

### 7. OPTIMALITY THEORY AND SYNTACTIC TYPOLOGY

- (1) STAY: Trace is forbidden
- (2) OP-SPEC: Syntactic operators must be in specifier position

	OP-SPEC	STAY
☞ Who <sub>i</sub> did you see t <sub>i</sub>		*
You saw who	*!	

Tableau I: A language with overt *Wh*-Movement:

	STAY	OP-SPEC
Who <sub>i</sub> did you see t <sub>i</sub>	*!	
☞ You saw who		*

Tableau II: A language without overt *Wh*-Movement:

- (3) CASE: Move NP to a case-licensing position (canonical subject or object position)
- (4) WEIGHT: Postpose heavy NPs
- (5)
  - a. Mary regards John fondly.
  - b. ?Mary regards fondly John.
  - c. ?Mary regards all the students in her class in optimality theory fondly.
  - d. Mary regards fondly all the students in her evening class in optimality theory. (WEIGHT outranking CASE)

	WEIGHT	CASE
☞ [[S V [ <sub>VP</sub> Adv t] [Heavy NP]]		*
[S V [ <sub>AgrOP</sub> Heavy NP [ <sub>VP</sub> adv t t]]]	*!	

Tableau III

Weight effects dominating the Case requirement in English

- (6) PURITY OF EXTENDED PROJECTION (PURE-EP): No adjunction takes place to the highest node in a subordinate extended projection; and no movement takes place into the highest head of a subordinate extended projection.
- (7) CASE MARKING (CASE): DPs must be Case-marked
- (8) OBLIGATORY HEADS (OB-HD): A projection has a head.
- (9) ECONOMY OF MOVEMENT (STAY): Trace is not allowed

This ranking conspires to block movement:

Candidates (subordinate interrogatives)	PURE-EP	CASE	OB-HEAD	STAY
[ <sub>CP</sub> who should <sub>i</sub> [ <sub>IP</sub> we e <sub>i</sub> [ <sub>VP</sub> see t]]]	*!			**
☞ [ <sub>CP</sub> who e [ <sub>IP</sub> we should [ <sub>VP</sub> see t]]]			*	*
[ <sub>IP</sub> who should [ <sub>VP</sub> we see t]]		*!		*

Tableau IV: The surfacing of a low-ranked constraint

A. THE RESTRICTIVENESS PROBLEM . One frequently encounters the claim that a particular OT analysis is in some interesting sense ‘restrictive’, that is, that it follows from the analysis that logically possible, but nonoccurring, language types are excluded. Such claims tend to be empty.

B. THE FUNCTIONALITY PROBLEM. I discuss the attempt to provide substance to the idea that constraints are universal by requiring for each a functional motivation — and in that way uniting formal and functional linguistics. I argue that while identifying a ‘function’ for each OT constraint is trivially accomplishable, it is an undesirable ‘accomplishment’.

(10) DROPTOPIC: Leave arguments coreferent with the topic structurally unrealized. [failed by overt constituents which are coreferential with the topic]

(11) PARSE: Parse input constituents. [failed if an element of the input does not appear in the output] **PROHIBITS NULL ELEMENTS**

(12) ALIGN FOCUS: Align the left edge of focus constituents with the right edge of a maximal projection. [failed by non-aligned foci]

(13) FULL-INTERPRETATION Parse lexical conceptual structure [failed by expletives and auxiliary *do*]

(14) SUBJECT: The highest A-specifier in an extended projection must be filled [failed by clauses without a subject in the canonical position]

Input: <gridare (x), x=focus, x=Gianni>

Candidates	DROP TOPIC	PARSE	ALIGN FOCUS	FULL -INT	SUBJECT
☞ha gridato Gianni					*
Gianni ha gridato			*!		
ha gridato,, Gianni			*!		*
<b>ha gridato (CAN'T GET)</b>		*!			*
[null structure]		*!*			
expl. ha gridato Gianni				*!	

Tableau V

Italian focused subjects (Grimshaw and Samek-Lodovici 1998)

(15) DROPFOCUS: Leave arguments coreferent with the focus structurally unrealized. [failed by overt constituents which are coreferential with the focus]

Input: <V (x), x=focus, x=DP>

Candidates	DROP FOCUS	DROP TOPIC	PARSE	ALIGN FOCUS	FULL-INT	SUBJECT
AUX V DP	*!					*
DP AUX V	*!			*!		
AUX V,, DP	*!			*!		*
☞AUX V			*			*
[null structure]			*!*			
expl. AUX V DP	*!				*!	

Tableau VI

The derivation of null focused subjects

Newmeyer Handout #3

- (16) Q: Who broke the plate?  
A: You know who!
- (17) Q: Who broke the plate?  
A: e broke the plate. (INTERPRETATION: ‘You know who broke the plate’)
- (18) Q: Quem é que partiu o prato? (Portuguese)  
A: Partiu o prato?
- (19) Q (asked by somebody who most likely did it, but is trying to cover it up):  
Tko je razbio čašu (Serbo-Croatian)  
Who broke the glass?
- A (With an ironic intonation):  
Razbio, razbio  
Broke, broke (interpretation: ‘You know who did it — it was you’)

name	grammatical constraint	corresponding user constraint
STAY (Grimshaw 1997, Speas 1997)	“Do not move”	Leaving material in canonical position helps the hearer to identify grammatical relationships and reduces processing costs for the speaker
TELEGRAPH (Pesetsky 1998)	“Do not pronounce function words”	Leaving out function words reduces pronunciation costs for the speaker in a way that is minimally disruptive for understanding by the hearer
RECOVERABILITY (Pesetsky 1998)	“A syntactic unit with semantic content must be pronounced unless it has a sufficiently local antecedent”	Omitting a meaning-bearing element in pronunciation makes the hearer’s task of extracting the intended meaning from the speech signal very difficult unless it can be inferred from the context

