

# Transformational Grammar

**SS, EST, GB, MP**

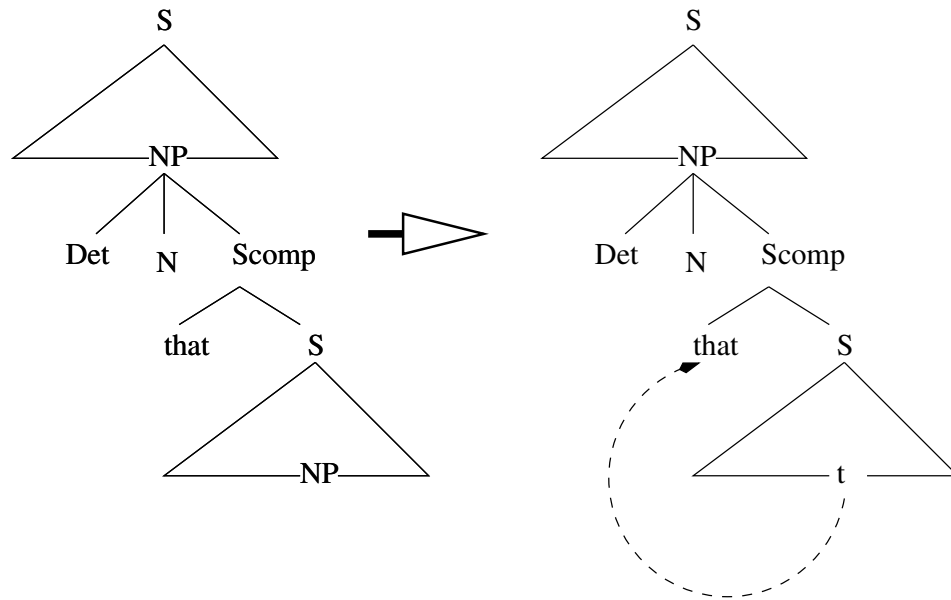
# Syntactic Structures 1957

- Base component provides non-recursive phrase structure rules of a language (because recursion presumes combining two structures of the same type, and that is the task of generalised transformations--cf. below)
- Obligatory transformations turn base structures to **kernel sentences** (kernel in the sense that without the transformation, the output of base is not a sentence)
- Kernel sentences are modified by **singularly transformations** (i.e., take **one** kernel and produce **one** modified sentence)
- Kernel sentences are **combined** to produce more sentences by **generalised transformations** (i.e. take more than one kernel, and produce one combined sentence). These come in cycles (hence one's output can be other's input).
- Chomsky's claim was that this organisation simplifies grammar and eliminates redundancy.
- Almost 50 years after SS, most theories have gotten rid of singularly transformations, and reconsidered the place of recursion in the theory, but the challenge is still on.

- Singularly transformation: passive  $[_S NP_1 - Aux - V - NP_2] \Rightarrow$   
 $[_S NP_2 - Aux + be + en - V + NP_1]$
- This means that passive is not a kernel sentence; it is derived from active (we'll see that not all theories agree)

There are also languages in which passive-like constructions are more basic (e.g. Dyirbal, Inuit)

- Generalised transformation: relativisation



- Ross's (1967) formulation:
 

W	[ <i>NP</i>	NP	[ <i>S</i>	X	NP	Y ]]	Z	
1	2	3	4	5	6	⇒ (OBLIG)		
1	2	4+3	0	5	6			

Condition: 2 = 4

- Ross's **Complex NP Constraint**: no element contained in a sentence dominated by a noun phrase with a lexical head may be moved out of that phrase by a transformation.

- Sentences below differ only in that the object of believe has a lexical head in the former; their relativisation differs:

a. I believed the claim that Otto was wearing this hat.

b. I believed that Otto was wearing this hat.

a'. \* The hat which I believed the claim that Otto was wearing is red.

b'. The hat which I believed that Otto was wearing is red.

- The constraint predicts that we can't relativise out of a relative clause (because an RC is an S dominated by an NP with a lexical head):

\*The dog that the man who hit howls.

compare: The dog that the man hit howls.

- It similarly predicts the ungrammaticality of questioning an element of RC (NB: these are purported universal constraints, not some peculiar property of English):

Phineas knows a girl who is jealous of Maxime.

