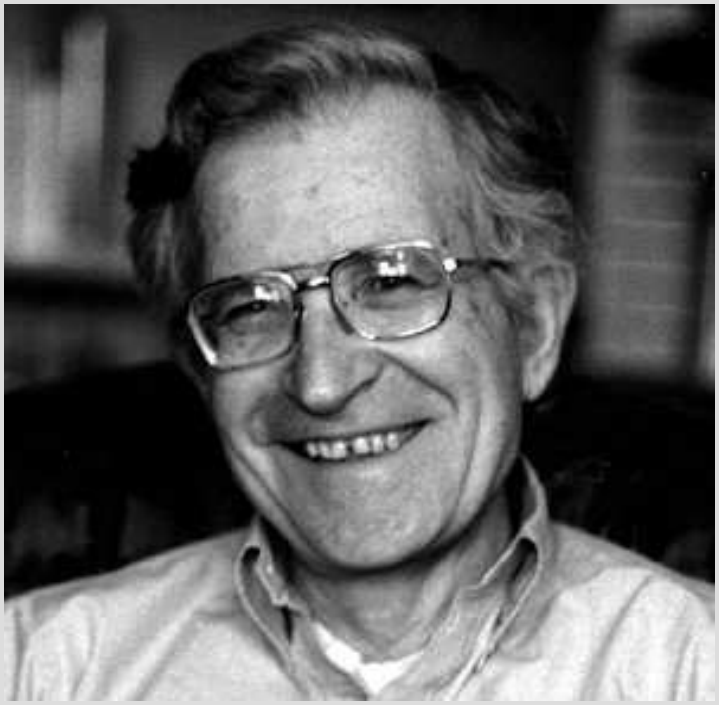
Linguistic nativism

Holger Diessel
holger.diessel@uni-jena.de

Theoretical approaches

- Nativist theory



Noam Chomsky 1928

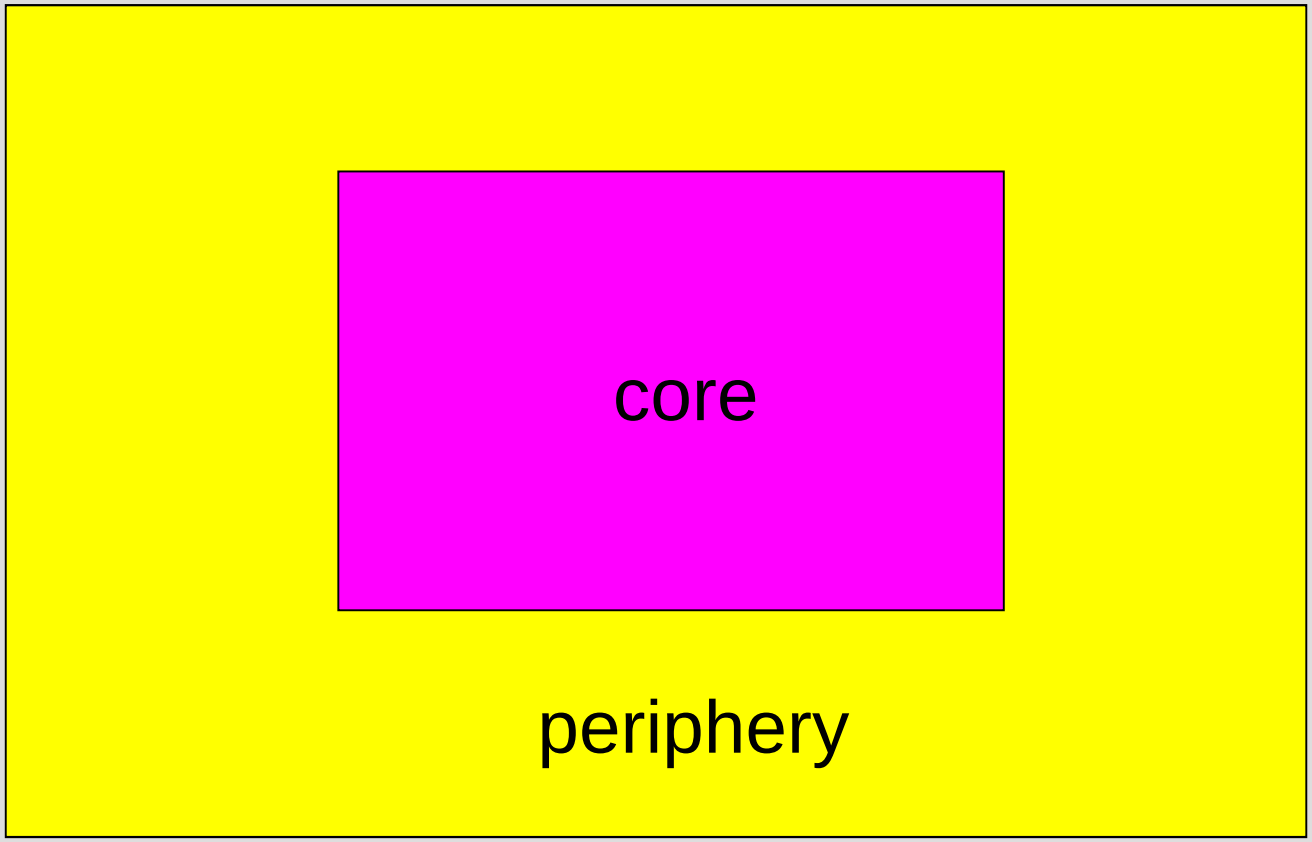
- Learning theory

Jean Piaget 1896-1980

Questions

- What exactly is innate?
- How does the nativist approach account for differences between languages?
- What are the arguments supporting the innateness hypothesis?

What is innate?



What is the innate core?

Universal Grammar = Language Acquisition Device

Universal Grammar is not the grammar of any single language: it is the prespecification in the brain that permits the learning of language to take place. So the grammar acquiring capacity is what Chomsky claims is innate. [Jackendoff 2002: 71-2]

Grammatical categories such as nouns and verbs, subject and object, subordinate clause etc. are innate. [Pinker 1984]

What is innate?

Main point of controversy: Are there specific aspects of human cognition that are exclusively devoted to language?

- Nativists: Grammar has language-specific prerequisites
- Learning theorists: Grammar does not have language-specific prerequisites

