

Lexical-Functional Grammar

Lecture 1: Motivations for LFG

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Overview

- Psycholinguistic roots of LFG
- Nonconfigurationality
- Movement Paradoxes
- (Lexicalism— next time)

Chomsky's (1965) *competence hypothesis*

The **competence model** should be a component of a larger model of **language use**:

‘When we say that a sentence has a certain derivation with respect to a particular generative grammar, we say nothing about how the speaker or hearer might proceed, in some practical or efficient way, to construct such as derivation. These questions belong to the theory of language use—the theory of performance. **No doubt, a reasonable model of language use will incorporate, as a basic component, the generative grammar that expresses the speaker-hearer’s knowledge of the language;** but this generative grammar does not, in itself, prescribe the character or functioning of a perceptual model or a model of speech production.’ (Chomsky 1965:9)

What sort of competence model can be embedded in a successful model of language use?

2 important results of early psycholinguistic studies (summarized in Fodor, Bever, and Garrett 1974):

- **constituent structure** is psychologically real
- there is no evidence that **transformations** are psychologically real

Sentences purported to result from the application of transformations are **not** harder or more time-consuming to process than transformation-less sentences.

Responses to this challenge for transformations:

(i) **Reject the competence hypothesis**; instead, language use involves agrammatical strategies (Fodor, Bever, and Garrett 1974). Problem: If these strategies violate postulates of UG, then what is UG a theory of?

(ii) Ignore the empirical evidence and **abandon the attempt to unify results from theoretical syntax and psycholinguistic studies**. (Chomsky 1980, p. 191ff)

(iii) **Abandon transformations** and attempt to develop a competence model which is consistent with what we know about language processing. **LFG and HPSG grew out of this third response.**

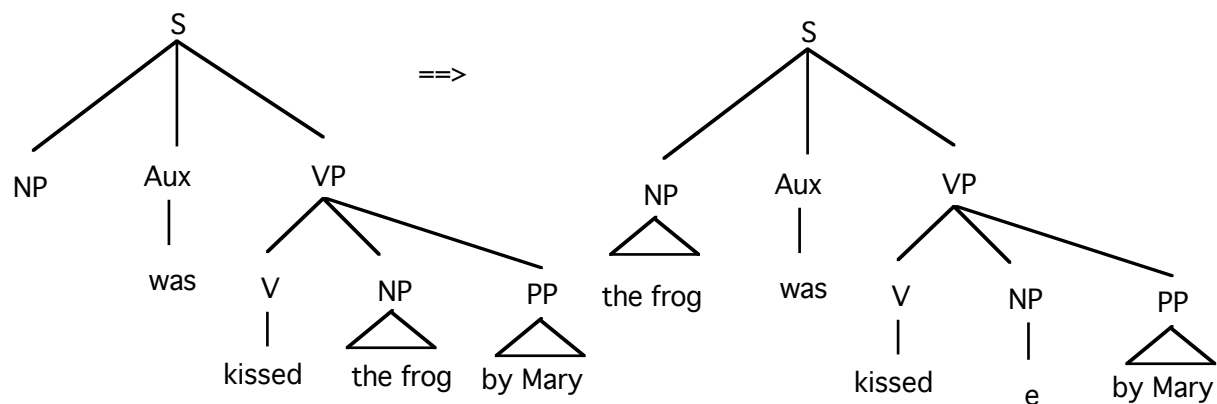
The mental 'processor' must assign appropriate grammatical relations and thematic roles to strings of words: who did what to whom?

The active/passive alternation.

active: **Mary has kissed the frog.**

passive: **The frog was kissed (by Mary).**

Transformation to derive passive (NP-movement):



Instead of a passive transformation, LFG posits active and passive verb lexical entries with different mappings between theta-roles and grammatical functions. The realizations of grammatical functions are constant for a given language (SUBJ is the NP daughter of S in English, etc.). A lexical rule explains the regularity of passive.

kiss (active): SUBJ=kisser, OBJ=kissee

=> (lexical rule)

kissed (passive): SUBJ=kissee, (OBL_{by}=kisser)

Lexical vs. syntactic rule: why it matters

transformational rule: output trees of A-movement are infinitely many (*John's frog was kissed by Mary; John's mother's frog was kissed by Mary; etc.*) Hence these trees are not stored in the mind. To decode the thematic roles, **the processor must perform operations specified by transformations, resulting in greater derivational complexity** (which was disconfirmed).

lexical rule: captures a pattern over a finite domain, namely the lexicon. Indeed, lexical rules have been replaced by a **non-derivational model for lexical alternations** (Lexical Mapping Theory; cp. Bresnan and Kanerva 1989).

