Cognitive approaches to grammar: Generative grammar

Cognitive Linguistics
Holger Diessel

1. Generative Grammar

Chomsky’s critique of behaviorism

Generative grammar started in the late 50th with Chomsky’s critique of behaviorism. The behaviorists thought that it is impossible to study cognitive or psychological phenomena. Science, they argued, should concentrate on the observable facts. Observable is the relationship between *stimulus* and *response*, i.e. if we study social or cognitive phenomena we can observe that a certain event A (i.e. the stimulus) brings about event B (i.e. the response).

![diagram]

What social scientists, including linguists, should not try to do, according to the behaviorists, is to speculate about what’s going on in the black box, i.e. the psychological mechanisms that relate stimulus and response.

Chomsky criticized this approach. He argued that the really interesting aspects of all social phenomena, including language, are psychological or cognitive. The fact that psychological phenomena are not directly observable should not prevent us from studying them. On the contrary, Chomsky argued that linguists should concentrate on the study of *mental grammar*.

Although Chomsky does not call his approach ‘cognitive’, generative grammar is a cognitive theory of language. Like cognitive linguists, generative linguists are interested in the cognitive or psychological foundations of language; however, the two approaches make radically different assumptions about the cognitive organization of grammar.

Central assumptions of generative grammar

1. Linguistic structure can be studied independently of meaning.

   Colorless green ideas sleep furiously.
Chomsky argued that every native speaker of English will judge this sentence grammatical despite the fact that it is meaningless, i.e. it seems that we are able to judge the structure of sentences independently of their meaning.

2. Grammar is fully compositional

According to Chomsky, grammar consists of linguistic categories and rules that combine the categories to larger units.

Categories: Parts-of-speech Phrasal categories
N, V, DET NP, VP, S

Rules:
NP → DET N
VP → V NP
S → NP VP

3. Grammar is modular

According to Chomsky, language (or grammar) consists of separate compartments or modules: the phonological module, the morphological module, and the semantic module. Each module has its own categories and rules that are in principle independent of each other.

4. Grammar is innate

Generative grammarians assume that children are born with an innate universal grammar.
2. The meaning of grammatical elements

The meaning of grammatical morphemes

Linguistic expressions are commonly divided into two types, lexical expressions and grammatical markers. Lexical expressions subsume the major parts-of-speech: nouns, verbs, and adjectives. Grammatical markers comprise elements such as articles, prepositions, and bound morphemes.

Cognitive linguists have argued that grammatical expressions have meaning, but that their meaning is radically different from the meaning of lexical expressions: grammatical markers provide the “conceptual framework” or the “scaffolding” for the major concepts that are expressed by lexical expressions.

Grammatical elements do not encode the follow features:
1. magnitude
2. color
3. material
4. shape
5. sense-motor activities (i.e. they do not indicate the manner of movement, taste or smell of an object, the way an object is manipulated)

What do grammatical elements encode?
1. spatial and temporal relationships
2. figure-ground organizations
3. patterns of distribution (single-multiple)
4. activation status (activated–not activated in previous discourse)
5. aspects of causality
6. aspects of modality
7. relationships between linguistic elements

(1) That’s the book that the teacher recommended.

a. that deictic expression, anchors the referent in the speech situation relative to the speaker’s location
b. ’s copula, indicates a formal link between that and the book
c. the def. article, indicates that the hearer is supposed to be able to identify the subsequent referent
d. that relativizer, indicates that the preceding noun is elaborated by the following clause
e. the definite article
f. –er derivational morpheme, indicates that an activity is construed as a person or agent performing the activity denoted by the verb stem
g. –ed inflectional morpheme, indicates that the sentence refers to an event in the past