

Back to the Future: 1960-1970

1. "Recursion in the base"

Suppose generalized transformations that embedded clauses in larger structures are strictly ordered w.r.t. other transformations. We find an ordering paradox:

- (1) **Passive > *there***
 - a. A teacher was reading a book .
 - b. There was a teacher reading a book.
 - c. A book was being read by a teacher.
 - d. There was a book being read by a teacher.

- (2) **Passive > *there* > Raising to object**
 - a. John believed there to be a teacher reading a book .
 - b. John believed there to be a book being read by a teacher.

- (3) **Passive > *there* > Raising to object > Passive**
 - a. There was believed (by John) to be a teacher reading a book .
 - b. There was believed (by John) to be a book being read by a teacher

- (4) **Passive > Raising to object > Passive > *there***
 [John believed someone to be reading a book ->
 Someone was believed to be reading a book -->]
 There was someone believed to be reading a book.

Solution 1: cyclic application of transformations, with clausal embedding the last rule of the cycle, or...

Solution 2: Clausal cycle + recursion in the base

2. Katz-Postal Hypothesis

Selectional restrictions imposed before transformations such as passive ==>
 a pre-transformational, lexically governed "pure" representation of
 semantic properties projected from lexical items.

Possibility: Some semantics is projected from Deep Structure (PS tree + inserted lexical items)

Katz-Postal Hypothesis: All semantics is projected from Deep Structure.

Therefore (corollary):

Transformations do not "change meaning" (cf. Chomsky's 1990s criterion of "inclusiveness")

Therefore (corollary):

If a transformation seems to change meaning, either:

- (i) it doesn't exist (e.g. T_{NEG}); or
- (ii) a trigger for the transformation, present in the base is what introduced the extra semantic content.

Example:

***wh*-movement (something->what + movement) triggered by a Q-morpheme.**

"Given a sentence for which a syntactic derivation is needed; look for simple paraphrases of the sentence which are not paraphrases by virtue of synonymous expressions; on finding them, construct grammatical rules that relate the original sentence and its paraphrases in such a way that each of these sentences has the same sequence of underlying P-markers. Of course, having constructed such rules, it is still necessary to find *independent syntactic justification* for them." (K&P 1964, 157; Newmeyer p. 71)

3. KP Hypothesis in the natural order of things

Since it is a fact that the presence/absence of movement often correlates with semantic properties, there is a natural link between 1 and 2:

1. movement is triggered <--> 2. interpretation is pre-movement.

- The Katz-Postal hypothesis says yes to both.
- GB theory said no to both.
- Chomsky's 1995 Minimalism yes to 1, and no to 2. Stipulates inclusiveness.

Other possibilities?

4. Lexical items

Lakoff, *Irregularity in Syntax* (published 1970, but written in 1965)

- Causative predicates show uniformities of selection for their subjects s.t. an *Aspects* model is simplified if these predicates are bimorphemic.
- This means certain morphemes are marked as obligatorily coalesced with others. The rules that do this are a subset of the "Minor Rules" (rules that "apply only to exceptions") - a category that also includes allomorphy rules (*foot/feet*) etc.

Example: *persuade* means 'intend', but is constrained so it must meet the SD of a CAUSATIVE rule and must undergo it.

- (5) John [+V +CAUSATIVE +PRO] [NP [S Harry [persuade 'intend' *m* SD CAUSATIVE, *m* R CAUSATIVE. *m* ID-NP DEL]]

Example: *dissuade* means 'not intend'.

- (6) John [+V +CAUSATIVE +PRO] [NP [S Harry [persuade 'intend', NEGATIVE, *m* SD CAUSATIVE, *m* R CAUSATIVE. *m* ID-NP DEL]]

Example: *kill* is inchoative 'dead' marked to undergo obligatory causativization.

Pesetsky (1994) *Zero Syntax* revives some of this.

- (7) Against biclausal analysis
#John killed Bill on Tuesday by poisoning him on Sunday. (Fodor)
- (8) For biclausal analysis
Sue closed the window for three minutes. (Klein)

McCawley (1968) [among others]

- Why not discard the minor rules, and identify the predicates of Deep Structure with elements more abstract than the words of the language:
 - Predicate Raising "applies to trees which terminate in semantic matter rather than in lexical matter".
 - Consequence: semantics might be interpretive (off Deep Structure) in name only. Where once we had Deep Structure, now we *have* a semantic representation.
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"Lexical decomposition"

- (9) Sam likes lox more than herring or whitefish. (*or = and*)

- (10) Sam prefers lox to herring or whitefish (*or = and*)

Therefore: *like X more than* ==> *prefer X to*.