Consequences:

- If the core of grammar is genetically prespecified, some aspects of grammar are invariable. –> static model
- If there are no genetic prerequites of grammar, all aspects of language can in principle change. -> dynamic model

Parameters

If the core of grammar is innate, how is it possible that the grammatical structures of individual languages are so different?

Moreover, if the core of grammar is innate, how is it possible that there are systematic differences between certain types of languages?

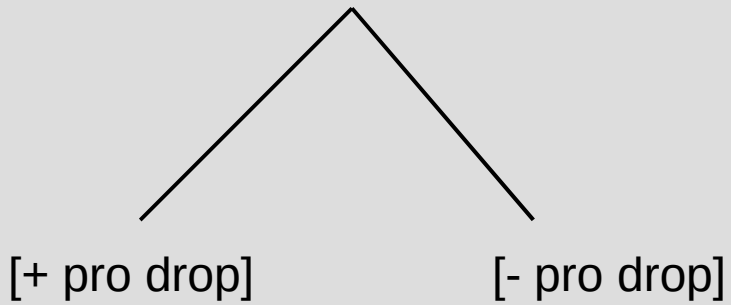
Chomsky: Some basic aspects of language variation are grounded in universal grammar, i.e. in innate parameters.

Parameters

The pro-drop parameter:

(1) He has seen Peter.

(2) Ha visto Piero. ‘(S/he) has seen Peter.’

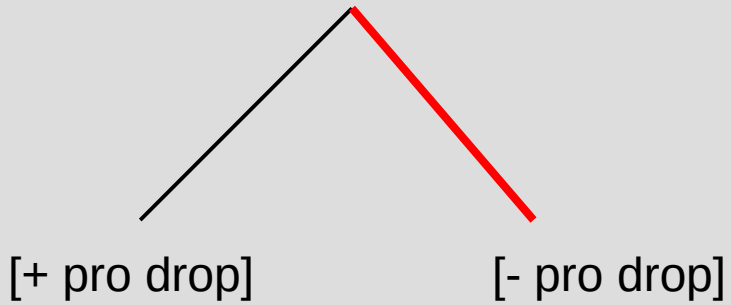


Parameters

The pro-drop parameter:

(1) He has seen Peter.

(2) Ha visto Piero. ‘(S/he) has seen Peter.’

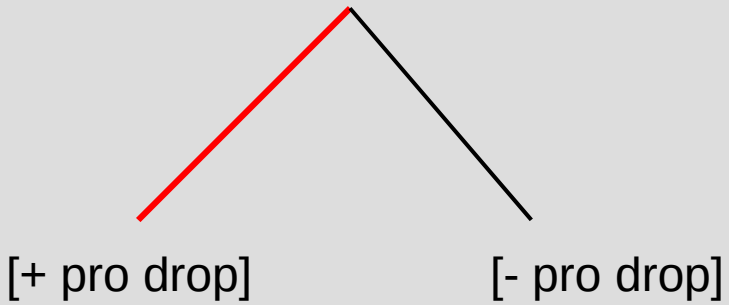


Parameters

The pro-drop parameter:

(1) He has seen Peter.

(2) Ha visto Piero. ‘(S/he) has seen Peter.’