\*Who does Phineas know a girl who is jealous of?

- What if an RC can be dominated by an NP with no lexical head? The constraint ought not apply (headless relatives in Turkish?)

Haberleri takip eden bilir. Takip edenin bilir sanıldığı haberler.

- But complex NPs with lexical heads cause problems for the theory as well:

[[Haberleri takip eden]<sub>S</sub> insanlar]<sub>NP</sub> bilir. Takip eden insanların bildiği haberler.

- Maybe the constraint is inadequate, or Turkish [RC NP] structure does not yield a complex NP (i.e. Turkish RCs are not Ss?)
- But note that the dependency is not necessarily the crossing kind. Maybe therein lies the solution (cf. last week's notes).

- Latter versions of TG attempt to stick to following simplifications and generalisations:

Base component is richer, and constraints are more general.

Generalised transformation: **One** transformation (**move- $\alpha$** ).

Work on localising the parameters of variation.

Now there is more burden of explanation on restricting move- $\alpha$  (hence the theory becomes more derivational).

- From now on the emphasis is on **Principles and Parameters** (P&P).

# Government & Binding Theory

- **Principles:**

Movement is always “upward” in the tree (a consequence of the constraint that dependents be c-commanded by the element they depend on.)

I asked Miriam who<sub>i</sub> John saw t<sub>i</sub>      \*I asked t<sub>i</sub> who John saw Miriam.

- **Parameters:** Things that, when set, leads to a possible grammar:

**Pro-drop parameter:**

Dolores Trabaja en una galería de arte.                      Spanish  
(Ella) es pelirroja y (ella) tiene los ojos azules.

‘Dolores works for an art gallery. Is red-head and has blue eyes.’

- Parameter is set to ‘yes’ for Spanish, Turkish, Italian, Tagalog etc.; to ‘no’ for English, French, German, Icelandic, etc.
- That doesn’t mean the phenomena cannot be further restricted once the value is set; Modern Hebrew does not allow pro-drop in present tense.

**wh-movement:** wh-item moves or stays put.

I wonder who Annie loves.      I wonder Annie loves who.      Chinese

- Baker (2001) has identified around 15 parameters, which are hierarchically organised (e.g. his polysynthesis parameter ranks higher than ergativity).
- Not everybody agrees on what the parameters are and where they belong (UG, lexicon?)
- But they are associated with functional items (WHs, pro-drop, head directionality, clitics, agreement, infinitival clauses...)
- GB is a modular theory of grammar. Each module handles a different domain of linguistic constraints to filter out illicit expressions. This is orthogonal to parametrisation.
- And all of these are assumed to be part of language faculty.

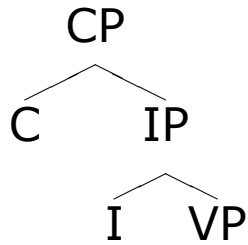
# GB Modules

- **X-bar Theory** provides binary branching structures with a general schema for *any* phrase XP (its specifier, modifiers, head and arguments). Spec and Head are parameterised in directionality.

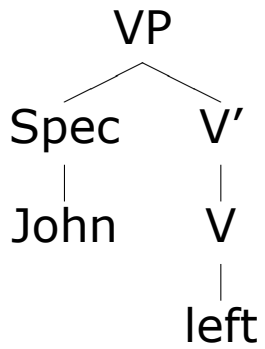
Later, Kayne (1994) claimed that binary branching is a *consequence* of asymmetry of serialisation, hence not a primitive of the theory.

- **Case filter** ensures that all lexical NPs have case.
- **Theta criterion** maps syntactic arguments to semantic (thematic) arguments.
- **Move- $\alpha$**  gives all possible structures by moving all movable phrases to all landing sites.
- **Bounding theory** constrains move- $\alpha$  from “reaching too far” (subjacency)
- **Binding theory** determines what can be the antecedent and anaphor.
- **Control theory** regulates control of infinitival clauses.