Independent evidence that *to* is a transform of *than* with *prefer*:

- (11) a. What does Sam like bagels more than?
b. *Than what does Sam like bagels more?
- (12) a. What does Sam prefer bagels to?
b. *To what does Sam prefer bagels?
- (13) ? God is that to which I prefer only bagels.

Consequences for syntactic categories

The fact that nominalizations share selectional properties with sentences supports the hypothesis that nominalizations are transformationally derived from S:

- (14) a. America attacked Cuba.
b. America's attack on Cuba.
c. the American attack on Cuba.

Differentiation into syntactic category is a result of application of a syntactic transformation.

[Quiz question: And do the differences among categories motivate a trigger for the transformation? Sound familiar?]

Chomsky: "Remarks on Nominalization": But NPs have NP (internal and external) syntax -- the syntax characteristic of all NPs, including non-nominalizations.

GS: All NPs are nominalizations (*dog = x such that dog(x)*)

Chomsky: But this syntax conforms to cross-categorical generalizations about the PS rules.

[GS: We have to accept global rules anyway...]*
[*I'm not quoting anyone here.]

But: Yiddish-movement ("Y-movement") does not obey (17).

(21) Sarah Weinstein isn't fond of many boys. [NEG > *many*]

(22) Fond of many boys, Sarah Weinstein isn't. [NEG > *many*]

- Claim: These data show that (17) holds of a block of rules that includes Q-lowering and Passive but not Y-movement.

(23) **New model (to be knocked down):**

[PS rules] > [lexical insertion] >
 [cyclic rules, including passive and Q-lowering, obeying (17)]
 > SHALLOW STRUCTURE > ... Y-movement ...

But downstairs negation raised to a position inside a lexical item seems to disobey (revised) (17), just like Yiddish movement.

Assume: X persuaded Y not to VP --> X dissuaded Y from VPing

(24) I dissuaded Bill from dating many girls. [NEG>*many*]

(25) I dissuaded many girls from dating Bill. [*NEG>*many*]

- Example (24) shows NEG > *many*, but (25) cannot.
- Makes sense, if the negative component of *dissuade* starts out in the lower clause, and its raising makes no contribution to semantic interpretation.
- But the negation-raising rule now follows Shallow Structure.
- Lakoff's Conclusion: Lexical insertion is late, and Deep Structure does not exist.

His words:

- (i) Suppose 'deep structure' is defined as a stage in a derivation which follows the application of all lexical insertion rules and precedes the application of any upward-toward-the surface cyclic rules.
- (ii) Evidence was given for derivational constraints 1 and 2, which relate semantic command-relationships to precede- and command-relationships at some level of 'derived structure'.
- (iii) But the passive transformation must precede the insertion of lexical items such as *dissuade, prohibit, prevent, keep, etc.* [because it precedes shallow structure, where (17) is checked, which in turn precedes the neg-raising that yields *dissuade, prevent etc.*].
- (iv) Since passive is an upward-toward-the-surface cyclic rule, (iii) shows that the concept of 'deep structure' given in (i) cannot be maintained.

[p. 253]

6. Lakoff "Global Rules"

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Please see:

Lakoff, George. "Global rules." *Language* 46 (1970): 627-639. Excerpt of last two paragraphs on page 627.

7. Global rules: Classical Greek agreement

Lakoff

- (26) Τα•τα δ•καια •στ•ν.
These-things-NomPl just-NomPl is [sic]
- (27) **Raising to subject**
Τα•τα λ•γεται [δ•καια ε•ναι].
These-things-NomPl is-said just-NomPl to-be
[sic]
- (28) **ECM (raising to object)**
•σμεν τα•τα λεγ•μενα [δ•καια ε•ναι].
We-know these-things-Acc-Pl said-AccPl(part.) just-AccPl to-be
- (29) **Free relative case attraction (*wh*-phrase bears upstairs-governed case)**
Εμμ•νομεν ο•ς •σμεν λεγομ•νοις [δικα•οις ε•ναι].
We-abide-by what-DatPl we-know said-DatPl(part.) just-DatPl to-be
- (30) **Greek agreement global rule**
In surface structure, an adjective or participle must agree in case with the noun phrase that was its derived subject at the end of the first cycle on the innermost S containing that adjective or participle [*even in instances where case attraction in a relative clause has applied to the former subject*].
[Lakoff 1970 "Global Rules", p. 629]

"Thus, it should be clear that the rule of case agreement in Greek cannot be stated as a transformation, but instead must be stated in terms of conditions on corresponding nodes at widely separated points in a derivation."

