Theta-Roles and Lexicon

Theta-Criterion, Projection Principle, Extended Projection Principle
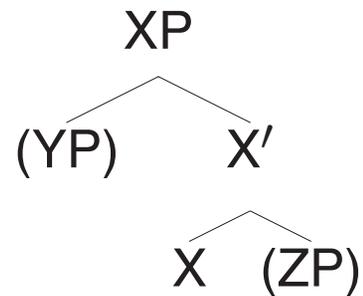
Ling 322

Read *Syntax*, Ch. 8

(Lecture notes based on Andrew Carnie's notes)

Overgeneration of X-bar Theory

- X-bar Schema

```
                XP
              /    \
          (YP)      X'
                  /    \
                 X     (ZP)
```

- Overgeneration

(1) a. The linguist loves wheat beer.
     b. The linguist laughed.

(2) a.   * The linguist loves.
     b.   * The linguist laughed the philosopher.

Sometimes an object is required, and sometimes it is not. What is responsible for this?

Using the Lexicon to Constrain X-bar Theory

- Whether an object is required or not is a property of the particular verb.

- Information about particular properties of verbs is contained in our mental dictionary – Lexicon.

- Lexicon stores information about particular words.

  – pronunciation of word

  – morphological irregularities

  – meaning of word

  – requirements about other words they occur with

Argument Structure

- (Fregean) <u>Predicate</u>: Defines the relation between the individuals being talked about and the real world, as well as each other.
<u>Argument</u>: The central entities (including abstract ones) participating in the relation.

The linguist	*loves*	*wheat beer*
argument	predicate	argument

- <u>Argument Structure</u>: specifies the number of arguments a predicate requires. (Adjuncts are never counted in the list of arguments.)

  intransitives, transitives, ditransitives

- <u>Subcategorization Restriction</u>: Predicates control the category of arguments.

  (3) a. I asked a question.   I asked if you know the professor.
       b. I hit the ball.   *I hit that you knew the answer.

- <u>Selectional Restriction</u>: Predicates limit the semantic properties of arguments.

  (4) a.   # The bolt of lightening killed the rock.
       b.   # My toothbrush loves raisins.

Thematic Relations

Defines semantic role a participant plays in the situation described by the predicate.

- Agent: initiator of the action, could be capable of volition.

    (5)　a.　**Brad** hit Andrew.
    　　　b.　**A falling rock** hit Andrew.

- Experiencer: experiencer or perceiver of the event.

    (6)　a.　**Becki** saw the eclipse.
    　　　b.　Syntax frightens **Jim**.
    　　　c.　**Susan** loves cookies.

- Theme (patient): the entity that undergoes actions, are moved, experienced or perceived.

    (7)　a.　Susan loves **cookies**.
    　　　b.　A falling rock hit **Terry**.
    　　　c.　The syntactician bought **a phonology textbook**.

Thematic Relations (cont.)

- Goal: the entity towards which motion takes place. Goals may involve abstract motion.

  (8)   a. Millie went **to Chicago**.

          b. **Travis** was given a semantics article.

- Recipient: a special kind of goal that involves a change of possession.

  (9)   a. Julie gave **Jessica** the book.

          b. **Roy** received a scolding from Sheryl.

- Source: the opposite of goal, entity from which movement occurs.

  (10)   a. **Bob** gave Steve the syntax assignment.

          b. Stacy came directly **from phonology class**.

Thematic Relations (cont.)

- Location: the place where action occurs.

  (11)   a. Chung-hye works **in SFU's finest department**.

            b. We are all staying **at school**.

- Instrument: the entity with which action occurs.

  (12)   a. Pat hacked the computer apart **with an axe**.

            b. **This key** will open the front door to the building.

- Benefactive: the entity for whom the action occurs.

  (13)   a. He bought these flowers **for Jason**.

            b. She made **John** a cake.

Theta-Role

- Theta-role (θ-role) is a bundle of thematic relations associated with a particular argument.