Parameters

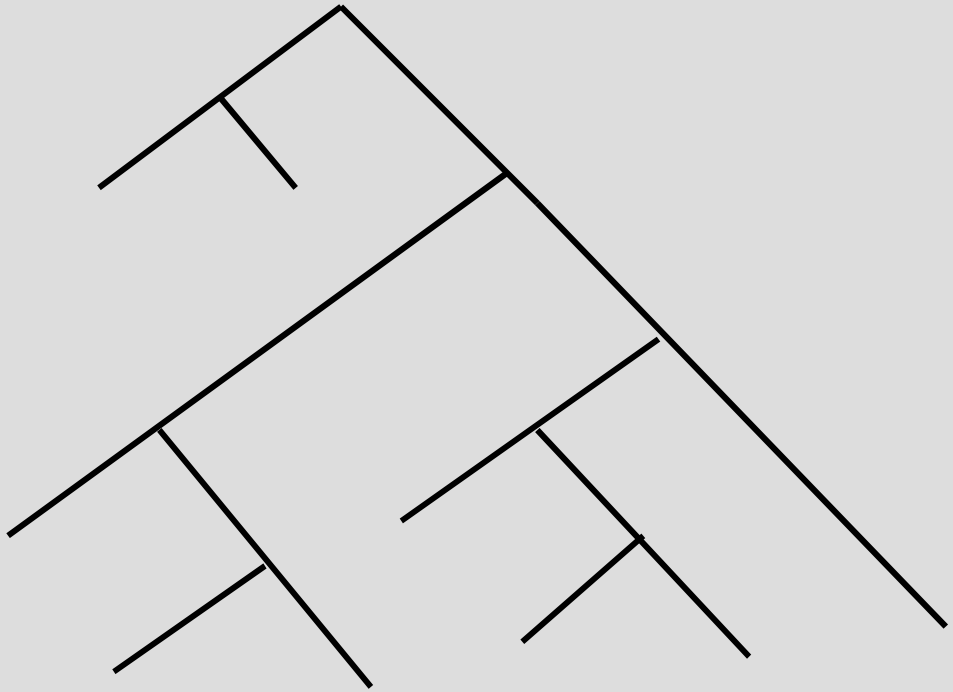
The head-direction parameter:

Head initial	**Head final**
V O	O V
P NP	NP P
AUX V	V AUX
SUB S	S SUB
ART N	N ART
N REL	REL N
V COMP	COMP V

What determines the head?

- The semantically most salient element
- The category determinant
- The morphosyntactic locus

Parameters

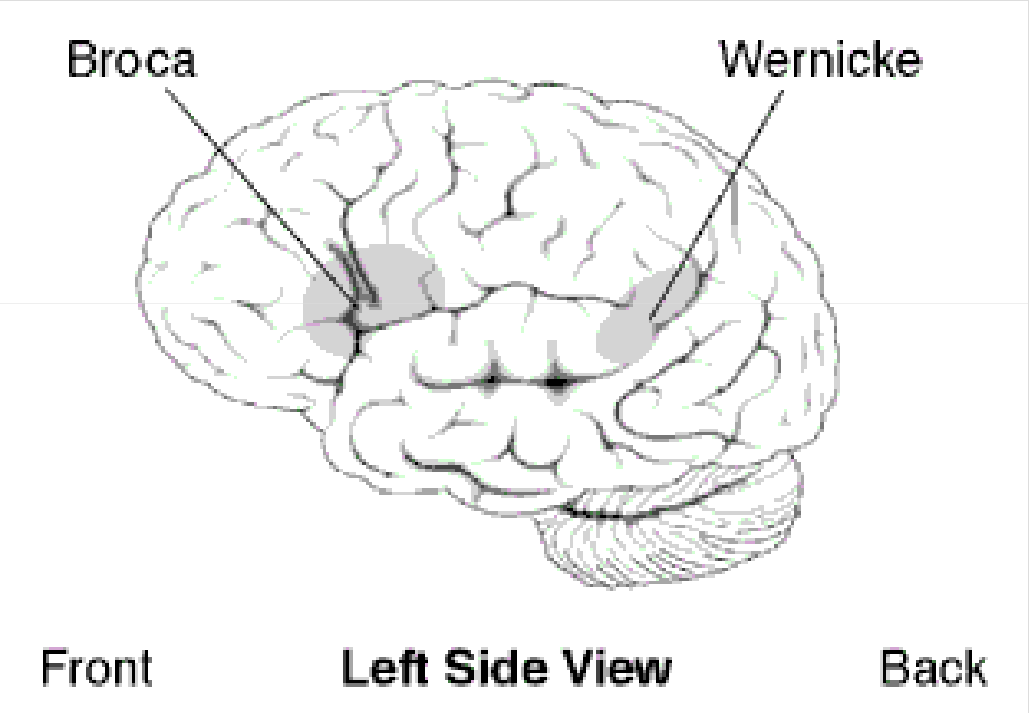


What is the evidence for linguistic innateness?