NB: When case attraction applies, the attracted NP is no longer *in any sense* a downstairs subject.

Baker and Brame

Baker and Brame: Assume two rules:

1. "a rule that gives nouns and their modifying participles or adjectives an index which marks them as having been in the same simple S at the end of the relevant cycle";
2. "a post-cyclic rule which assigns case to an adjective or participle on the basis of the case given to its co-indexed NP"

Lakoff replies to Baker and Brame:

"[Rule 1] is in fact not a transformation...Transformational rules that insert things would have to insert either (1) a copy of some constituent already in the tree, or (2) a constant... What B&B have proposed is not a transformational rule at all, but an elaborate global coding mechanism. The purpose of this coding mechanism is simply to keep track of where certain elements which enter into an agreement rule were at an earlier stage of the derivation."

[Lakoff 1972, p. 77]

"Just about everybody (including B&B) agrees that classical transformational grammar is inadequate. By the scrupulous avoidance of arbitrary grammatical elements, we have gained some insight into the source of the inadequacy. Rules of grammar must mention corresponding nodes in non-adjacent phrase-markers. In theories of grammar where arbitrary grammatical elements are avoided, rules of grammar must be global in nature."

[Lakoff 1972, p. 79]

Andrews

Interestingly, case is inherited under EQUI as well as movement.

- (31) Cyrus-GEN they-begged COMP most-devoted-GEN to-be
'they begged Cyrus to be as devoted to them as possible' [(3)]

Perhaps (p. 146) EQUI is movement of the controller followed by replacement of the controller with a [+DOOM] (i.e. phonologically empty) NP.

[hmmm...]

8. Global rules: *One*-pronominalization

- (32) **one-pronominalization < constraint on *one of NP***
 **one of NP* is blocked
- (33) **constraint on *one of N* < "Pseudo-adjective formation"**
 a. I bought the English car and Sam bought the Spanish one.
 ==> b. *I met the English king and Sam met the Spanish one.
 [on 'King of' Spain reading]
- (34) **constraint on *one of N***
 < obligatory deletion of *one* after numerals
 a. *I knew six girls from England and Irv knew five ones from Spain.
 b. I knew six girls from England and Irv knew five from Spain
 c. *I knew six kings of England and Irv knew five ones of Spain.
 ==> d. *I knew six kings of England and Irv knew five of Spain

But:

- (35) **optional late morphophonemic rule: *the ones* ==> *those***
 a. Max had known the girls from England and I had known the ones from Spain.
 b. Max had known the girls from England and I had known those from Spain
- (36) **The late rule in (35) bleeds (32), which has been shown to be early.**
 a. *Max had known the kings of England, and I had known the ones of Spain
 ==> b. Max had known the kings of England and Sam knew those of Spain.

Conclusion: (32) is inoperative if *ones* later disappears by morphophonemic rule.

The constraint must mention 2 separate points in the derivation, i.e. **the one of* unless a *particular* later process gets rid of *the one*.

Baker and Brame

- Where's the evidence that the rule in (35) exists and is late?
 - In fact, *that/those* can pronominalize *the* plus a mass noun, unlike *one*:
- (37) a. *The ivory from Africa is whiter than the one from India.
 b. The ivory from Africa is whiter than that from India.

Lakoff 2

[not to the point]

9. Contraction

Lakoff

- (38) **Constraint on contraction (King 1970)**
 If there is a constituent immediately following *be*, and if by any transformation that constituent is deleted, then the *be* cannot contract.
- (39) *I wonder how much wine there's in the bottle.
 [etc., Lakoff p. 631, (18)]

Argument:

- Stress-lowering and resultant contraction are in the phonology.
- Deletion and movement occur in the syntax.
- The phonological constraint must look back at the syntax.
 [p. 632]

- (40) **wanna contraction**
 [etc.]

Baker and Brame

"The relevant movement and deletion rules may be restated in such a way that they leave a special feature or boundary symbol behind in the place formerly occupied by the moved constituent. Lowering of stress on the finite auxiliary and contraction of *want to* are then blocked by the presence of the feature in question.."

General formulation: "Any language-particular rule which moves or deletes constituents leaves a special boundary symbol at the site of the missing constituent, and particular phonological rules may then be blocked by the presence of this boundary within the domain of the rule." [B&B p. 56]

Lakoff 2

"The only function of this device is to code the fact that certain phonological rules are sensitive to the occurrence of certain syntactic rules at some distant earlier point in the derivation....Again the stock of grammatical categories is increased by an arbitrary category, and the naturalness of the description is correspondingly decreased."

