TRANSFORMATIONAL AND GENERATIVE GRAMMAR (TGG)

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COURSE DESCRIPTION

• This course first of all briefly presents Distributional Linguistics by highlighting its limits which triggered and justified the advent of Transformational and Generative Grammar (TGG). The course secondly traces back the steps to the formation of Generative Syntax and unveils its basic concepts by laying a special emphasis on the Standard Theory and Principles and Parameters. It finally inducts students into the realm of Generalized Phrase Structure Grammar (GPSG) and Lexical-Function Grammar (LFG), two other major theories of syntax.
OVERALL EXPECTATIONS

• BY THE END OF THIS COURSE, STUDENTS ARE EXPECTED TO:
  • Know the different stages of the formation of Transformational and Generative Grammar (TGG);
  • Understand TGG and its relation to other syntactic theories.
SPECIFIC EXPECTATIONS

• BY THE END OF THIS COURSE, STUDENTS WILL:
  • Know and understand the basic concepts of Generative Syntax;
  • Differentiate and analyze sentences within the framework of the Standard Theory and X-bar Theory;
LEARNING GOALS

• BY THE END OF THIS COURSE, STUDENTS SHOULD BE ABLE TO:

• Conduct a study or analyze a variety of sentences and linguistic phenomena in the framework of Generative Syntax;
COURSE OUTLINE

• UNIT # 1: PRE-SYNTACTIC LINGUISTICS
• UNIT # 2: GENERALITIES AND BASIC CONCEPTS OF GENERATIVE GRAMMAR
• UNIT # 3: OTHER THEORIES OF SYNTAX
SELECTED BIBLIOGRAPHY

- SELLS, PETER (1985) LECTURES ON CONTEMPORARY SYNTACTIC THEORIES. CHICAGO & LONDON, UNIVERSITY OF CHICAGO PRESS. PP. 214
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- HAEGEMAN, LILIANE (1997) ELEMENTS OF GRAMMAR. HANDBOOK OF GENERATIVE SYNTAX. BOSTON & LONDON, KLUWER ACADEMIC PUBLISHERS, PP. 171
- FUCHS, CATHERINE & PIERRE LE GOFFIC (2003) LES LINGUISTIQUES CONTEMPORAINES. REPÈRES THÉORIQUES. PARIS, HACHETTE.
- GUÉRON, JACQUELINE (1993) LA GRAMMAIRE GÉNÉRATIVE IN LES THÉORIES DE LA GRAMMAIRE ANGLAISE EN FRANCE. PARIS, HACHETTE. PP. 125-176
The sub-field of General Linguistics referred to as Generative Grammar federates a bunch of descriptive and theoretical research works mainly relevant to Syntax. Originally developed by the American linguist Noam Avram Chomsky at the Massachusetts Institute of Technology (MIT), Generative Grammar is on the one hand perceived as a Copernican revolution in the history of Linguistics and on the other hand, as a revitalization of the rationalistic tradition of Port Royal. Hence, a good understanding of Generative Grammar and its scientific ambitions calls for a good knowledge of the linguistic mainstream which preceded and triggered its emergence.
UNIT # 1: PRE-SYNTACTIC LINGUISTICS

From Distributional Linguistics to Generative Syntax
UNIT # 1:
PRE-SYNTACTIC LINGUISTICS

• 1. Distributional linguistics
• 2. Structural linguistics criticized by Chomsky
• 3. Steps to the formation of Generative Syntax
Generative Grammar emerged at a time when Structural Linguistics in general and Distributional Linguistics in particular were in their heyday. But what was Distributional Linguistics? What was its goal? And, What was its method of investigation?
DISTRIBUTIONAL LINGUISTICS

It is to be recalled that Distributional Linguistics was mainly based on the concept of DISTRIBUTION. Hence, the distribution of a linguistic unit is the set of SYNTACTIC ENVIRONMENTS where the unit can potentially occur. Within that framework, the work of the linguist consists in building paradigms or distributional classes which encompass a set of elements likely to occur in a given place or context.
The method of investigation in Distributional Linguistics was a *TAXONOMIC* one. Based on a *DISCOVERY PROCEDURE* also referred to as Immediate Constituent Analysis (ICA), it consisted in breaking up larger linguistic units into smaller ones known as their immediate constituents until one gets to the smallest units, that is non-lexical categories which could not be broken up any further.
The corpus played a central role in that taxonomic approach to grammar. Thus, in that framework, to conduct a research work, the linguist first of all needs to collect some raw data to build a corpus which he will process thanks to the methods and procedures of distributional grammar and of those of Immediate Constituent Analysis.
DISCOVERY PROCEDURE

