Theta Roles

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Motivation

**Problem with X-bar theory**

X-bar theory also generates sentences that are not acceptable or grammatical.


(2) a. Jennie smiled.
   b. *Jennie smiled the breadbox.

(3) a. Traci gave the whale a jawbreaker.
   b. *Traci gave the whale.
   c. *Traci gave a jawbreaker.
Subcategorization (or selection)

- When you see a preposition, most likely it will be followed by an NP. ⇒ This preposition subcategorizes for or selects an NP.
- A verb can subcategorize for an NP as well.

```
VP
  \ /
  V'
    \ /  \\ /  \\ / \\
V^0 NP NP
  \         \         \\     \\     \
   give+ the whale a jawbreaker
```
Subcategorization (or selection)

- When you see a preposition, most likely it will be followed by an NP. ⇒ This preposition **subcategorizes** for or **selects** an NP.
- A verb can **subcategorize** for an NP as well.

What is the structural relationship between the verb and the NPs they subcategorize for?

**Hyp:** A head **subcategorizes** for its sister(s).
The X-bar schema captures certain locality conditions.

- There are certain relations that a head can enter only with its specifier, complement or adjunct.
- And not with anything inside its specifier, complement or adjunct.

Example

A THEME role is given by a verb to its complement NP (but not to any NP inside its complement):

(4)  
A. I believe her  
B. I believe that she is the thief  
C. I believe her brother
Valence and selectional restrictions

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V[DP_.]$ (intransitive)</td>
<td>leave</td>
</tr>
<tr>
<td>$V[DP_.DP]$ (transitive type 1)</td>
<td>hit</td>
</tr>
<tr>
<td>$V[DP_.DP/CP]$ (transitive type 2)</td>
<td>ask</td>
</tr>
<tr>
<td>$V[DP_.DP DP]$ (ditransitive type 1)</td>
<td>spare</td>
</tr>
<tr>
<td>$V[DP_.DP PP]$ (ditransitive type 2)</td>
<td>put</td>
</tr>
<tr>
<td>$V[DP_.DP DP/PP]$ (ditransitive type 3)</td>
<td>give</td>
</tr>
<tr>
<td>$V[DP_.DP DP/PP/CP]$ (ditransitive type 4)</td>
<td>tell</td>
</tr>
</tbody>
</table>

- The subclassification of verbs must constitute part of native speakers’ lexical knowledge.
- The child acquiring English will have to learn not only the syntactic category but also subcategory of the words.
**Thematic relations (1)**

We use thematic relations to describe the role that the argument plays with respect to the predicate.

**Agent**

The initiator or doer of an action.

(5) a. Ryan hit Andrew.
    b. Michael accidentally broke the glass.

**Experiencer**

Arguments that feel or perceive events.

(6) a. Leah likes cookies.
    b. Lorenzo saw the eclipse.
    c. Syntax frightens Kenna.
**Theme**

Entities that undergo actions, are moved, experienced or perceived.

(7) a. Alyssa kept her syntax book.
    b. The arrow hit Ben.
    c. The syntactician hates phonology.

**Goal**

The entity towards which motion takes place is called a goal. Goals may involve abstract motion.

(8) a. Doug went to Chicago.
    b. Dave was given the piña colada mix.
Recipient

A special kind of goal. Recipients only occur with verbs that denote a change of possession.

(9) a. Mikaela gave Jessica the book.
   b. Daniel received a scolding from Hanna.

Source

The entity from which a motion takes place.

(10) a. Bob gave Steve the syntax assignment.
   b. Stacy came directly from sociolinguistics class.
Thematic relations (4)

Location
The place where the action occurs.
(11)  a. Andrew is in Tucson’s finest apartment.
     b. We’re all at school.

Instrument
The object with which an action is performed.
(12)  a. Chris hacked the computer apart with an axe.
     b. This key will open the door to the linguistics building.
Beneficiary
The one for whose benefit an event took place.
(13) a. He bought these flowers for Aaron.
   b. She cooked Matt dinner.

Any given DP can have more than one thematic relation.
(14) Jason gave the books to Anna.
Agent+Source.

Theta role
Theta roles are bundles of thematic relations that cluster on one argument.
Thematic grid

The identification of thematic relations is not always easy, though intuitively the idea should be clear.

- The information as to the semantic relationship between the predicate and its arguments is part of the lexical knowledge of the native speaker and should hence also be recorded in the lexicon.
- Rather than merely specifying the number of arguments of a predicate, one may envisage a representation which specifies the type of thematic roles of these arguments.
- In GB Theory this is represented by means of a thematic grid.
For each argument that the predicate requires, there is a column.

Each of these columns represents a theta role.

External theta role: the one assigned to the subject and indicated by underlining.

Internal theta role: others.

No adjuncts: seem to be entirely optional.
The theta criterion (1)

The theta criterion

- Each argument is assigned one and only one theta role.
- Each theta role is assigned to one and only one argument.

Example

<table>
<thead>
<tr>
<th>love</th>
<th>Experiencer</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DP</td>
<td>DP</td>
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</tbody>
</table>

(15) *Megan$_i$ loves.

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</thead>
<tbody>
<tr>
<td></td>
<td>DP</td>
<td>DP</td>
</tr>
<tr>
<td>i</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The theta criterion (2)

(16) \( \text{Megan}_i \text{ loves } \text{Kevin}_j \).

\begin{tabular}{|c|c|}
  \hline
  \text{love} & \text{Experiencer} & \text{Theme} \\
  \hline
  \text{DP} & i & j \\
  \hline
\end{tabular}

(17) *\( \text{Megan}_i \text{ loves } \text{Jason}_j \text{ Kevin}_k \).

\begin{tabular}{|c|c|c|}
  \hline
  \text{love} & \text{Experiencer} & \text{Theme} \\
  \hline
  \text{DP} & i & j & k \\
  \hline
\end{tabular}
The lexicon contains all the irregular and memorized parts of language. Each lexical entry must contain at least the following information:

- the meaning of the word
- the syntactic category of the word (N, V, A, P, T, C, etc.)
- the pronunciation of the word
- exceptional information of all kinds (such as morphological irregularities)
- the theta grid (argument structure).

When we learn a new word, we memorize all above information

- UG is our innate knowledge of language
- Native speaker’s lexical knowledge is not innate.
The projection principle

The lexical items play an important part in its syntactic representation.

- The lexical category of the head of a phrase determines the category of the phrase.
- The thematic structure of a word, encoded in the theta grid, determine the minimal components of the sentence.

The Projection Principle

Lexical information is syntactically represented at all levels.

Syntactic structure is largely the trivial output of the combination of lexically encoded instructions with general principles which guide the construction of hierarchical constituent structure.
Reading

  - § 8.

* 徐列炯, 沈阳. 1998. 《题元理论与汉语配价问题》