

Week 4, Lecture 1 and 2
Theta-theory, the EPP

1. Review

→ **X' bar theory and parametric variation in word order**

→ how do we derive SOV by modifying our X' theory?

→ why is it predicted that languages with SOV word order should have post-positions?

→ Given what was said so far about the structure of the NP, where should the determiner in an NP appear in an SOV language? Why?

→ What would have to be changed to have the determiner on the right of the noun?

→ **Reviewing some things about movement: movement and traces**

→ **why traces are real. (refer to the notes from last time)**

2. Theta-roles

How do we know that *John hit Bill* is not the same as *Bill hit John*?

→ Crucially, how do we capture this fact in the syntax? The difference between these two sentences is structural. Hence, it must be represented!

Enter: Theta- Theory!

We say that the verb assigns a theta-role = a semantic role = to its subject and (if it has one) its complement. These two NPs are called **arguments of the verb**. The types of theta-roles a verb takes is called **the verb's argument structure**.

John hit Bill

John = agent ; Bill = theme/ patient

We say that a transitive verb takes two arguments; an intransitive one takes only one.

Are all intransitives created equal? – a digression

John danced (a dance) / ran (a marathon) / walked (a mile)

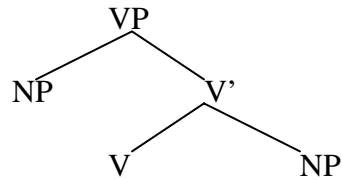
**John fell a nasty fall / arrived a quick arrival / existed a rotten existence*

The lesson: some intransitive verbs seem to be able to take a complement e.g. “dance” while other intransitive verbs cannot do so e.g. “fall”

* this will be relevant soon!*

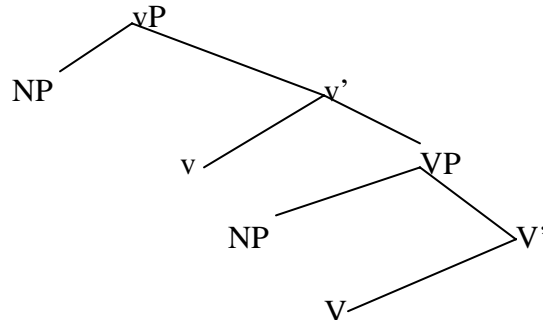
→ end digression

In the syntax, we represent the fact that verbs assign theta-roles (i.e. the verb's argument structure) as follows:



Notice: *the subject of the sentence now originates in spec VP, not spec TP, as we did before. This is known as the ‘VP-internal spec hypothesis’ due to Koopman and Sportiche 1989. The NP raises/ moves to spec TP for reasons that will become clear in the next few meetings. For now we will simply this structure.*

Or in the more modern and more high-tech way:



- The verb assigns the agent theta-role (or we also say “Theta –marks”) the subject and assigns the theme theta-role to the object
- This captures in the syntactic, structural way the conceptual difference between John hit Bill and Bill hit John. In the first sentence John is the agent; in the second, it is the patient/ theme
- The kinds of theta-roles the verb assigns are not limited to agents and themes. It could also include goals “give the book to bill” and experiencers “john is afraid of dogs”. The theta-roles a verb assigns to its complement and subject are specified in what we call the verb’s “theta-grid”

Kill <agent, theme>

Give <agent, theme, goal/recipient>

Fear <experiencer, theme>

→ the theta-role assigned to the subject is the external theta-role; other theta-roles (those assigned to complements) are the internal theta-roles

→ *only complements and specs can have theta-roles; adjuncts never do!*

The Theta-Criterion = Each argument (a referential NP) bears one and only one theta-role and each theta-role must be assigned to one and only one argument (Chomsky 1981). In addition, the verb that has a theta-role to assign to its argument must do so. An un-discharged theta-role causes the sentence to become ill-formed.

Here are some examples

No theta-role for the NP:

(1) *John seems that Bill is tired = it seems to John that Bill is tired.
(‘seem’ does not assign a theta-role, as we shall see in more detail shortly)

(2) *John was eaten the cake = the cake was eaten by John

Two theta-roles for one NP:

(3) * the donut(i) ate __t(i) (meaning ‘the donut was eaten’)

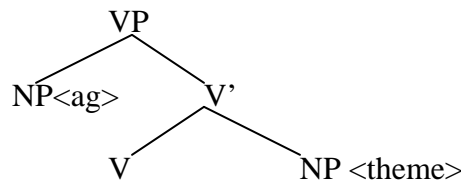
An undischarged theta-role in the verb’s thematic-grid:

(4) The man saw _ (meaning the man saw someone)

Theta-roles are part of the lexical information about the verb
The projection principle =lexical information is syntactically represented at all levels

Linking = the relation between the semantic categories of the arguments of a predicate and their syntactic positions (Pesetsky 1996:2). For example, linking tells us that the Agent of the verb ‘hit’ has to be projected as the subject, not the object.