CORPUS → THEORY → GRAMMAR

Discovery Procedure
Structural linguistics criticized by Chomsky

- Chomsky charged Distributional Linguistics, which is basically regarded as a taxonomic approach to grammar, with two major flaws:
  
  1. He contends that it is a corpus-based approach which embodies only a sub-set of grammatical utterances as well as a sub-set of ungrammatical utterances;

  2. For Chomsky, a theory cannot be just a Discovery Procedure. Better, it has to be a Decision Procedure; A Decision Procedure which helps determine whether a grammar is or is not corpus-based. Worse, it is just an Evaluation Procedure. It helps single out the best grammar among a set of potential grammars.
Structural linguistics criticized by Chomsky

Decision Procedure

- Corpus
- Grammar

Evaluation Procedure

- Data
- Grammar G1
- Grammar G2
- Grammar G3
- G1
- G2
- G3
- ...
Structural linguistics criticized by Chomsky

• Contrary to a taxonomic conception of grammar, Chomsky rather upholds a theoretical conception of it. He henceforth aims to construct general theories which could:

• 1. Describe well-known utterances (Descriptive Adequacy),
• 2. Account for those well-known utterances (Explication Adequacy),
• 3. Predict future utterances.
Structural linguistics criticized by Chomsky

- Chomsky also adopts a methodological principle, common in science, according to which one cannot but draw only negative generalizations on observations or experiments. In other words, one will never be able to prove that a theory is true, but it can be proved that it is false.

- The value of a theory does not therefore dwell in the fact that it is true, but rather in the fact that it possesses the following features: *Explicative power*, *internal coherence*, *compatibility with other theories*, *simplicity* and *elegance.*
As a result of his critical views towards Distributional Linguistics and his rejection of the investigation methods of Structural Linguistics, Chomsky intends to build an explicit and accurate model termed GENERATIVE GRAMMAR.

It will therefore take Chomsky four major steps to build his new theoretical framework according to the periodization suggested by the French Linguist Jean-Yves Pollock.
Steps to the formation of generative syntax

• The history of Generative Syntax can be divided into four major periods which are:

• 1. The Standard Theory,

• 2. The Extended Standard Theory (Revised Extended Standard Theory),

• 3. Principles and Parameters,

• 4. The Minimalist Program.
THE STANDARD THEORY (ST)

• The Standard Theory (ST), mainly developed in two of Chomsky’s books that is Syntactic Structures (1957) and especially Aspects of the Theory of Syntax (1965), laid the foundations for Transformational and Generative Grammar (TGG). The major concepts which informed ST are:

1. System of Rules,
2. Autonomy of Syntax,
3. Linguistic Competence,
4. Linguistic Universals.
In the Standard Theory, language is defined as formal grammar (i.e. generative) which comprises a system of rules. That system of rules is made up with *Phrase Structure Rules* (rewrite rules) which yield *Deep Structures*, and a set of *Transformational Rules* which generate *Surface Structures*.

Chomsky contends that Syntax is different and independent from Semantics, and it has to be separated from it.
**THE STANDARD THEORY (ST)**

**Linguistic competence**

- Competence is defined as the innate cognitive ability or capacity of a native speaker to speak and to decode the utterances of his mother language. It is also called the *Internal Grammar*.

**Linguistic universals**

- Universals or "**UNIVERSAL GRAMMAR** is a system of all those principles and rules that are common to all human languages." (Haegeman, 1991: 12)
The basic principle of linguistic analysis, in the framework of Syntax, is to apply the formal methods of artificial languages to natural languages parsing with a view to deriving linguistic representations, that is, to generate grammatical strings of morphemes (sentences).