Table I  
Some OT constraints and their possible functions

- (20) **Thematic Hierarchy** Agent > Beneficiary > Recipient/ Experiencer > Instrumental > Theme/ Patient > Location
- (21) **Relational Hierarchy** Subject > Direct Object > Indirect Object > Oblique > Genitive > Object of Comparative
- (22) **Animacy Hierarchy** 1<sup>st</sup> Person Pronoun > 2<sup>nd</sup> Person Pronoun > 3<sup>rd</sup> Person Pronoun > Proper Noun > Human Common Noun > Animate Common Noun > Inanimate Common Noun
- (23) **Person Hierarchy** Local (1<sup>st</sup>, 2<sup>nd</sup>) > 3<sup>rd</sup>

(24) **Prominence Hierarchy** Discourse Prominent > Not Discourse Prominent

(25) **Relational:** Subject > Object > Oblique

(26) **Person:** Local (1<sup>st</sup>, 2<sup>nd</sup>) > 3<sup>rd</sup>

(27) **Thematic Role:** Agent > Patient

(28) **Prominence:** Discourse Prominent (X) > Not Discourse Prominent (x)

- (29) a. \*Su/Pat  
 b. \*Su/x  
 c. \*Obl/Local

- (30) a. \*Su/Pat » \*Su/Ag  
 b. \*Su/Ag » \*Su/Pat

V(Agt/3/x,Pat/1/X)	*Su/x	*Su/Pat	*GR/Pers
ACTIVE Agt/Su/3/x-Pat/Oj/1/X	*!		**
☞PASSIVE Pat/Su/1/X-Agt/Obl/3/x		*	**

Tableau VII  
 English (prominent patient) (Aissen 1999: 689)

(31) **Animacy:** Human > Animate > Inanimate

(32) **Definiteness:** Personal Pronoun > Proper Noun > Definite NP > Indefinite Specific NP > Non-specific NP

- (33) a. \*Oj/Hum » \*Oj/Anim » \*Oj/Inam  
 b. \*Oj/Pro » \*Oj/PN » \*Oj/Def » \*Oj/Spec » \*Oj/NSpec

(34) \* $\emptyset_C$  'Star Zero': Penalizes the absence of a value for the feature CASE.

Local conjunction of * $\emptyset_C$ with the subhierarchy on object animacy (34a)	Local conjunction of * $\emptyset_C$ with the subhierarchy on object definiteness (34b)
*Oj/Hum & * $\emptyset_C$ » *Oj/Anim & * $\emptyset_C$ » *Oj/Inam & * $\emptyset_C$	*Oj/Pro & * $\emptyset_C$ » *Oj/PN & * $\emptyset_C$ » *Oj/Def & * $\emptyset_C$ » *Oj/Spec & * $\emptyset_C$ » □ *Oj/NSpec & * $\emptyset_C$

Table II  
 Local conjunction of \* $\emptyset_C$  with object-oriented subhierarchies (Aissen 2000: 9)

(35) \*STRUC<sub>C</sub>: penalizes a value for the morphological category CASE

Hebrew specific, indefinite patient

### Newmeyer Handout #3

Patient: specific indefinite	*Oj/Def & *ø <sub>C</sub>	*STRUCC	*Oj/Spec & *ø <sub>C</sub>	*Oj/NSpec & *ø <sub>C</sub>
Oj: specific indefinite CASE: ACC		*!		
☞Oj: specific indefinite CASE: none			*	*

Tableau VIII  
Hebrew specific indefinite patients (Aissen 2000: ms., p. 14)

#### Turkish specific, indefinite patient

Patient: specific indefinite	*Oj/Def & *ø <sub>C</sub>	*Oj/Spec & *ø <sub>C</sub>	*STRUC C	*Oj/NSpec & *ø <sub>C</sub>
☞Oj: specific indefinite CASE: ACC			*	
Oj: specific indefinite CASE: none		*!		*

Tableau IX  
Turkish specific indefinite patients (Aissen 2000: ms., p. 15)

- (36) NO LEXICAL HEAD MOVEMENT: A lexical head cannot move
- (37) LEFT EDGE (CP): The first pronounced word in CP is a function word related to the main verb of that CP
- (38) a. Je crois que Pierre a faim.  
b. \*Je crois Pierre a faim.
- (39) a. I found a book for you to think about.  
b. \*I found a book you to think about.

name	grammatical constraint	corresponding user constraint
NO LEXICAL HEAD MOVEMENT (Grimshaw 1997)	"A lexical head cannot move"	Moving a lexical head away from its dependents makes it difficult for the hearer to pair heads and dependents
LEFT EDGE (CP) (Pesetsky 1998)	"The first pronounced word in CP is a function word related to the main verb of that CP"	Not explicitly marking embedded clauses in terms of their boundaries and finiteness impedes rapid recognition of their meaning and role

Table Ia  
Possible functions for NO LEXICAL HEAD MOVEMENT and LEFT EDGE (CP)

- (40) OP-SPEC: Syntactic operators must be in specifier position
- (41) HEAD-RIGHT: Heads uniformly follow their complements and adjuncts
- (42) a. GEN-N: Mary's mother's uncle's lawyer  
b. N-GEN: the leg of the table

### Newmeyer Handout #3

(43) The functional differentiation of the genitive in Early Modern English (Kroch 1994; Rosenbach and Vezzosi 2000)

- a. GEN-N began to be favored for animate genitives
- b. N-GEN began to be favored for inanimate genitives

(44) a. the table's leg  
b. the treachery of the enemy

(45) Pressures for maintaining both the GEN-N and N-GEN orders in English:

- a. The pressure of conventionality.
- b. The pressure to have animate specifiers and inanimate complements
- c. Purely structural pressure, caused by the existence of noun phrases with the structure [NP's N] and [N of NP] where there is no semantic possession at all:
  - i. Tuesday's lecture
  - ii. the proof of the theorem