10.Sluicing

Lakoff

(41) **No island effects with sluicing**

- a. John saw someone, but I don't know who.
- b. Irv and someone were dancing, but I don't know who.
- c. Mary met a man who had worked for someone famous, but she wouldn't tell me who.

"Ross's constraints must not only mention the point in the derivation at which the movement rule applies, but they must also mention surface structure, since they depend on whether the island-forming node is present in surface structure."

Baker and Brame

"[Chomsky 1970 proposes] that when some island-forming node has a constituent moved out of it, a special symbol should be associated with the node in question, this symbol indicating that a violation has occurred. If this node is later deleted, as by Sluicing in the sentences under discussion, then the special symbol marking the violation is erased along with the node in question, and the resulting elliptical sentence is thereby predicted to be well-formed."

But anyway, deletion doesn't completely save the island violations.

Lakoff

Call Chomsky's feature [+BAD]. To account for B&B's report of shaded judgments, we'd need:

- (42) If +BAD was ever present in a derivation and subsequently deleted, then the sentence is partly ungrammatical.

-- "but (42) is a global rule..."

11.Postal: "A Global Constraint on Pronominalization"

(43) **Cross-over condition (first approximation)**

Mark as ill-formed all derivations in which there is a pronoun *A* to the left of a *wh* form *B* in those structures which are possible inputs to the *Wh* Movement rules, and in which *A* and *B* are coreferents. [Postal's (18)]

But actual (as opposed to potential) *wh*-movement matters:

- (44) a. Which columnist reported her_i victory to which actress's_i mother?
 b. What company had his_i wife spy on what well-known industrialist_i?
 [Postal's (24), judgments his]

(45) **Cross-over condition (Global Derivational Constraint)**

Mark as ill-formed any derivation in which:

- a. there are two nominal constituents, *A* and *B*, in the input structure of a *Wh* Movement rule, where:
 - (i) *A* is a pronoun
 - (ii) *B* is a *wh* form
 - (iii) *A* is to the left of *B*; and
- b. the corresponding constituents of *A* and *B* in the output structure of the *Wh* Movement rule, call them *A'* and *B'* respectively, are aligned such that *B'* is to the left of *A'*; and
- c. in the semantic representation, *A* and *B* (or, more precisely, their corresponding elements) are marked as stipulated coreferents.
 [Postal, (26)]

Appendix A:

One might encode in deep structure the fact that a structure containing a *wh*-phrase will or will not undergo *wh*-movement.

- (46) a. The newsman who criticized him_i later belted which official_i?
 [Legalistic question]
 b. *Which official_i did the newsman who criticized him_i later belt ___?

"The advocate of feature marking...might claim that there is some feature, say *G*, whose positive and negative values distinguish between such pairs. He might, for instance, claim that *G* is assigned to *wh* forms. Thus, he might say that, at the stage of input to the *Wh*-movement rules, *wh*-forms like those in sentences of the type [(46a)] are marked [-*G*], while those in sentences of the type (46b) are marked [+*G*]..."

[Postal, p. 51]

"...the point is not that the feature marking approach fails to provide a description in accord with the facts in this case, but rather that if arbitrary features are available, any possible Global Derivational Constraint can be reformulated in terms of a single level of structure..."

"The point should be clear. Marking structures with arbitrary features is not a way of avoiding Global Derivational Constraints. It is simply a way of coding these constraints in a pointless and obscuring notational framework, that of "features"..."

"A further point. The argument that the feature coding mechanism is empirically empty as a way of avoiding Global Derivational Constraints is obviously not affected if (instead of arbitrary features) one appeals to arbitrary dummy elements, that is, to segmental markers which are later deleted. These will provide the same power, and they burden the user only with the need to delete them at some point after statement of the constraints they have coded."

A factual argument against [+*G*]:

- (47) a. What press agent reported [the fact that she_{*j*} had won an Oscar] to what actress_{*j*}?
- b. *To what actress_{*j*} did Max report [the fact that she_{*j*}] had won an Oscar?

It's a general property of multiple *wh*-questions like (47a) in English that the second *wh* will not undergo *wh*-movement, so [-*G*] is redundant.

Therefore its only purpose here would be to get weak crossover right...

12. What ifs

- What if GS had developed the notion of a trigger for QR rather than the rule of quantifier lowering?
- What if GS had developed trace theory and the copy theory of movement?
- What if GS had interspersed move and merge and tried to hold onto as much of the KP hypothesis as such a model would allow (given Attract Closest, Activity Condition, etc.)?
- What if GS had investigated more carefully the nature of information transmission "downstream" that constituted evidence for global rules?