The system aims to generate well-formed or grammatical sentences and reject all ill-formed or ungrammatical ones.
THE EXTENDED STANDARD THEORY (EST)

- The Extended Standard Theory (EST), which is often associated with the Revised Extended Standard Theory (REST), is mainly characterized by four major aspects:
  1. The rejection of the hypotheses of Generative Semantics;
  2. The contribution of Surface Representations or Surface Structures to Semantic Interpretation;
  3. Constraints on transformations;
  4. The formulation of a general hypothesis on phrase structure through the X’ Schema very often called X-bar Theory.
THE EXTENDED STANDARD THEORY (EST)

- Chomsky’s books which best represent the Extended Standard Theory (EST) and the Revised Extended Standard Theory (REST) are:
  - 1. Studies on Semantics in Generative Grammar published in 1972
  - 2. Reflections on Language published in 1975
  - 3. Essays on Form and Interpretation published in 1977;
**THE EXTENDED STANDARD THEORY (EST)**

**HYPOTHESES OF GENERATIVE SEMANTICS REJECTED**

- Generative Semantics considers Deep Structure representations as Logical or Semantic Representations. Generative Semantics was very influential in the 60s and 70s especially regarding the Syntax-Semantics and Syntax-Pragmatics interfaces.

**CONTRIBUTION OF SURFACE STRUCTURE TO SEMANTIC INTERPRETATION**

- Contrarily to the Standard Theory where semantic interpretation was only possible at the level of Deep Structure, in the Extended Standard Theory, Surface Structure also contributed to the semantic interpretation of sentences.
THE EXTENDED STANDARD THEORY (EST)

CONSTRAINTS ON TRANSFORMATIONS

• Constraints were imposed on transformations or movement so that the traces that is Empty Categories left by constituents as a result of those transformations or movements could be marked. In other words the canonical position of the extracted arguments had to be marked.

X-BAR THEORY

• The constraints on movements paved the way for the $X'$ schema and favored the advent of the Theory of Traces.
Chomsky’s book which best represent the theory of *Principles and Parameters* also called *Government & Binding Theory* is *Lectures on Government and Binding* published in 1981.
While the shift from the Standard Theory to the Extended Standard Theory owes a lot to the "linguistic war" between Semanticists and Interpretivists, the advent of *Principles and Parameters* was rather triggered by the publication in 1981 of the Pisa lectures under the title *Lectures on Government and Binding*. Considered as a scientific revolution in the field of Linguistics, Chomsky’s *Principles and Parameters* is characterized by three aspects:

1. A shift from a theory based on formal rules to a theory of Principles and Parameters;
2. A grammar perceived as a set of independent and interconnected modules;
3. The limitation of the number of levels of linguistic representations to four.
From a rules-based theory to a theory of Principles and parameters

- *Principles and Parameters* constitute a grammar organized around universal principles, that is principles that are common to all languages of the world which form what Chomsky refers to as *Universal Grammar (UG).* "[...] Universal Grammar is innate to the human species. UG is a genetic endowment: we are born equipped with a set of universal linguistic principles. [...] Universal Grammar is the basis for acquiring language. It underlies all human languages. All and only human beings are equipped with UG and they are all able to learn languages. Other systems (say, dogs or television sets) are not equipped with UG and therefore will not be able to learn human languages.” (Haegeman, 1991: 12)
From a rules-based theory to a theory of Principles and parameters

• But Universal Grammar has two properties:

• ‘’(i) UG contains a set of absolute universals, notions and principles which do not vary from one language to the next.

• (ii) There are language-specific properties which are not fully determined by UG but which vary cross-linguistically. For these properties a range of choices is offered by UG. One parameter along which languages vary concerns word-order.

