>c</sub>, 4 ≠ null

Change: 1 + 2 + 3 + 4 + 5 → 1 + 2 + 3 + 4

The optional transformations just listed will form sentences such as these:

- (Rule a) She wrote too crabbed a hand to read.
- (Rule b) John wrote as good an exam as Bill wrote.
- (Rule c) He has a better voice than I thought.
- (Rule d) John got a better bargain than I did.
- (Rule e) John has written better papers than Bill has.

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(Footnote on following page)

Footnote

1. A condition must be imposed which will exclude the conjunction of certain combinations of verbs. For instance, the sentence "He appears better than he seems," when both verbs are of the class  $V_a$ , is ungrammatical; "He is better than he becomes" is ungrammatical, but we must allow "He seems better than he is." A further condition allowing only certain combinations of tenses in sentences with container verbs must also be made. For instance, "John is taller than you think he is" is grammatical, but "John will be taller than you thought he was" is not.