The innateness hypothesis

The uniqueness of human language

The innateness hypothesis

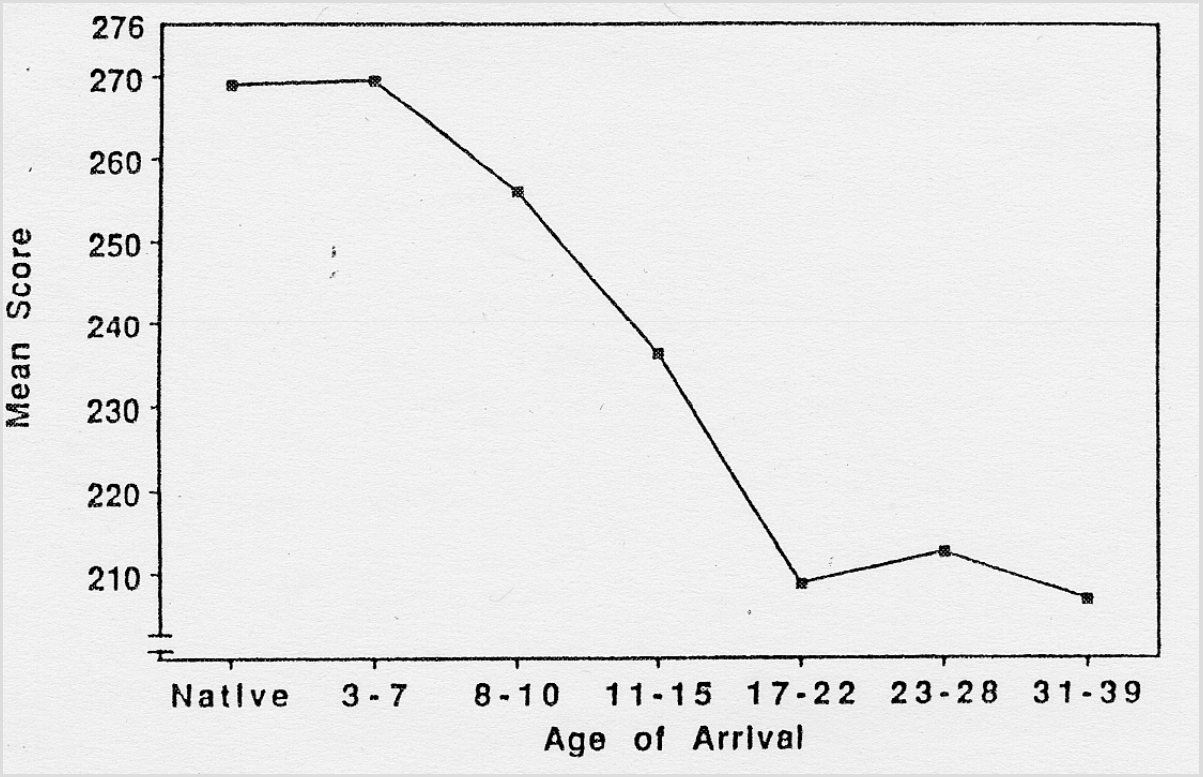


Specialized brain areas (Broca's or Wernicke's area)

The innateness hypothesis

Particular linguistic impairments (SLI children)

The innateness hypothesis



Critical period

The innateness hypothesis

The poverty of the stimulus

- Positive evidence: The natural ‘input’ that children receive
- Negative evidence: explicit linguistic corrections

Chomsky:

There is an enormous gap between the grammatical system of adult language and the “meager and degenerated input” children experience.

The innateness hypothesis

Three arguments against this view:

- The apparent ‘gap’ is a consequence of Chomsky’s view of grammar: Grammar is much more concrete than Chomsky assumes.
- Chomsky underestimates the power of indicative learning. Recent evidence suggests that children are extremely good ‘pattern finders’.
- Chomsky’s view hinges on the assumption that L1 acquisition is very fast; but other researchers have argued that language learning basically never ends.

The no negative evidence problem

All children make mistakes:

CHILD: Mommy goed to bed.

CHILD: Is Mommy is coming?

CHILD: Mommy fell the bottle.

Very often, these are not just sporadic mistakes, but persistent errors. How do children eliminate them?

The no negative evidence problem

Hypothesis: Parents correct their children.

Parents are much more likely to correct the content of their children‘s speech than their grammatical errors. Grammatical errors are only rarely corrected.

