

Structural Processing (1)

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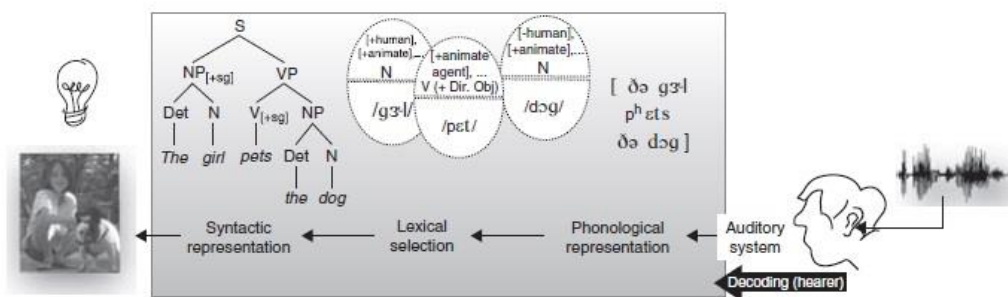
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The Psychological Reality of Syntactic Structure

Syntactic units (e.g. subject NPs and predicate VPs)

are **NOT labeled** as such in the **signal**. Yet psycholinguists think that hearers systematically compute syntactic structure while processing sentences, as illustrated below:



(The clause as a processing unit)

Clause boundary: the location where a new clause begins.

Compare these two sentences:

- In her hope of marrying Anna was surely impractical.
- Your hope of marrying Anna was surely impractical.

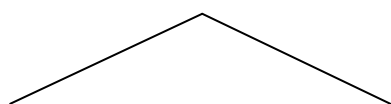
During listening, your mind “cuts” the received auditory input into **clauses** (segments). This process helps you understand auditory signal.

(Structural ambiguity)

Structural ambiguity: one sentence with more than one meaning.

For example:

The man saw the boy with the binoculars



(the boy is carrying binoculars) (the man saw the boy using binoculars)

Often, an ambiguous sentence can be **disambiguated** when put into context

Building Structure:

During the process of perception, the brain works like a **parser** (**parsing is the mental process of building syntactic structure out of the linear set of words during listening to texts**).

There are properties of the parser:

- It prefers **simple structures** rather than complex structures
- It computes relationships between words **rapidly and efficiently**
- It **breaks down complex sentences** to simpler sentences
- It responds **differently** to morpho-syntactic violations (e.g. syntactically wrong sentences)

(**Gaps** and **fillers**)

One function of the syntax is to move elements of a sentence around. An element that has been moved is called a **filler**, and it has left a gap at its original position:

Mike drove the red car
Which car did Mike drive []?

[**filler**] [**gap**]

In order to create structures that represent sentence meaning, when it encounters a filler, **the parser must identify the location for its gap**.

(pronominal referents)

Pronouns refer to noun phrases, the job of the parser is to **locate** which NPs these pronouns refer to:
The teacher saw **the student** and asked **him** to do an extra homework.

Exercise

The parser:

- A. Computes relations between words
- B. Prefers simple structures
- C. Responds to morpho-syntactic violations differently
- D. All of the previous items are correct

The answer is (D).