

Generative Grammar
MGU / RGGU
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Logical Form

Logical Form: The post-syntactic level of representation where the syntax interfaces with semantic interpretation -- a level where everything relevant to interpretation is represented uniformly

- At LF:** i) all operators bind variables (such as traces of movement)
ii) scope is determined by transparent structural relations (c-command)
iii) equivalent sentences in all languages are represented identically (after covert movement)
iv) semantically irrelevant information is deleted (expletives, complementizers...)

1. What moves at LF?

- a. WH-phrases that have not moved in the syntax
- b. Quantifiers
- c. Verbal heads that have not moved in the syntax
- d. Focalized elements that have not moved in the syntax (?)
- e. ...

2. Examples of LF movement:

• Overt WH-movement

- 1) a. Yeltsin appointed Putin.
b. Who did Yeltsin appoint?
- 2) a. [A (Yeltsin, Putin)]
b. Who X: [A (Yeltsin, X)]

RUSSIAN:

- 3) a. Клинтон не знает [кого_i Гор хотел пригласить _____i в кино].
b. Клинтон не знает [куда_i Гор хотел пригласить Монику _____i].
c. *Клинтон надеется [кого_i Гор хотел пригласить _____i в кино].
d. *Клинтон надеется [куда_i Гор хотел пригласить Монику _____i].

(3a, b) = indirect questions (subordinate CP clause = [+Q]) (verb 'know' can take [+Q]CP)

(3c, d) = impossible because verb 'hope' cannot not take [+Q] CP

- 4) a. Кого_i Клинтон хочет, чтобы Гор пригласил _____i в кино ?
b. Куда_i Клинтон хочет, чтобы Гор пригласил Монику _____i ?

(4a, b) = direct question (main clause = [+Q])

• Covert WH-movement:

- i. 2nd WH-phrases (in languages with single WH-movement)
- ii. all WH-phrases (in languages with no WH-movement)

CHINESE:

- 5) (SS) Zhangsan zhidao [shei mai-le shu]
Zhangsan knows who buy-ASP book
i. "Zhangsan knows who bought books."
ii. "Who does Zhangsan know bought books?"

- 6) (LF) a. Zhangsan zhidao [_{CP}shei_i [_{TP} _____i mai-le shu]]
b. [_{CP}shei_i [_{TP} Zhangsan zhidao [_{TP} _____i mai-le shu]]]

3. Syntactic Evidence for LF: Parallels with overt syntactic movement

ENGLISH:

Subject Movement Constraint:

Moving subjects over anything in CP is impossible

- 7) a. What do you think [\emptyset [John said ____]] ?
b. What do you think [that [John said ____]] ?
- 8) a. Who_i do you think \emptyset [_____i left early] ?
b. *Who_i do you think that [_____i left early] ?
c. *Who_i do you wonder whether [_____i left early] ?

Same with LF movement

- 9) a. Who ____ said "goodbye" ?
b. What did John say ____ ?
- 10) a. Who said what? (John said "hello", Fred said "goodbye", Mary said)
b. *What did who say?
- 11) SS: a. [_{CP} Who_i [_{TP} _____i said what]] ?
LF: b. [_{CP} What_k who_i [_____i said _____k]] ?
- 12) SS: a. [_{CP} What_k did [_{TP} who_i say _____k]] ?
LF: b. * [Who_i what_k [_____i said _____k]] ?

The subject movement at LF in (12b) violates the Subject Movement Constraint
(The object movement in (11b) does not)

The Complex NP Constraint *Nothing can be moved out of a complex NP*

(Complex NP = NP with CP inside = relative clause (который clause))

- 13) a. They know [_{CP} that [_{TP} the man stole a coat.]]
b. What do they know [_{CP} that [_{TP} the man stole ____]] ?
- 14) a. They caught [_{NP} the man [_{CP} who stole a coat]]
b. *What did they catch [_{NP} the man [_{CP} who stole ____]] ? (Complex NP violation)
- 15) a. Videli su [\check{c} oveka, koji je ukrao kompjuter] (Serbo-Croatian)
saw aux man-acc who aux stole computer-acc
'They saw the man who stole the computer.'
b. *Sta su videli \check{c} oveka koji je ukrao ____ ? (Serbo-Croatian)
- 16) a. Мы увидели человека, который украл компьютер. (Russian)
b. Что они хотели, [_{CP} чтобы [_{TP} ты украл ____]] ?
c. *Что вы увидели [_{NP} человека, [_{CP} который украл ____]] ?
- 17) *[_{TP} tou-le **sheme** de neige ren] bei dai-le (*Complex NP) (Chinese)
stole what DE that person by caught
'The man that stole *what* was caught'