The no negative evidence problem

CHILD: Want other one spoon, Daddy.
Father: You mean, you want the other spoon.
CHILD: Yes, I want the other one spoon.
Father: Can you say ‚the other spoon‘?
CHILD: Other … one … spoon.
Father: Say ‚other‘.
CHILD: ‚Other‘.
Father: ‚Spoon‘.
CHILD: ‚Spoon‘
Father: ‚Other spoon‘.
CHILD: ‚Other spoon‘. …
CHILD: Now give me the other one spoon.

The no negative evidence problem

Parents do not explicitly correct their children‘s grammatical errors, but it has been shown that they are likely to repeat their child‘s incorrect utterances (correctly).

CHILD:	Daddy putted on my hat on.
MOTHER:	Yes, daddy put your hat on.

-> Indirect negative evidence

The usage-based approach

General assumptions

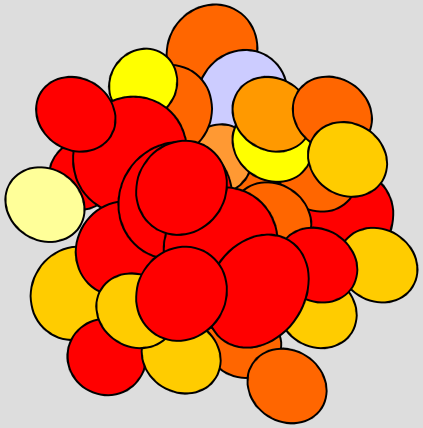
- Language is a dynamic system that emerges from the use of language in social interactions
- Grammar is much more concrete than Chomsky and other nativist researchers assume
- Language acquisition involves general learning meachnisms such as imitation, analogy, automatization, and entrenchment