Nonconfigurationality (Bresnan 2001, ch. 1)

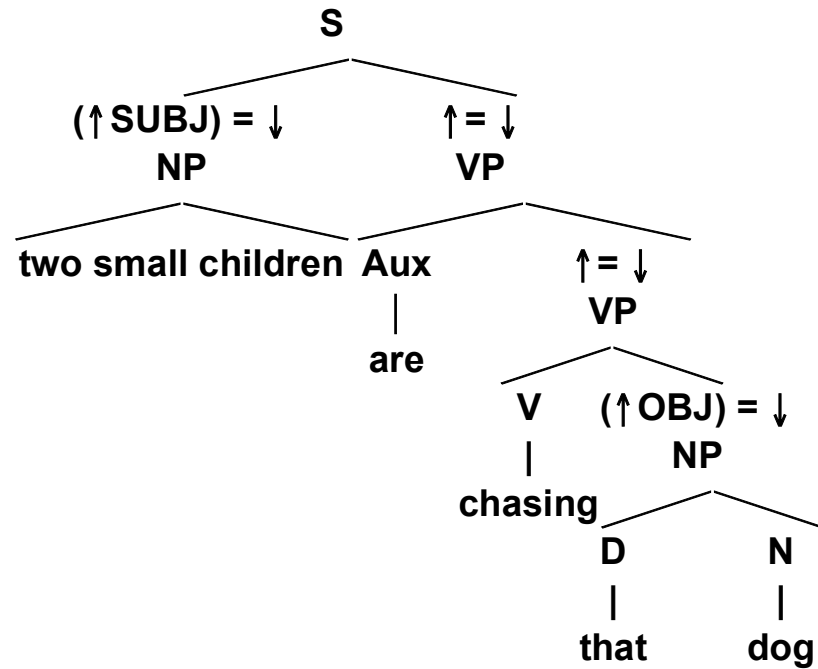
Morphology competes with syntax

‘across languages, there often appears to be an inverse relation between the amount of grammatical information expressed by **words** and the amount expressed by **phrases**.’ p. 6.

How are Grammatical Relations signaled?

- English: by phrase structure
- Warlpiri: by morphology (case, agreement)

English



Review question: Give empirical evidence for this constituent structure.

E.g. show that the word string *chasing that dog* is a constituent, while the string *chasing that* is not.

Two small children are **chasing that dog**.

1. **Chasing that dog** though the children are, they nonetheless are very peaceful.
2. Two small children are **chasing that dog**, and **so** is Mary. (so = 'chasing that dog')
3. Two small children are [**chasing that dog** and singing a song].

Two small children are **chasing that** dog.

1. ***Chasing that**, two small children are dog.
2. *Two small children are **it / so / etc.** dog.
3. *Two small children are [**chasing that** and teasing this] dog.

Warlpiri (Australian aboriginal)

The **finite auxiliary** must immediately follow either **the first word** or **one phrase** (NP or infinitive VP). Aside from that restriction, all word order permutations are possible!

kurku-jarra-rlu =**ka-pala** maliki wajili-pi-nyi wita-jarra-rlu.
child-Dual-ERG Pres-3duSUB dog.ABS chase-Npast small-Dual-ERG

‘Two small children are chasing the dog.’

maliki =**ka-pala** kurku-jarra-rlu wajili-pi-nyi wita-jarra-rlu
wajili-pi-nyi =**ka-pala** kurku-jarra-rlu maliki wita-jarra-rlu
wita-jarra-rlu =**ka-pala** kurku-jarra-rlu maliki wajili-pi-nyi
...etc.

(at least 24 permutations, plus NP-initial permutations)

So English and Warlpiri are different. Yet there is a common underlying structure: SUBJ binds OBJ anaphor but not vice versa, in both languages:

Lucy is hitting herself.
*Herself is hitting Lucy.

Napaljarri-rli ka-nyanu paka-rni.
N.-ERG PRES-REFL hit-NONPAST
'Napaljarri is hitting herself.'