Agents are linked higher than Patients / Themes (i.e. subjects are linked higher than objects)



Linking is the crucial point at which our conceptualization of events and their participants becomes a part of syntax. I will come back to the topic of linking shortly

→ Knowing what linking is, how can we structurally capture the difference between the two types of intransitive verbs mentioned above? That is, how is ‘run’ different from ‘exist’?

3 Traces and theta-roles

Consider the following sentence

John was eaten by the dog *assume 'John' is a ginger-bread person*
What did John eat?

→ “John” and “what” in the sentences above are moved from their base generated positions (positions where they were merged into/placed into the structure) into other positions in the sentence. But, theta-assignment happens immediately –before movement!

- The level of structure at which elements are merged used to be called D-structure (deep structure) in the early generative theory; now there is no special level. just ‘merge’
- The level of structure which represents the actual word order we see is called the S-structure; We no longer use this particular term, but the idea remains the same: S-structure is the level that we arrive at after applying movements (if we had to apply them). the S-structure is what you see on the surface.

→ Assuming that theta-roles are assigned immediately and then must remain the same throughout the derivation, consider the following question:

- *What can we conclude about the theta-properties of the position **into which** the NPs/wh-words are moved? Can any theta-roles be assigned there? That is, can any theta-roles be assigned in the positions where ‘John’ and ‘what’ wind up?*
- *Why is movement to a theta-assigning position impossible? what in our theory predicts this?*

→ When something moves from its base generated position to a higher position e.g, we say that the moved element and its trace form a chain. The overt NP is the head of the chain and the trace is the foot of the chain.

- *How many theta-roles can there be in a chain? Why should it be so?*

5 Theta-roles and the EPP

Question: do all verbs assign theta-roles to their subjects?

Consider: *It killed John [pointing to a fallen tree]*
I love it!
It is raining
It is likely that John will leave

What killed John?
#/* *What is raining?*

Some verbs do not assign a theta-role to their subject. The subjects like “it” in “It is raining” are called “Expletives” or “pleonastic” pronouns.

Another example is “there” in “There is a man in the garden”. This type of “there” is quite different from the “there” in

John is over there
There is a pink elephant in the room!

Where is John?
**Where is a pink elephant in the room?*

Why is “there” in “there is a man...” there? Well, it’s just ... there.

- There is a rather inelegant axiom in syntax called the Extended Projection Principle [EPP] which says that sentences just gotta have subjects. Even if the verb does not assign a theta-role to it!
- The reason it is inelegant is that it does not seem to be the kind of a basic innocent statement that a true axiom should be, yet, it is also not clear how to reduce it to something else. [Many have tried...]

the EPP = the Extended Projection Principle = languages require subjects.
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→ in some languages, the EPP does not seem to be operant, at least on the surface. That is, there are languages that do not have expletives like ‘it’ or ‘there’ overtly. Can we say that the EPP is ‘off’ in these languages?

→ what other ways to account for the crosslinguistic variation of this kind? Especially, considering that there are V-initial languages that never have subjects preceding the verb, i.e. appearing in the canonical “subject position”.

4. Passives and theta-roles

Returning to the passive for a moment:

- Why is movement to the subject position possible in the passive sentence such as *The donut was eaten by John* but not in the active sentence?
**The donut ate John/ by John = The donut was eaten by John*
- What is the significance of the passive morpheme /-en/ with respect to theta-assignment? Assume that the verb has the same theta-grid (assigns the same theta-roles) regardless of whether it is passive or active?
- Does the answer to the above question also explain the ungrammaticality of **John was stolen the car?* (meaning ‘the car was stolen by John’) Why?

6. On some theta-related problems – from Pesetsky 1996 [advanced topics]

Linking – revisited

When a child learns a particular verb, they also learn the theta-roles it assigns, the category of its complements (CP, NP, PP) [i.e. its subcategorization frame], and the kind of thing its arguments have to be [semantic selection].