Imitation

Emulation

Entrenchment

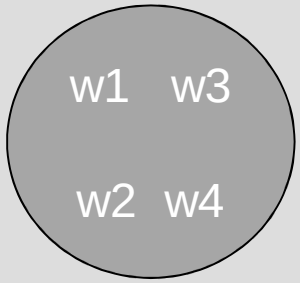
Entrenchment



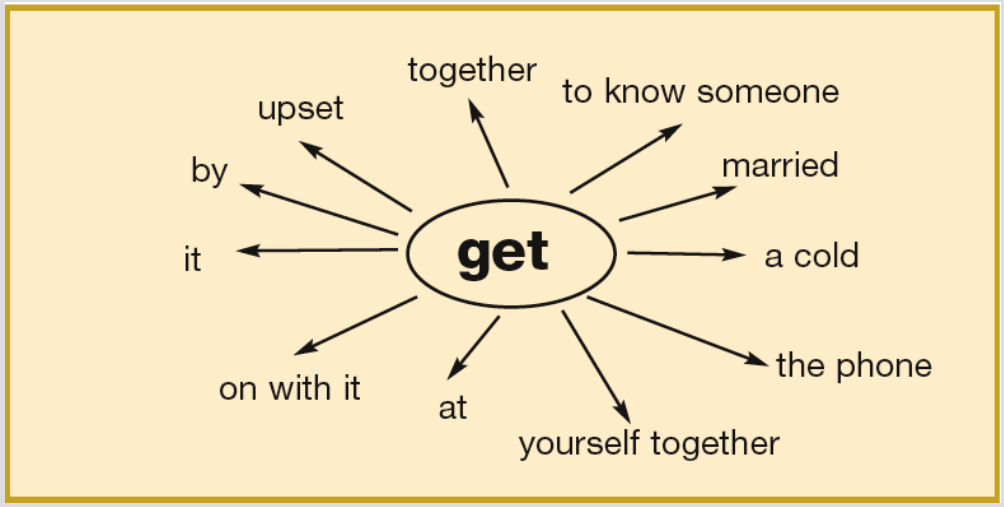
entrenched category

Entrenchment

$W_1\ W_2\ W_3\ W_4\ W_5\ \ldots.$



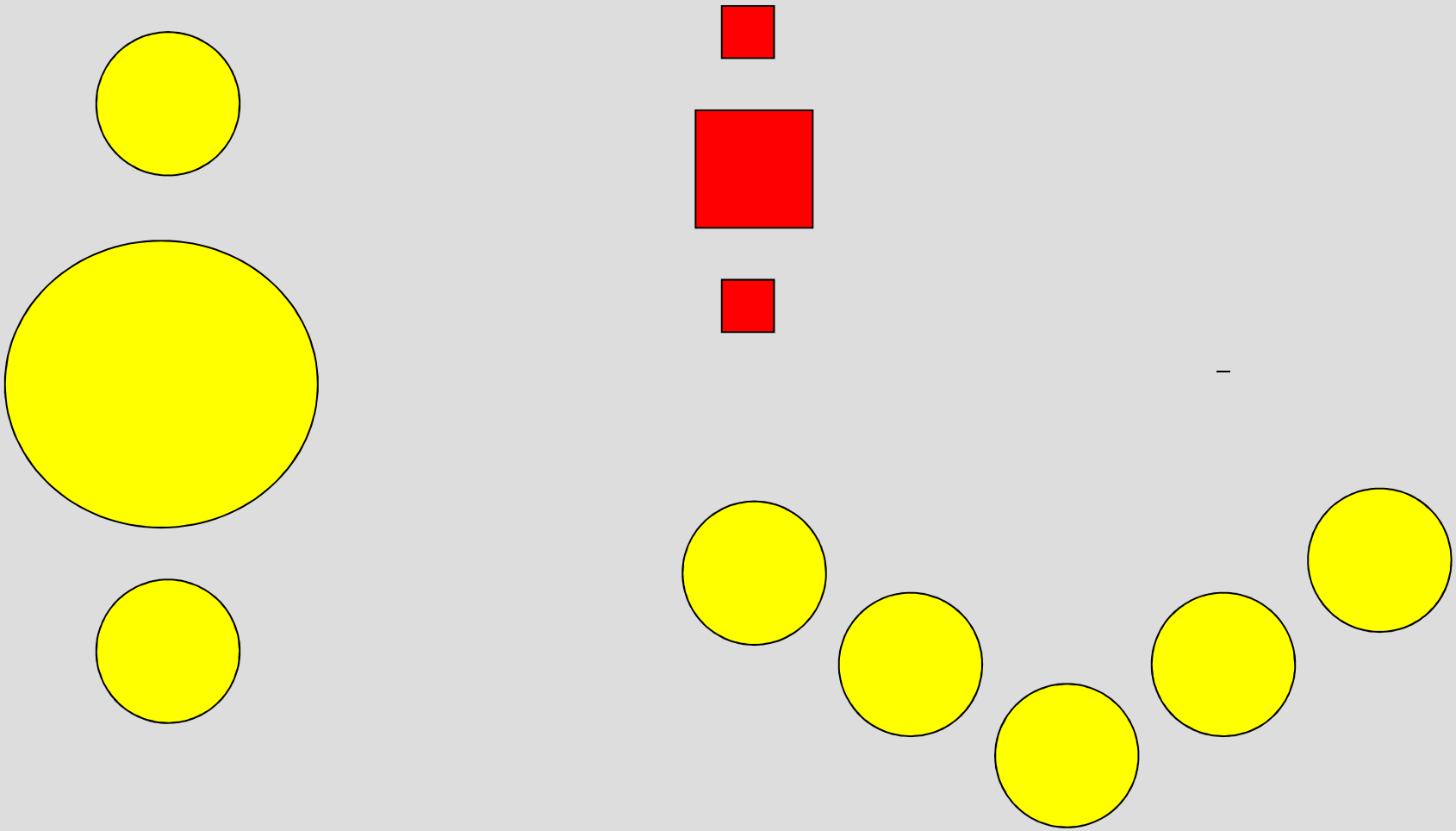
Frequently used strings of linguistic elements are converted into chunks (i.e. collocations, chunks)



Analogy

Walk	->	Walked
Talk	->	Talked
Cook	->	Cooked
Click	->	Clicked
Meek	->	Meeked

Analogy



Summary

Nativist theories	Learning theories
• Grammar is innate	• Grammar is not innate

Summary

Nativist theories	Learning theories
• Grammar is innate • Language-specific learning mechanisms i.e. parameter-setting	• Grammar is not innate • General learning mechanisms e.g. analogy and automatization

Summary

Nativist theories	Learning theories
• Grammar is innate • Language-specific learning mechanisms i.e. parameter-setting • Grammatical development needs very little data	• Grammar is not innate • General learning mechanisms e.g. analogy and automatization • Grammatical development needs robust data

Construction grammar

Generative grammar

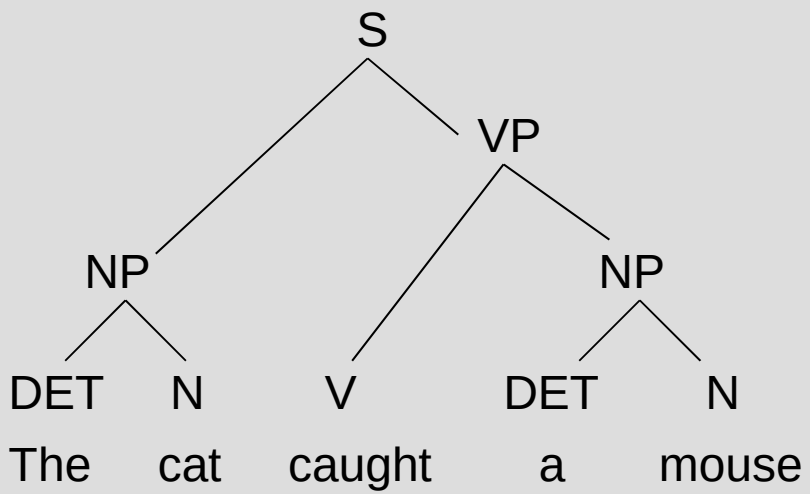
The autonomy of syntax: Syntactic structure does not have meaning.

