

Lexicon and syntax

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Lexicon and syntax

- Relationship between syntactic patterns and certain lexemes
- Lexemes do not occur in isolation but are usually combined into larger units
→ phrases, sentences
- Combination of lexemes is rule governed
- Approaches to syntax and to the relationship between syntax and lexicon try to explain the generation of grammatical vs. ungrammatical sentences (e.g. possible vs. impossible structures)

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The role of the lexicon

- Important in the structuring of sentences
→ lexemes seem to contain grammatical information
- Lexemes therefore seem to determine the syntactic shape of sentences
- No general set of principles can predict whether a particular verb can undergo alternation

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Examples

- *This question concerns Peter.*
- *Peter is concerned by this question.*
- *This question regards Peter.*
- **Peter is regarded by this question.*
- *Joan sank the boat.*
- *The boat sank.* → There must be a lexical rule
- *Joan shot the deer.*
- **The deer shot.*
- **The postman arrived the package.*
- *The package arrived.*

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Approaches to syntax

- The computational perspective
- Lexicogrammar
- Valency grammar
- Generative grammar
- Lexical functional grammar

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Computational linguistics

- Interdisciplinary field
- Applied approach → machine translation
- Corpus linguistics
- Collocations
- Lexicography

Problems:

- Difficulty of separating lexis and grammar
- Fuzzy categories

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Lexicogrammar

- Michael Halliday
- Lexis and syntax are regarded as two poles of a continuum → lexicogrammar
- Meanings can migrate along the cline
→ Grammaticalisation
→ Lexicalisation

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Lexicogrammar

- Syntactic distinctions are not qualitatively different from lexical distinctions
 - man – pregnant
 - mass – count nouns
- Interaction between extra-linguistic reality and intra-linguistic reality

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Valency grammar

- Student's presentation

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Generative grammar

- Noam Chomsky: 1957 *Syntactic Structures*
1965 *Aspects of the Theory of Syntax*
- Attempts to account for the structure of all the grammatical sentences of a language
- Intuitive knowledge about acceptability of sentences (competence vs. performance)
- Finite set of words
- Finite set of rules
→ Generation of infinite number of sentences
→ Rule governed creativity

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Categories and Lexicon

- The lexicon contains information about the category membership of a lexeme
- Lexemes of the same category share grammatically significant properties
- Grammatical rules refer to categories instead of individual lexemes
→ More general
→ Better approach to productivity and the question how an infinite number of sentences is generated from a finite set of rules and lexical items

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Lexemes and their syntactic behaviour

- Aspects that determine the syntactic behaviour of lexemes:
 - Syntactic category label (N, V, Adj., Det...)
 - Distribution is limited to nodes bearing the same label as defined by phrase structure rules
 - Rule feature
 - Triggering the application of particular transformations such as *Passive* or *Tough Movement* (*John is easy to please* > *It is easy to please John*)

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Lexemes and their syntactic behaviour

- Subcategorisation features
 - Specification of the number of sister constituents the lexeme requires or allows as well as their syntactic category
 - e.g.: *eat* subcategorizes for an optional direct object NP, while *describe* subcategorizes for an obligatory NP
- Selectional restriction
 - Specification of the semantic properties of the surrounding constituents

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Lexical functional grammar (LFG)

- Joan Bresnan, Ronald Kaplan
- Name reflects central characteristics of this approach
- Role of the lexicon is central
 - Lexical entries are elaborate
 - Every single inflected form has an own entry
- Grammatical relations are called grammatical functions

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LFG

- Uses model with multiple levels of representation, each with own architecture, vocabulary and constraints
 - f(unctional) structure
 - c(onstituent) structure
 - a(rgument) structure
 - semantic (σ) structure
 - phonological structure
 - thematic structure
 - Levels are not derived from each other but parallel and linked through mappings constrained by principles of correspondence
- LFG is constraint-based and non-derivational

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LFG

- Recognition of two syntactic levels of representation:
 - The c-structure: constituent structure tree
 - The outer visible hierarchical organisation of words into phrases
 - The f-structure: information on grammatical functions
 - The inner more abstract hierarchical organisation of grammatical functions into complex functional structures

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C-structure

- C-structure
 - Encodes phrasal dominance and precedence relations
 - Represented as a phrase structure tree
 - S → NP VP (English)
 - S → C aux C* (Warlpiri) (C stands for any constituent type; * indicates any number of constituents)
 - each fully inflected word belongs to exactly one node → restriction called lexical integrity

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F-structure

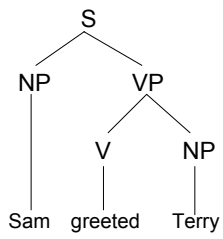
- F-structure
 - Represented as an attribute-value matrix

SUBJ	SUBJ	'lion'				
	NUM	PL				
TENSE	PRES					
PRED	'live' <...>					
	CASE	LOC				
	PRED	'in' <...>				
OBL _{loc}	OBJ	<table style="border-collapse: collapse;"> <tr> <td style="border-left: 1px solid black; padding-left: 10px;">PRED</td> <td style="padding-left: 10px;">'forest'</td> </tr> <tr> <td style="border-left: 1px solid black; padding-left: 10px;">DEF</td> <td style="padding-left: 10px;">+</td> </tr> </table>	PRED	'forest'	DEF	+
PRED	'forest'					
DEF	+					

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c-structure and f-structure



(PRED 'GREET'(SUBJ)(OBJ)
SUBJ [PRED 'SAM']
OBJ [PRED 'TERRY'])

C - structure

F - structure

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