A child also learns that the agent of a given verb is linked to the subject position while the patient/theme is linked to the object position.

But, do we learn which theta-roles are linked to which positions on a verb-by-verb basis or do we consider entire classes of verbs and make a generalization?

The second option seems to be more attractive

That is, we say: for all verbs that take an agent/theme, the agent is the subject and the theme is the object.

Now, if this kind of deterministic linking is true for agent/theme verbs, why not extend it to other verbs that take other theta-roles?

Baker 1988:46/ 1997 argues that for the strong universalist answer to this question:

UTAH = Uniformity of Theta Assignment Hypothesis

Identical thematic relationships between items is represented by identical structural relationships between these items at the level of D-structure

A slightly weaker version of this comes from Perlmutter and Postal 1984

UAH = the Universal Alignment Hypothesis

There exist principles of UG which predict the initial relation borne by each [argument] in a given clause from the meaning of the clause

(Quoted in Pesetsky 1996:9)

- Which one of the two options should we choose and why?
- First, how does UTAH differ from UAH? Does UAH require identical syntactic linking patterns for identical semantic relationship?
- What problems do we expect to arise for the stronger version of UTAH?

I. Consider the following pairs of sentences:

(10)

- a. John melted the ice
- b. The ice melted

(11)

- a. John opened the door

(12)

- a. John sank the ship
b. The ship sank

- Why are the above sentences problematic?
- What possible solutions can we offer here to salvage UTAH?

→ semantic

→ syntactic

II. Subjects vs. Objects Experiencers - more problems for UTAH (from Pesetsky 1996:18)

(13)

- a. John fears the dogs
b. The dogs frighten John

(14)

- a. Bill was angry at the article
b. The article angered Bill

(15)

- a. The syntactician liked the paper
b. The paper pleased the syntactician

(16)

- a. Lisa resented Bart's attitude
b. Bart's attitude embittered Lisa

(17)

- a. Homer rejoiced at the sight of the donut
b. The sight of the donut exhilarated Homer

(18)

- a. Homer's appearance puzzled Marge
b. Marge puzzled over Homer's appearance

→ the underlined argument in the (a) sentences is called an experiencer, which is linked to the subject position here.

→ looking at the sentences in (b) which position is the experiencer linked to?

- Why are the above verbs problematic for UTAH? That is why the schema below difficult to reconcile with the main premise of UTAH?

(a) Predicate(Experiencer, Theme) = Subject Experiencer predicates

(b) Predicate(Theme, Experiencer) = Object Experiencer predicates

- What possible solutions can be offered here?
Syntactic? [Belletti and Rizzi 1988]

Semantic? [Pesetsky 1996] =

→ Consider the following examples from Pesetsky 1996:1. Do (a) and (b) mean the same thing?

(19)

- John worried about the TV
- The TV worried John

(20)

- John feared the fat cat
- The fat cat frightened John

→ Now consider the following sentences and tell me which ones are tautologies / contradictions and which are not:

(21)

- Because John feared the ghost, the ghost frightened John
- Because the ghost frightened John, John feared the ghost

(22)

- John worried about his mother's poor health, but his mother's poor health did not worry John
- His mother's poor health worried John, but John did not worry about his mother's poor health.

- why are the sentences in (21) and (22) significant?

-> Thematic Hierarchy: the hierarchy which tells us which theta-role is projected higher:

→ if we only have theme and experiencer to describe the above verbs we cannot get a consistent hierarchy for all experiencer verbs. Why not?

→ Decomposing theta-roles:

Causer > Experiencer > Subject Matter / Target (Pesetsky 1996)

→ A problem for Pesetsky: if causer \neq subject matter then the two are assigned to distinct arguments and should be able to co-occur in the same predicate. But they don't always (Pesetsky 1996: 60):

(23)

- *the article in the Times angered Bill at the government
- *The Chinese dinner satisfied Bill with his trip to Beijing
- *The TV worried Bill about the veracity of John's alibi
- * The distant rumbling frightened Mary of another storm

→ if Causer is a different theta-role than SM/ Target, why are the above sentences completely ill-formed? To find out the answer to this question read Pesetsky's book *Zero Syntax*.

In sum, it is worth to think about Why UTAH is desirable and how it relates to the general concern of Reductionism in linguistics

III. Double object verbs and linking

Why would the following alternations in English present a problem of theta-theory?

- a. John gave a book to Bill
- b. John gave Bill a book