(46) Versions of the Thematic Hierarchy:

- a. Fillmore 1968: 33  
Agent > Instrumental > Objective
- b. Jackendoff 1972  
Agent > Location/ Source/ Goal > Theme
- c. Ostler 1980  
(relational predicates) Theme > Goal > Source > Path  
(actional predicates) Source > Path > Theme > Goal
- d. Givón 1984: 139  
Agent > Dative/ Beneficiary > Patient > Locative > Instrument/  
Associative > Manner
- e. Kiparsky 1985: 20  
Agent > Source > Goal > Instrument > Theme > Locative
- f. Carrier-Duncan 1985: 7  
Agent > Theme > Goal/ Source/ Location
- g. Larson 1988: 382-383  
Agent > Theme > Goal > Location (and other obliques)
- h. Wilkins 1988: 211  
Agent > Patient > Location/ Source/ Goal > Theme
- i. Randall 1988: 138 (for effects of lexical rules on argument structure)  
Theme > Agent > Instrument/ Source/ Path/ Goal/ Location/ ...
- j. Bresnan and Kanerva 1989: 23; Bresnan and Moshi 1990: 169; Alsina 1996:  
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### Newmeyer Handout #3

Agent > Beneficiary > Recipient/ Experiencer > Instrumental > Theme/  
Patient > Location

- k. Baker 1989: 544  
Agent > Instrument > Patient/ Theme > Goal/ Location
- l. Grimshaw 1990: 8  
Agent > Experiencer > Goal/ Source/ Location > Theme
- m. Jackendoff 1990: 261  
Agent > Patient/Beneficiary > Theme > Source/ Goal/ Reference Object >  
Identificational Goal/ Reference Object
- n. Langacker 1990  
Agent > Instrument > Patient/ Mover/ Experiencer ('Energy Flow  
Hierarchy' for subject choice)  
Agent > Experiencer > Other ('Initiative Hierarchy')
- o. Speas 1990: 16  
Agent > Experiencer > Theme > Goal/ Source/ Location > Manner/ Time
- p. Dowty 1991; Rugemalira 1994  
Proto-Agent > Proto-Patient
- q. Kiefer 1995  
Actor > Agent > Beneficiary > Theme/Patient > Instrument
- r. Van Valin and Lapolla 1997: 127 (continuum in terms of LS (=logical  
structure) argument positions) — this is an elaboration of Foley and Van Valin  
1984:59:  
Agent > Effector/ Mover/ User/ etc. > Location/ Perceiver/ Cognizer/  
Experiencer/ etc. > Theme/ Stimulus/ Implement/ etc. > Patient/ Entity

A controller might be an Agent (47a), an Addressee (47b), a Patient (47c), a  
Recipient (47d), a Source (47e), or a Holder (47f) (the controller is identified in  
bold-face):

- (47) a. **Mary** attempted to take a vacation.  
b. Bill told **Mary** to come visit him.  
c. I persuaded **John** to see the doctor.  
d. We taught **the dog** to roll over.  
e. **Sam** promised Mary to write more often.  
f. Tom required **Alice** to hand in the assignment.
- (48) **Relational Hierarchy:** Subject > Direct Object > Indirect Object >  
Oblique > Genitive > Object of Comparative
- (49) a. John kills the ducklings.  
b. The ducklings are killed by John.

- (50) The higher in prominence a direct object, the more likely it is to be overtly case marked.
- (51) Animacy Hierarchy: 1<sup>st</sup> Person Pronoun<sub>a</sub> > 2<sup>nd</sup> Person Pronoun<sub>b</sub> > 3<sup>rd</sup> Person Pronoun<sub>c</sub> > Proper Noun<sub>d</sub> > Human Common Noun<sub>e</sub> > Animate Common Noun<sub>f</sub> > Inanimate Common Noun<sub>g</sub>
- (52) Definiteness Hierarchy: Personal Pronoun<sub>a</sub> > Proper Noun<sub>b</sub> > Definite NP<sub>c</sub> > Indefinite Specific NP<sub>d</sub> > Non-specific NP<sub>e</sub>
- (53) Grammars in which object case is overtly marked choose a point on the Animacy and/or Definiteness Hierarchies and mark case at that point and at every point of higher prominence.
- (54) a. Hebrew: Object case-mark point c on the Definiteness Hierarchy.  
b. Turkish: Object case-mark point d on the Definiteness Hierarchy.
- (55) If an individual can lift a weight of  $x$  pounds, then he or she can lift a lighter weight.
- (56) a. Smith can lift 200 pounds.  
b. Jones can lift 300 pounds.

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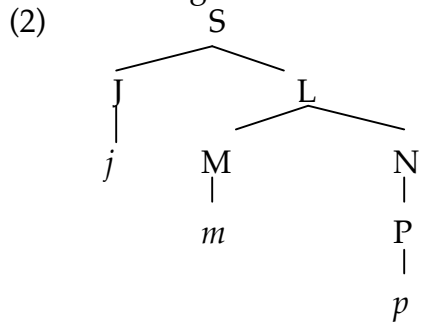
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### 8. KAYNE'S ANTISYMMETRIC PROGRAM AND TYPOLOGY

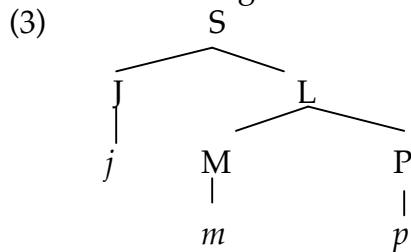
- (1) Kayne's Linear Correspondence Axiom (LCA) (informally stated)  
 The asymmetrical c-command relation among non-terminal nodes uniquely determines the ordering relation among terminal nodes.  
 Asymmetrical c-command translates into linear precedence.