(1) Colorless green ideas sleep furiously.

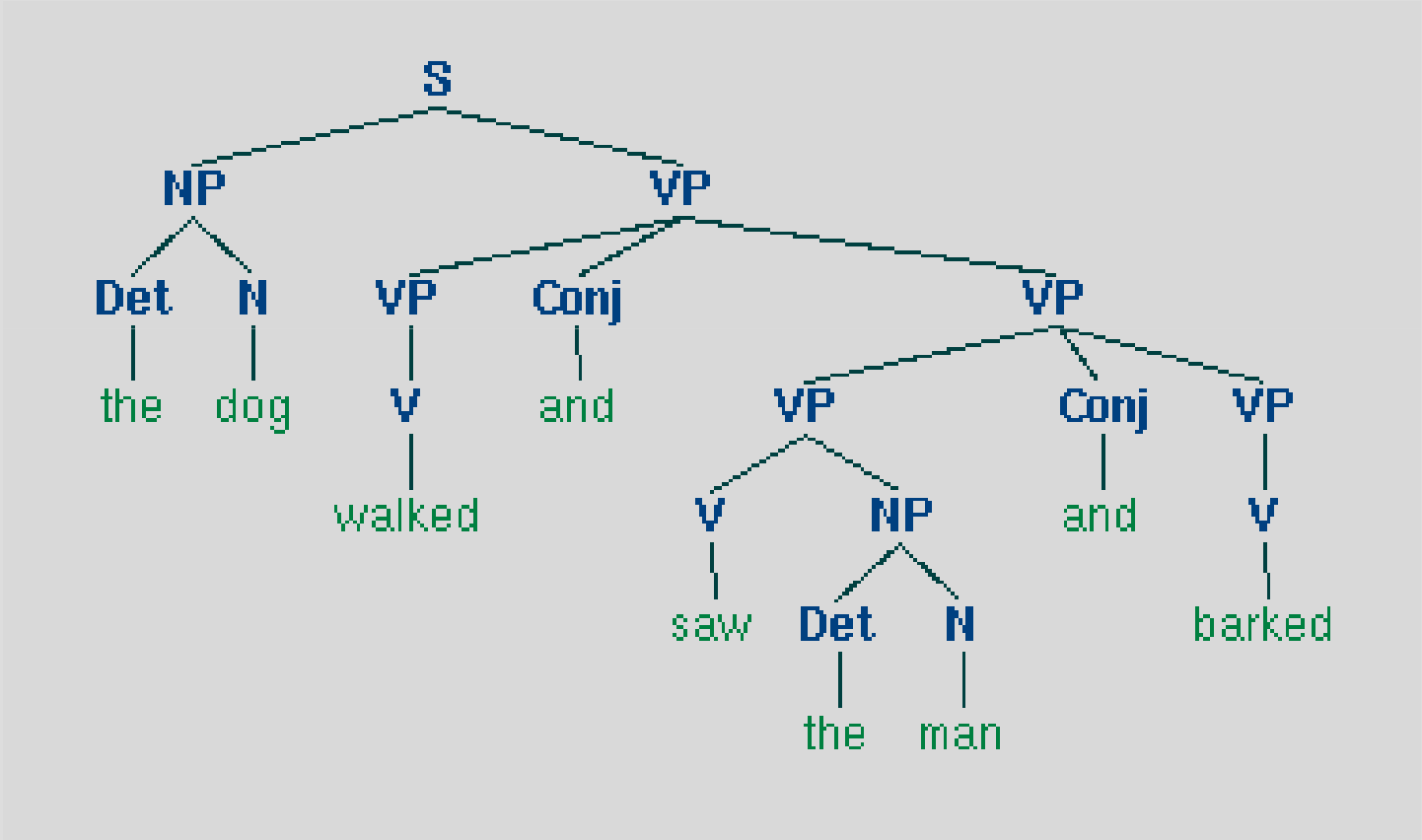
Categories and rules: Grammar consists of discrete categories and rules.