*Napaljarri ka-nyanu paka-rni.
N.ABS PRES-REFL hit-NONPAST
'Herself is hitting Napaljarri.'

How to capture this underlying similarity?

Configurational design of universal grammar (Chomskian view): Both language types have similar **underlying** configurational structure ('deep structure', 'd-structure').

But there is no evidence for VP in Warlpiri: putative VP fails all constituency tests:

- contiguity under permutation
- grouping for pronunciation ('surface order')
- order relative to other elements
- substitutability
- The 'VP' even fails the one constituency rule of Warlpiri: a single phrase can precede finite Aux!

LFG: underlying structure = **functional structure**

[PRED	'chase < (↑ SUBJ) (↑ OBJ) >']
[TENSE	PRESENT]
[SUBJ	[...'two small boys'...]]
[OBJ	[...'that dog'...]]

GFs like SUBJ and OBJ serve as links between:

- i. argument structure chase < agent, theme >
- ii. expression structure phrase structure, case, etc.

Movement paradoxes (Bresnan 2001, ch. 2)

topicalization:

[that he was sick] we talked about for days.

* we talked about [that he was sick] for days.

passive:

[that languages are learnable] is captured by this theory.

*this theory captures [that languages are learnable].

VP-preposing:

she said she would meet me, and [meet me] she HAS!

*...and she has [meet me]!

Subject-Aux inversion

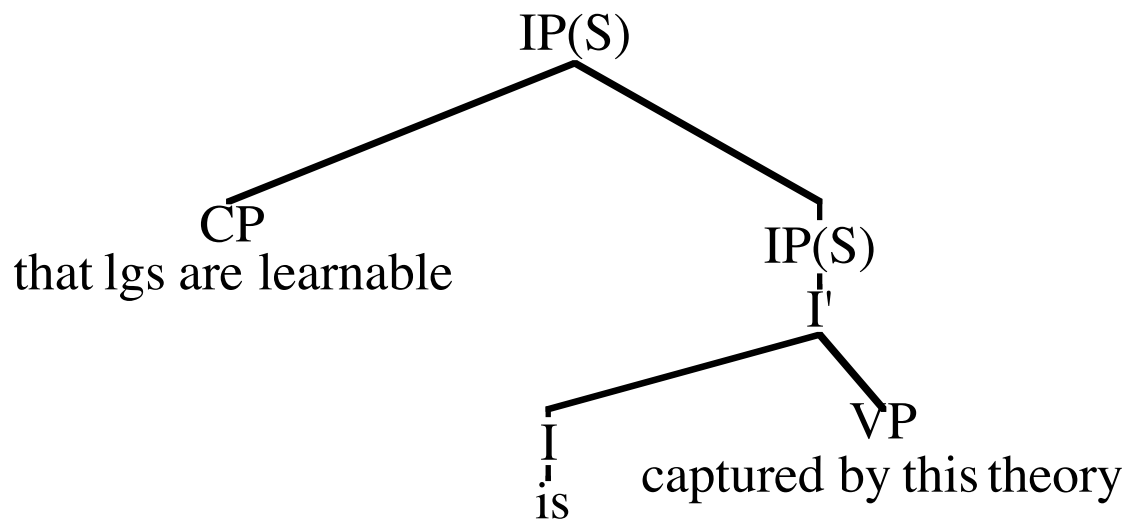
Aren't I your friend?

*I aren't your friend.

These facts cause problems for the following transformational assumptions:

- that underlying structure has properties of phrase structure
- that surface configuration is derived through movement from underlying structure

Bresnan's LFG analysis: CP subject is adjoined to IP (evidence: Clausal subjects don't invert in SAI).



- adjoined position is for TOPic or FOCus GF.
- canonical realization of subject ([Spec,IP]) and object (dominated by VP) GFs is nominal.
- by default, the subject is the topic.

Applying LFG principles:

- *Completeness*: SUBJ function is governed by the PRED so it must be realized
- (Extended) *Coherence*: TOP and FOC must be identified with a governed function (SUBJ, OBJ, etc.)

[PRED	'capture < (↑ SUBJ) (↑ OBL _{by}) >']
[TENSE	PRESENT]
[TOPIC	f [...'that lgs are learnable'...]]
[SUBJ	f]
[OBL _{by}	[...'this theory'...]]

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