The following structure is well-formed according to the LCA:



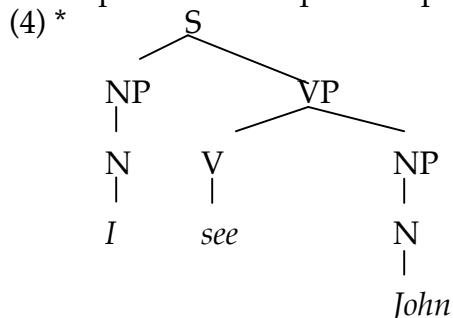
Asymmetrical c-command relations:  $\langle J, M \rangle$ ,  $\langle J, N \rangle$ ,  $\langle J, P \rangle$ ,  $\langle M, P \rangle$   
*j* precedes *m*, *j* precedes *p*, and *m* precedes *p*, as required

But the following structure is ill-formed:



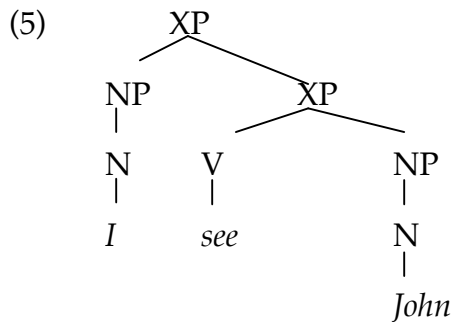
The asymmetrical c-command is  $\langle J, M \rangle$ ,  $\langle J, P \rangle$ , so no ordering is specified between *m* and *p*

An important consequence: specifiers cannot be sisters to heads:



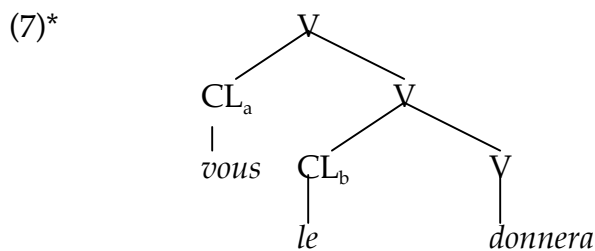
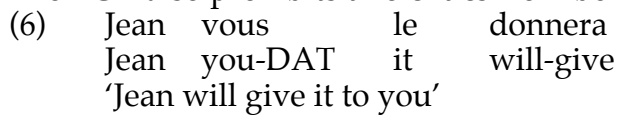
The problem is that VP asymmetrically c-commands (the first) N and (the first) NP asymmetrically c-commands V. So no unique ordering is specified for *I* and *see*.

Solution: specifiers are *adjoined* to heads:

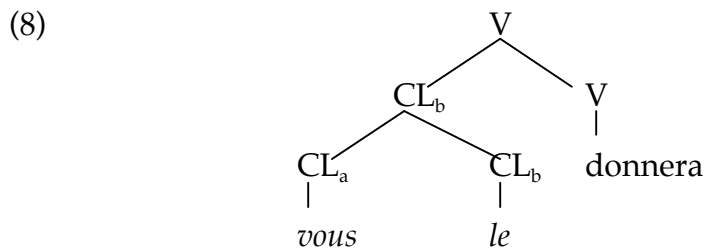


C-command is defined so that the lower XP does not c-command N in this structure. So a unique ordering *I see* is defined

The LCA also prohibits two clitics from being adjoined to the same head:

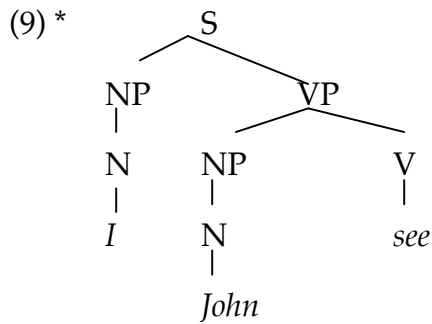


Problem: no linear order is specified for CL<sub>a</sub> and CL<sub>b</sub> because neither K nor Q is dominated by V. So K and Q c-command each other (i.e. there is no asymmetrical c-command). The only solution is to say that one clitic is adjoined to the other:



CL<sub>a</sub> now asymmetrically c-commands CL<sub>b</sub>, so *vous* precedes *le*.

The following (9) is impossible because *see* c-commands *John* but does not precede it. In other words, there can be no SOV languages!:



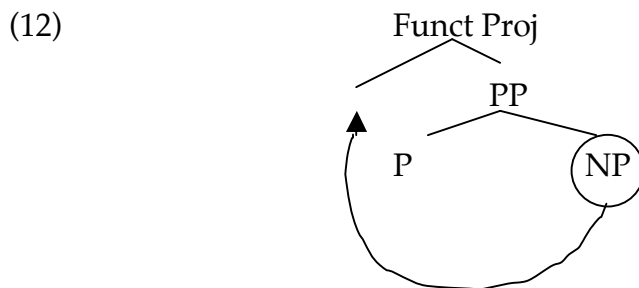
- (10) Support for the idea that there is a universal Specifier-Head ordering (p. 35)
- Wh*-phrases are almost always initial
  - Subjects are almost always initial
  - Most agree that VSO languages derive from SVO order

Kayne on the derivation of object-initial orders:

From the present perspective, OSV would involve movement of the O past S to the specifier position of a higher head. OVS and VOS must not have S in a final specifier position, but must instead either have OV or VO moving as a unit leftward past S, or else V and O moving separately leftward past S, *with the expectation, then, that such languages should show OVSX and VOSX orders.* (Kayne, p. 36, emphasis added)

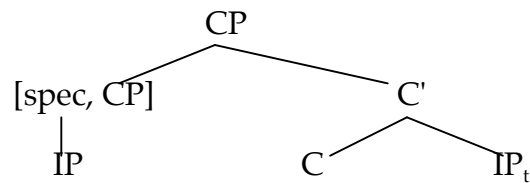
- (11) In other words:
- SVO → OSV
  - S[VO] → VOS      or      SVO → OSV → VOS
  - S[VO] → S[OV] → OVS      or      SVO → VSO → OSV