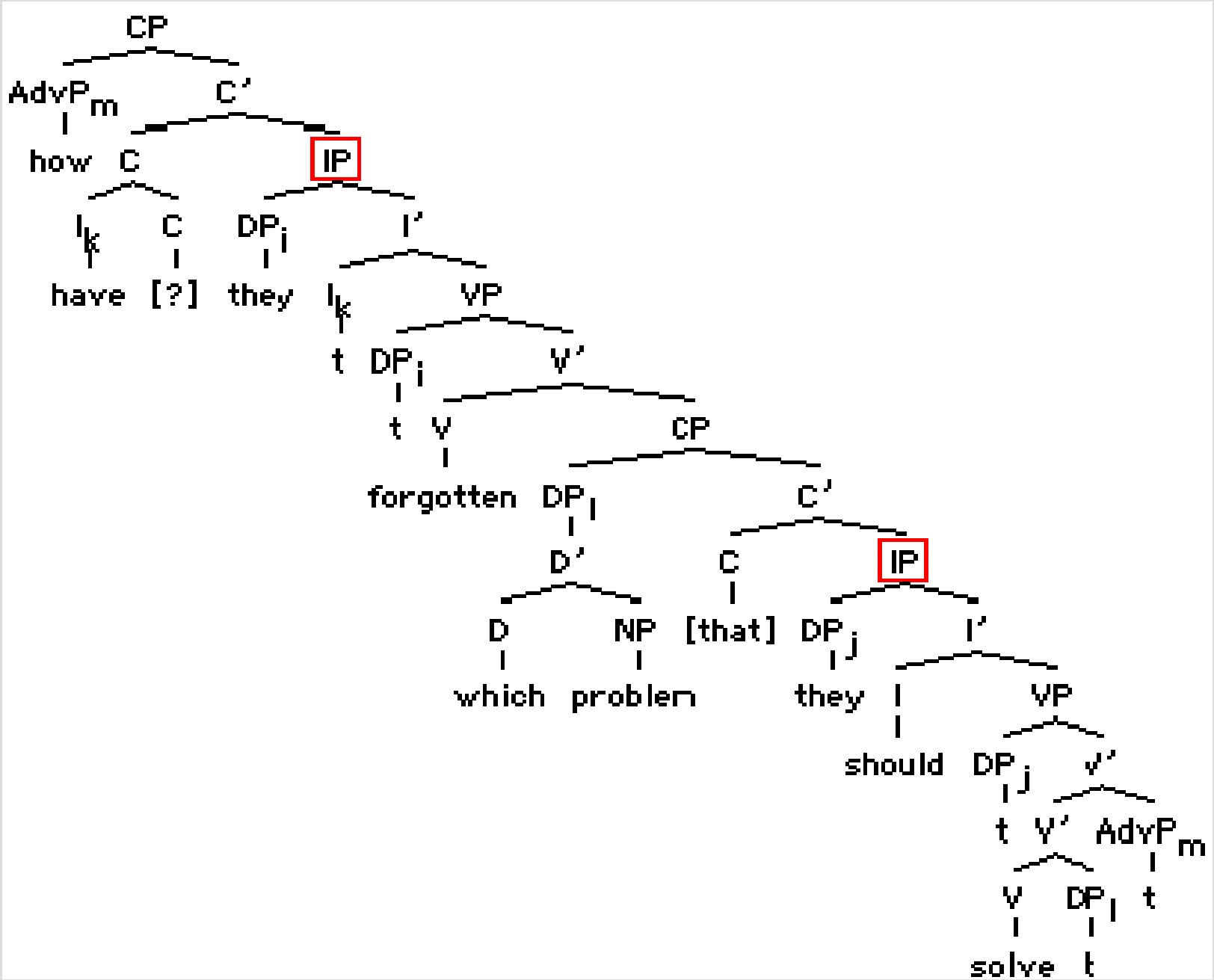
Categories: N, V, NP, PP

Rules: NP $\rightarrow$ DET N, VP $\rightarrow$ V NP



Generative grammar




CP
AdvP m
C′
how
C
IP
I k
C
DP i
I′
have
[?]
they
I k
VP
t
DP i
V′
t
V
CP
forgotten
DP l
C′
D′
C
IP
D
NP
[that]
DP j
I′
which
problem
they
VP
should
DP j
v′
t
V′
AdvP m
V
DP l
t
solve
t

Construction grammar

Grammar consists of constructions.

A constructions is a holistic grammatical pattern that consists of at least two linguistic elements, two words or phrases, that are associated with a particular function or meaning.

(1) Open the door!

- Uninflected word form
- No overt subject
- Directive speech act

Construction grammar

(1) The meal was cooked by John.

- The subject functions as patient
- The verb occurs in a particular form
- The by-phrase denotes the actor

Construction grammar

Constructions are ‘big words’ (Dabrowska 2000).

Like words constructions combine a particular form with a particular meaning.

[sun]


V_{base} [$NP_{non\text{-}subject}$]!
Directive speech act

Usage-based construction grammar