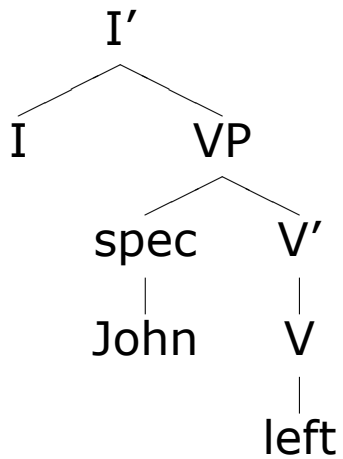
- Late GB conception of what X-bar layers undertake (Haegeman 1997):



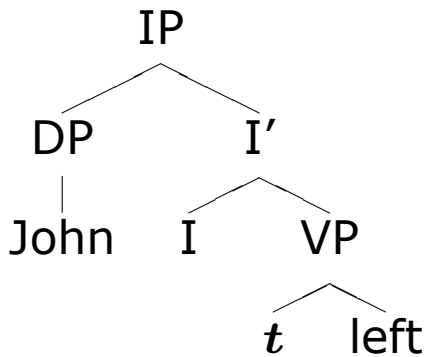
- VP is the thematic layer; IP is where functional morphology contributes (tense, agr, etc.); CP establishes the “force” of the clause.
- In GB, all these constraints act on **representations** to filter out illicit expressions and ill-formed structures.
- In MP, a sentence such as *John left* is assumed to be constructed **derivationally** as follows:
  1. The building blocks are determined (**numeration**): John, left, I[+Tense, +Agr]
  2. John and left are **selected** from the numeration
  3. **Merge** (a binary combinator) combines them (in their inflected forms):



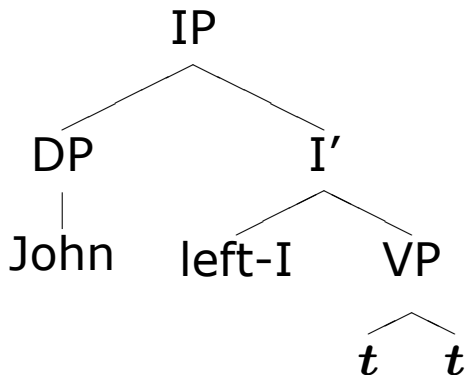
4. Select I and merge with VP



5. Subject has to license nominative case; I **attracts** John (move John)



6. left has past tense morphology, I's tense attracts left (move left):



- Later, Chomsky (1999) claimed that derivations occur in **phases**, which means that, once (say) a VP-phase is done, it's material is no longer available to others. That defines a dynamic notion of locality (cf. with GB's locality, which is defined as a representational constraint)

- What does a representational constraint look like? e.g. **Subjacency**: any application of move- $\alpha$  cannot cross more than one **bounding node**.
- Movement can form relative clauses because subjacency is not violated (movement occurs one by one by hopping along COMPs (that) in order not to violate subjacency:

The man  $who_i$  [I think [that [you said [that [you had seen  $t_i$ ]<sub>S</sub>]<sub>S'</sub>]<sub>S</sub>]<sub>S'</sub>]<sub>S</sub>

- No Movement out of (an English) relative clause is predicted if NP and S are bounding nodes in English (this is a parameter):

\*the man  $who_i$  [I wonder [which woman<sub>j</sub> [ $t_i$  married  $t_j$ ]<sub>S</sub>]<sub>S'</sub>]<sub>S</sub>

In the example above, 'man' cannot hop over wh-items (they are indexed, unlike 'that'); which means it hops 2 levels at one go.

- NB the earlier remarks about this being allowed cross-linguistically **as long as** the dependency that results is not the crossing variety.

- **Lexicalism** in TG: The **Projection Principle of GB**: Representations at each syntactic level (later in MP, the structure built in the derivation), are projected from the lexicon, in that they observe the subcategorisation properties of lexical items.

Hence e.g. if an NP has moved at some level, it has to stay in the representation all throughout. This makes **empty categories** (ECs) a conceptual necessity *for TG*.

- What about subjects? Since no verb subcategorises for them, how do we ensure that all sentences have subjects (overt or covert)?
- **Extended Projection Principle**: PP+all clauses must have subjects.
- Chomsky (1995:55) later claimed that EPP states that [Spec,IP] is obligatory although other specifiers are optional (e.g. [Spec, CP]), perhaps as a morphological property of I or by virtue of the predicational character of VP (that Spec is the subject of IP).
- ECs are not necessary (nor desirable) in other theories, as we shall see...
- We shall also see that additional specifications for Projection are not necessary; **all** properties can be projected from the lexicon (**radical lexicalism**).