All complement-head ordering must result from movement — even postpositions have to start out as prepositions



- (13) Greenberg's Universal 33: When number agreement between the noun and verb is suspended and the rule is based on order, the case is always one in which the verb precedes and the verb is in the singular. (Greenberg 1963: 94)

(14)



(15) 3 arguments for movement of IP into Spec, CP to derive final complementizers (Kayne, p. 53-54):

- a. There are no *that*-trace effects in languages with final complementizers (*\*Who did you think that would win?*). Perhaps such effects result from the complementizer asymmetrically c-commanding the subject, which would not be the case if IP is in Spec, CP.
- b. Languages with final complementizers allow nominative anaphors, but complementizer-initial languages do not. Perhaps the movement of IP to Spec,CP licenses the nominative anaphor by removing it from the c-command domain of the complementizer.
- c. In general, COMP-final langs do not allow *wh*-movement. If final complementizers arise from movement of IP into SPEC,CP, *wh*-movement is thereby denied a landing site.

Further development in Cinque 1996

(16) Greenberg's Universal 20: When any or all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite. (Greenberg 1963: 87)

Greenberg's universal is given much more detail in Hawkins 1983:

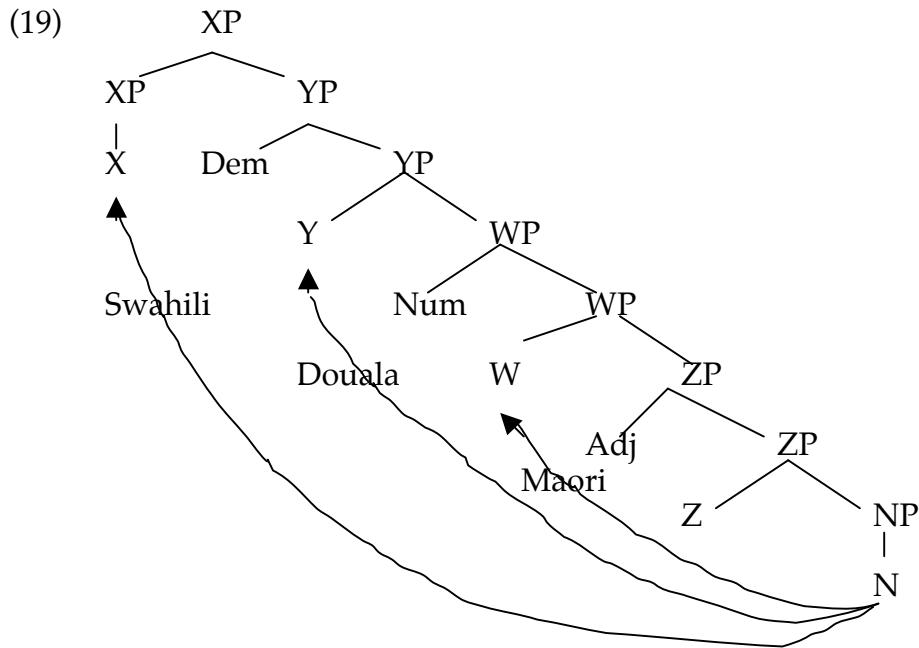
(17) For prepositional languages:

- a. NDem & NA (Swahili, Fulani, Bahasa Indonesian, ...)
- b. DemN & NA (Maori, Baure, Douala, Tunen, ...)
- c. DemN & AN (Greek, Maya, Norwegian, ...)
- d. \*NDem & AN
- e. NNum & NA (Swahili, Douala, Tunen, ...)
- f. NumN & NA (Maori, Baure, Bahasa Indonesian)
- g. NumN & AN (Greek, Maya, Norwegian)
- h. \*NNum & AN

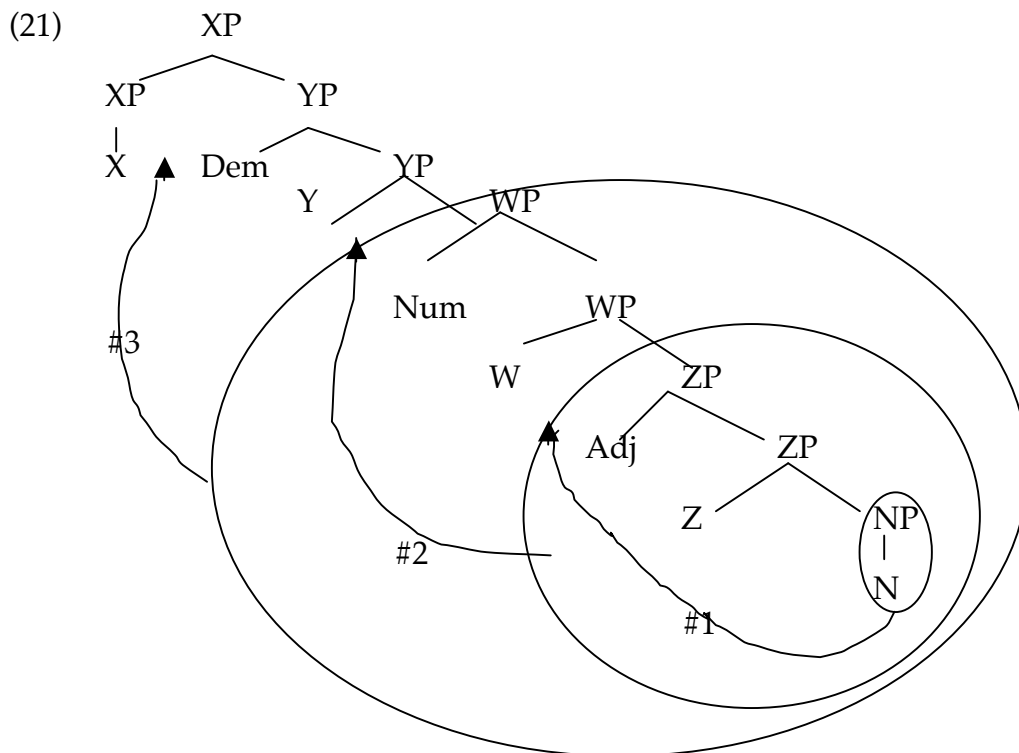
(18) For postpositional languages:

- a. NDem & NA (Selepet, Mojave, Diegueño, ...)
- b. DemN & NA (Burmese, Kabardian, Warao, ...)
- c. DemN & AN (Burushaski, Hindi, Japanese, ...)
- d. \*NDem & AN
- e. NNum & NA (Selepet, Mojave, Kabardian, Warao...)
- f. NumN & NA (Burmese, Hixkaryana, Ubykh)
- g. NumN & AN (Burushaski, Hindi, Japanese, ...)
- h. \*NNum & AN

In other words, postpositional languages actually follow the *same* ordering restrictions. Cinque handles this by assuming that universal basic order is is:



- (20) What can happen in postpositional languages?
- Nothing — you get Dem-Num-Adj-N as in Hindi
  - You can have successive leftward movements of the complements of the functional heads Z, W, and Y:



- (22) If all steps apply, you get N Adj Num Dem (the mirror image order)
- (23) Independent support for these movements is provided by the fact that intermediate steps appear to exist:
- a. Steps #1 and #2 only: Dem N Adj Num (Kabardian, Warao)
  - b. Step #1 only: Dem Num N Adj (Burmese, Kokama, Ubykh)

Lots of footnotes with potential problems that he has an answer for

- NDem & NumN should be impossible, but it is attested (Berber, Hebrew, Welsh, Zapotec). He suggests that the configuration in (21) and that demonstratives might be moved to that position
- Step #2 of (21) cannot apply unless step #1 has applied (or you would generate unattested Adj N Num Dem)
- For some reason, postpositional languages have leftward XP movements, but no leftward movement of just the N; whereas prepositional languages have N raising, but no leftward XP movement. Why?

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### 9. SPLIT-CP HYPOTHESIS

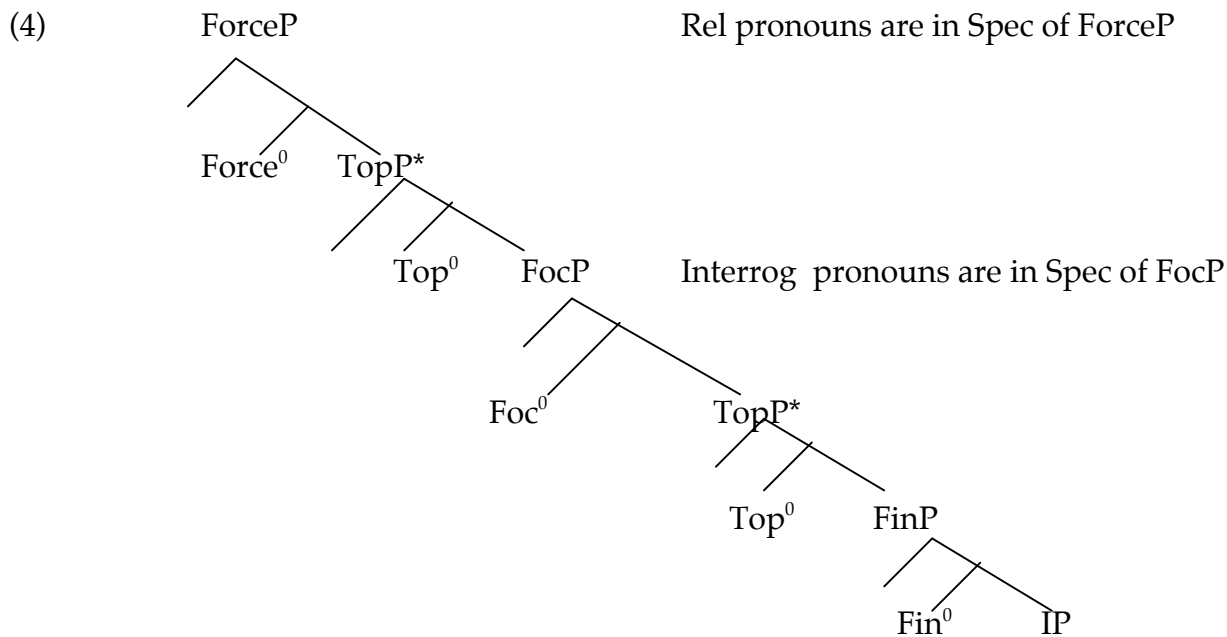
(1)  ${}_{CP}[SPEC, CP] {}_{C'}[C] {}_{IP}[SPEC, IP] {}_I[I] VP \dots$  (The mid-1980s consensus)

(2)  ${}_{\bar{CP}}[SPEC, \bar{CP}] {}_{\bar{P}}[\bar{C}] {}_{\bar{CP}}[SPEC, \bar{CP}] {}_{\bar{P}}[\bar{C}] {}_{\bar{CP}}[SPEC, \bar{P}] \dots IP \dots$  (The Split-CP Hypothesis)

Three proposals leading to the Split-CP Hypothesis

- (3) a. There is no optionality in grammar; hence elements move only when they are 'required to' (Chomsky 1995)
- b. Movement must be triggered by a feature on a functional head (Chomsky 2000)
- c. Features of the 'peripheral system' (force, topic, focus, etc.) trigger A' movement (Chomsky 2000).