<u>Brian</u>	gave	<u>the book</u>	<u>to Mary</u>
agent		theme	recipient
source			goal

- A predicate restricts the number and type of theta-roles, each instantiated by an argument.

  (14) a. Brian gave the book to Mary.

  b. * gave the book to Mary.

  c. * Brian gave the book.

  d. * Brian gave to Mary.

  e. * Brian gave the book the pen to Mary.

  f. * The rock gave the sky with the fork.

  Too many, too few, or the wrong kinds of arguments result in ungrammaticality.

Theta-grid

- We can now encode selectional restrictions of a predicate with theta-roles. We will use theta-grid to represent this information, argument structure and subcategorization restriction.

give

agent	theme	goal
DP	DP	PP
i	j	k

- For convenience, we will label the theta-role of an argument with the most prominent thematic relation associated with that argument.

- The indices in the second row keeps track of the arguments in a sentence. When a predicate appears in an actual sentence, we mark the constituent bearing the particular theta role with that index. You can think of this process as a predicate assigning a theta-role to each argument.

(15)   [Brian]$_i$ gave [the book]$_j$ [to Mary]$_k$.

- Adjuncts are not included in theta-grids.
  They are syntactically optional, describing less central properties of a situation.

Lexicon and Syntax

- Lexicon contains theta-grid of predicates.

  This kind of information in the lexicon determines syntactic structure to a large extent.

- Projection Principle:

  Lexical information (such as theta-roles) is syntactically represented.

- Theta-Criterion:

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

  (16) a. * The Romans destroyed.
        b. * The Romans destroyed the city the castle.

Expletive Subject

- Expletive *it*:

  Does not refer to any discourse entity. Is not an argument of the predicate. Does not have a theta-role. Can't be omitted.

  (17)　a.　　That the pig had been stolen surprised John.

  　　　b.　　It surprised John that the pig had been stolen.

  　　　c.　　* Is surprised John that the pig had been stolen.

  In contrast to regular pronouns, expletive *it* cannot be questioned or stressed.

  (18)　a.　* What surprised John that the pig had been stolen?

  　　　b.　* IT surprised John that the pig had been stolen.

  (19)　a.　　It had been stolen.

  　　　b.　　What had been stolen?

  　　　c.　　IT had been stolen.

Expletive Subject (cont.)

- Expletive *there*: Does not have locative meaning. Is not an argument of the predicate. Does not have a theta-role.

(20) a.   Unicorns are standing in the garden.

  b.   There are unicorns standing in the garden.

(21) a.   Unicorns are standing right here.

  b.   There are unicorns standing right here.

Unlike an adjunct of place, expletive *there* cannot be questioned, be stressed, or be omitted.

(22) a.   * Where are unicorns standing right here?

  b.   * THERE are unicorns standing right here.

  c.   * are unicorns standing right here.

(23) a.   I saw Bill there last week.

  b.   A: Where did you see Bill last week? B: There.

  c.   I saw Bill THERE last week.

  d.   I saw Bill last week.

Expletive Subject (cont.)

* From a semantic point of view, expletive subjects are unnecessary.

  They serve a syntactic purpose of filling in the subject position when nothing else is available.

* Expletive Insertion: Insert an expletive pronoun into [Spec,TP], when there is no other subject.

Extended Projection Principle

- Predication: the **syntactic** relation between a subject and an Aristotelian predicate (predicate phrase).

  Every clause is an instance of a predication relation.

  Every clause has a subject (Subject Requirement, Extended Projection Principle).

- Subject requirement: Extended Projection Principle (EPP)

  A sentence must have a subject, regardless of its argument structure; i.e., [Spec,TP] position must be filled by a subject, whether it has a theta-role or not.

Model of Syntax

The Lexicon
(e.g., Theta–grid)

The Computational Component

Syntactic derivation through Merge
of phrases and Movement

      – X–bar theory

      – Theta–Criterion

      – Expletive Insertion

      – EPP

      – Binding Conditions

Output