4. Quantifier Raising (QR) (an LF movement like WH-movement)

- 18) a. Yeltsin appointed Putin.
b. Who did Yeltsin appoint?
c. Yeltsin appointed every minister.
- 19) a. A (Yeltsin, Putin)
b. Who = X: A (Yeltsin, X)
c. Every X: (M(x) --> A (Yeltsin, X))
- 20) a. Yeltsin appointed every minister
b. [_{tp}every minister [_{tp}Yeltsin [_{vp}appointed x]]]

LF Scope Principle: *A quantifier's scope coincides with its c-command domain.*

- 21) (SS) Someone likes everyone. (ambiguous in English)
- 22) (LF) a. [_{tp} someone_k [_{tp} everyone_i [_{tp} t_k likes t_i]]] = one person loves all
b. [_{tp} everyone_i [_{tp} someone_k [_{tp} t_k likes t_i]]] = everyone is loved

• FRENCH QR:

- 23) (SS) a. Je n'aime personne.
I not-like no one
"I like noone"
(LF) b. [_{ip} personne_i [_{tp} je n'aime ____ i]] = for no person x, I love x
- 24) (SS) a. Je n'ai demandé qu'on invite personne
I not asked that they invite no one
"I haven't asked that they invite anyone."
(LF) b. [_{tp}personne_i [_{tp} je n'ai demandé [_{cp} que [_{tp} on invite ____ i]]]]
(**personne** moves at LF to get scope)
- 25) (SS) a. *Je n'ai demandé que personne téléphone
I not asked that anyone telephone
"I haven't asked that anyone telephone."
(LF) b. * [_{ip}personne_i [_{ip} je n'ai demandé [_{cp} que [_{ip} ____ i téléphone]]]]
(**personne** violates the Subject Movement Constraint)

Weak cross-over: A trace cannot be the antecedent of a pronoun to its left

- 26) a. His_i mother saw John_i
b. *Who_i did his_i mother see ____ i ?
- 27) [Every boy]_i loves his_i mother.
- 28) (SS) a. *His_i mother saw everyone_i.
(LF) b. [everyone_i [his_i mother saw ____ i]]

Advanced Topics:

Proper Binding Condition (PBC): *Traces must be bound by their antecedent*

- 29) a. (SS) I know someone from every California city. (ambiguous!)
- b. 1st meaning: I know Joe (he is from every California city)
 (LF) [some X [every Y: Y=Cal. city [I know X from Y]]]
- c. 2nd meaning: I know Mary from San Francisco, Joe from L.A., Sam from Santa Fe, etc.

(SS) [np1 Someone from [np2 every California city]] owns a Porsche

30) a. (LF) [tp [every California city]_k [tp [someone from t_k] [tp t_i owns a Porsche]]]

*b. (LF) [tp [someone from t_k] [tp [every California city]_k [tp t_i owns a Porsche]]]

- (30a) is OK (all variables bound)
- (30b) is bad: t_k is not bound; violates PBC

WH/QP interaction

- 31) (SS) a. What did everyone buy for Max?
- i. A book.
 - ii. Joe bought a book, Mary a fish, Bob a Yeltsin doll etc.

- (SS) b. Who bought everything for Max?
- i. Joe.
 - *ii. Joe bought the book, Mary the fish, Bob the Yeltsin doll etc

Path Containment Condition (PCC): *Overlapping but non-nesting paths are ill-formed*

- 32) (LF) a. [cp What_k did [tp everyone_i [tp ____i buy ____k for Max]]]
- b. *[cp Who_i [tp everything_k [tp ____i buy ____k for Max]]]
- c. [cp Who_i [tp ____i [vp everything_k [vp buy ____k for Max]]]

Exercises (to hand in next week)

A. Draw surface structure and Logical Form trees of the following examples from this handout: (5), (10a), (10b), (21) Extra Credit: (17)

- Indicate movement with arrows
- Make sure your trees indicate why ungrammaticality occurs in those cases where the sentence is starred. Mention the relevant constraint that is violated in ungrammatical cases.
- Make sure you have 2 distinct LFs in cases where the sentence is ambiguous, with movements indicated) [(5) and (21) are ambiguous, no each needs 2 derivations]