Syntactic movement ... must be triggered by the satisfaction of certain quasi-morphological requirements of heads. ... [**S]**uch features have an **interpretive import (Wh, Neg, Top, Foc, ...)**: they determine the interpretation of the category bearing them and of its immediate constituents ..., function as scope markers for phrases with the relevant quantificational force in a local configuration, etc. ... (Rizzi 1997: 282)



(Rizzi 1997; see also Hatakeyama 1997 for a similar proposal)

- (5) Credo che a Gianni, QUESTO, domani, gli dovremmo dire  
           C      Top      Foc      Top      IP  
 'I believe that to Gianni, THIS, tomorrow we should say'

The LF-encoding of information structure (Rizzi 1997):

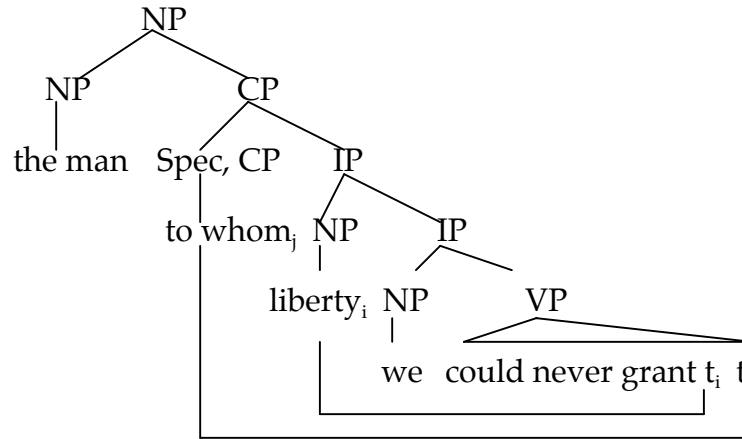
- (6) a. Top<sup>0</sup> [Comment]

b. Foc<sup>0</sup> [Presupposition]

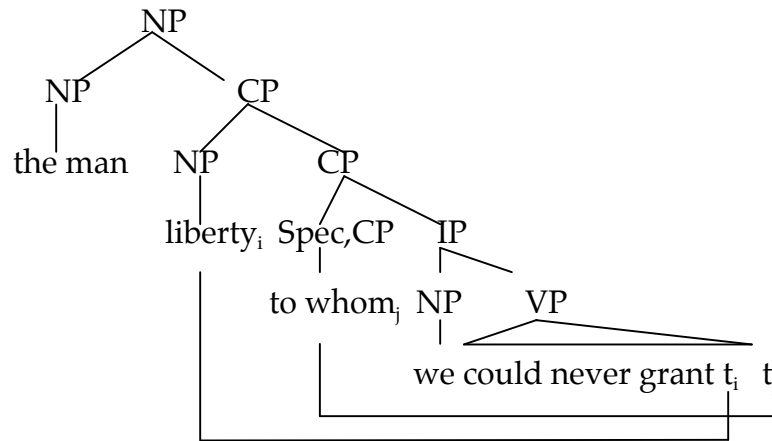
**Some ordering restrictions on the left-periphery:**

- (7) a. the man to whom liberty, we could never grant (Baltin 1982)
- b. \*the man, liberty, to whom we could never grant
- (8) a. On the table, which dishes are you going to put?
- b. \*Which dishes are, on the table, you going to put? (Culicover 1991a)

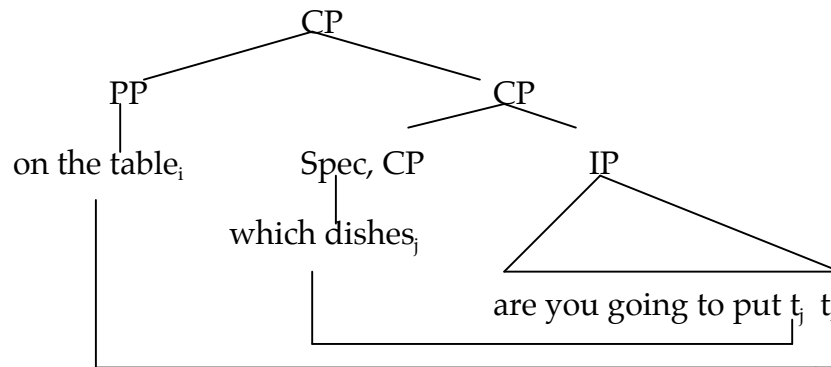
(9) a.



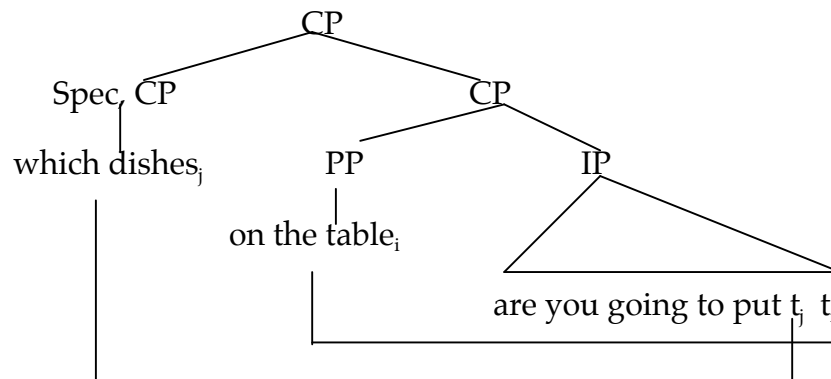
b.



(10) a.



b.



(11) **The Nested Dependency Constraint** (Fodor 1978; 1984; Pesetsky 1987):  
Multiple filler-gap dependencies may be disjoint or nested, but not intersecting.

(12) LF Focus Movement (Chomsky 1976; Chomsky 1981)

**Focuses, but not topics, give rise to weak cross-over effects (Lasnik and Stowell 1991; Culicover 1991b; Rizzi 1997):**

- (13) a.  $John_i$ ,  $his_i$  mother loves  $t_i$  (*John* a topic)  
b. \* $JOHN_i$   $his_i$  mother loves  $t_i$  (not Paul) (*John* a focus)

**In situ focus generating weak cross-over effects (Lappin 1982, Lasnik and Stowell 1991):**

- (14) ?? $His_i$  mother shot  $JOHN_i$

**Focused NPs in ungoverned islands (Reinhart 1991; Horvath 1999)**

- (15) a.  $[_{IP} [_{CP}$  That Linda argued with THE CHAIRMAN] is surprising].  
b.  $[_{IP} [_{NP}$  Even the paper that LUCIE submitted to our journal] was weak].  
(16) Q. Do people wonder where Mary was last night?  
A. No, people wonder where [Mary's BOYFRIEND] was last night.  
(17) Q. Have you shown Bill the book that I gave you for your birthday?  
A. No, I have (only) shown him the book that you gave me for CHRISTMAS.

**Even if covert pied-piping were permitted, it shouldn't apply in sentences (16) and (17), since if we substitute a *wh*-word for the focus, pied-piping is impossible:**

- (18) a. \*Whose boyfriend do people wonder where was last night?  
 b. \*For what (holiday) did you show him the book that you gave me?

... an apparent alternative would be to determine focus and presupposition in terms of surface structure: the focus is the phrase containing the intonation center, and the presupposition is determined by the replacement of the focus by a variable ... (Chomsky 1971: 200).

- (19) Was he warned to look out for [an ex-convict with a red shirt]?  
 SHIRT  
 RED SHIRT  
 A RED SHIRT  
 WITH A RED SHIRT  
 EX-CONVICT WITH A RED SHIRT  
 AN EX-CONVICT WITH A RED SHIRT

**Non-phrasal occupants of left branches can be contrastive foci (Ladd 1978; Lambrecht 1994):**

- (20) Q. Has John read *Slaughterhouse-Five*?  
 A. No, John doesn't READ books.  
 (21) Mary is THE boss.

*A sentence can have multiple/discontinuous focuses (Jacobs 1984; 1988; 1992; Rooth 1985; Stechow 1989; Krifka 1991)*

- (22) Q: Did Mary wash the car?  
 A: No, TOM washed the WINDOWS.

*A prefix can be a focus (Chomsky 1971)*

- (23) John is more concerned with A**F**firmation than with CON**F**irmation.

- (24) I gave [to Mary] [all my books on the phonetic foundations of conventional implicature]. (**Heavy-NP-Shift**)

**But a heavy NP is not necessarily in focus:**

- (25) a. To whom did you give all your books on the phonetic foundations of conventional implicature?  
 b. I gave [TO MARY][all of those unbelievably ridiculous publications].

- (26) Focus in Aghem (Watters 1979 and Horvath 1995)

a. *fil*      *á*      *mò*      *zí*      *GHE'*      *bé-'kó*  
 friends    SM    P<sub>2</sub>    eat    WHERE    fufu  
 'Where did the friends eat fufu?'

b. *fil*      *á*      *mò*      *zí*      *ÁN*    *'SÓM*      *bé-'kó*  
 friends    SM    P<sub>2</sub>    eat    IN    FARM      fufu  
 'The friends ate fufu IN THE FARM'

- (27) Háizi bǎ shū mǎi le (Chinese)  
child obj. marker book buy asp.  
'What the child did to the book was buy it'

In Malayalam, question words moved immediately to left of V, but have scope over the entire sentence:

- (28) a. niṅ-ṅe aarə talli (Jayaseelan 2002)  
you-acc. who beat (past)  
'Who beat you?'

- b. \* aarə niṅ-ṅe talli  
who you-acc beat (past)

- (29) **Wh-Criterion** (Rizzi 1996: 64; revising May 1985):  
A. A *wh*-operator must be in a Spec-head configuration with  $X^0$  [+wh]  
B. An  $X^0$  [+wh] must be in a Spec-head configuration with a *wh*-operator

- (30) I think that, tomorrow, John will leave

In most languages, where fronted *wh*-phrases and the *that* complementizer cooccur, the *wh*-phrase *precedes* the complementizer:

- (31) What that I mene, O swete herte deere? (Middle English — Sobin 2002)  
'What do I mean, oh dear sweetheart?'

- (32) There is extensive variation in what can occur on the left-periphery and where:  
a. Some languages allow a single position on the left periphery, which can house *either* a focus or a topic, but not both (Lopez 2002; Vilkuna 1995)  
b. In Zapotec, displaced *wh*-elements and displaced focus-elements can cooccur, despite that fact that Rizzi's model they are supposed to target the same projection (Lee 2001)

- (33) For the advantages of an adjunction approach to topicalization over a TopP analysis, see Lasnik and Saito 1992.

**'Minimalist' alternatives to triggered focus movement:**

- (34) a. Erteschik-Shir 1997: Topic and focus constituents are marked at 'F-structure', an annotated S-structure. The rule of predication takes F-structures as input and produces well-formed discourse representations.  
b. Fox 1995; Reinhart 1997 (based on Cinque 1993's theory of phrasal stress): Focus is not encoded in the syntactic derivation, but arises exclusively at the PF interface. 'Interface economy' explains why elements not in canonical position can be stressed focuses. (See also a parallel optimality-theoretic account in Szendrői 2001.)

## NO OBVIOUS PRINCIPLE SEEMS TO DISTINGUISH MOVEMENT IN THE NARROW (S-)SYNTAX FROM MOVEMENT IN THE P-SYNTAX

### Three scenarios for movement:

- (35) a. Best scenario— all movement is in the narrow (S-)Syntax  
b. Acceptable scenario— some principle distinguishes S-Syntactic movement from P-Syntactic movement  
c. Unacceptable scenario— no principle distinguishes S-Syntactic movement from P-Syntactic movement

### Heavy NP-Shift licences parasitic gaps (Engdahl 1983):

- (36) John offended t by not recognizing e immediately, his favorite uncle from Cleveland.

### PP Extraposition creates configurations relevant for anaphor-antecedent binding (Guéron 1980):

- (37) a. a picture of Mary was sent to her  
b. \*a picture was sent to her of Mary

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