• [...] human beings are born equipped with some internal unconscious knowledge of grammar: UG. UG is a set of universal principles of language, some of which parametrized.” (Haegeman, 1991: 14-15)
## Modularization of Syntactic Theory

<table>
<thead>
<tr>
<th>Module</th>
<th>What is the Module used for?</th>
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<tbody>
<tr>
<td>Binding Theory</td>
<td>Concerns the syntactic relationships between referentially dependent elements and their antecedents.</td>
</tr>
<tr>
<td>Government Theory</td>
<td>Regulates the relationship between constituents</td>
</tr>
<tr>
<td>Case Theory</td>
<td>Regulates the movement of arguments to positions where they can be cased-marked</td>
</tr>
<tr>
<td>Theta-Theory or θ-Theory</td>
<td>Concerns the correspondence between syntactic structure and the θ-roles governed by a head.</td>
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<tr>
<td>Control Theory</td>
<td>Concerns the interpretation of verbal complements lacking overt subjects.</td>
</tr>
</tbody>
</table>
**Four levels of linguistic representations**

- The four (4) levels of linguistic representation are:
- 1. D-Structure,
- 2. S-Structure,
- 3. Logical Form,
- 4. Phonetic Form.
Four levels of linguistic representations

- D-Structure ← X’ Theory
- S-Structure ← Move α
- PF ← LF
Chomsky’s goal in the Minimalist Program (MP) is to reduce Government & Binding/Principles and Parameters Theory as much as possible to general principles of economy, to reduce derivations to their most primitive components, and to eliminate as much as possible the formal devices that had developed around the MGG approach (as summarized in the preceding sections). An accompanying goal is to investigate the extent to which natural language syntax can be viewed as deviating minimally from an ideal computational system.
UNIT # 2: GENERALITIES AND BASIC CONCEPTS OF GENERATIVE GRAMMAR

Standard Theory (ST) and Extended Standard Theory (EST)
1. Competence vs performance
2. Autonomy of syntax
3. Goals of linguistic theory
4. Aspects of structural description and analysis
COMPETENCE Vs PERFORMANCE

• “We thus make a fundamental distinction between competence (the speaker-hearer’s knowledge of his language) and performance (the actual use of language in concrete situations).” (Chomsky, 1965: 4).

• Competence, the description of which is the objective of grammar or syntax, can also be defined as an internalized system of rules associating sounds with their meaning, or sequences of acoustic signals with their semantic interpretations.
COMPETENCE Vs PERFORMANCE

For Chomsky, competence should be given priority or more attention over performance in linguistic studies (Syntax). That epistemological choice is justified by the fact that the speaker-hearer of a given language can, irrespective of the context, apply his judgement to figure out if a sentence is:

1. Grammatical and univocal,
2. Grammatical, but ambiguous,
3. Grammatical, but uninterpretable,
4. Ungrammatical and uninterpretable.
AUTONOMY OF SYNTAX

For Chomsky, the formal approach to human language (i.e. Syntax) is autonomous and independent from Semantics. To prove that, one has to distinguish grammatical sentences from ungrammatical ones, grammatical sentences from interpretable ones, grammatical sentences from acceptable sentences, and finally grammatical sentences from frequent sentences.
# UNGRAMMATICAL SENTENCES Vs UNINTERPRETABLE SENTENCES

## FRENCH

<table>
<thead>
<tr>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>c. *Pierre m’a propose que Pierre vienne.</td>
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</table>

## COMMENT

In the French sentences on the left (1) to (4), all (b) sentences are ungrammatical, but they are well interpretable.

Sentences (4) are really telling in the sense that (4a), which is ambiguous and can have two possible semantic interpretations, that is (4b) and (4c), has only one possible syntactic realization.
GRAMMATICALITY Vs INTERPRETABILITIY

FRENCH

(1) a. D’incolores idées vertes dorment furieusement.
   
   b. Furieusement, dormir idée vert incolore.

COMMENT

Even if sentence (1a) is grammatical, it is uninterpretable or hard to be interpreted whereas sentence (9b) is both ungrammatical and uninterpretable.
## GRAMMATICALITY VS ACCEPTABILITY

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<th>FRENCH</th>
<th>COMMENT</th>
<th>ENGLISH</th>
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<tbody>
<tr>
<td>(1) a. Je n’ai rien vu.</td>
<td>Grammaticality does not encompass or mean grammatical correctness or acceptability. In the French language, sentence (10b) is incorrect and is opposed to sentence (10a) with regard to the level of language. Whereas both sentence (10c) and sentence (10d) are ungrammatical because of the place where the particle of negation <em>rien</em> occurs.</td>
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<td>b. ?J’ai rien vu.</td>
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<td>c. * Je n’ai vu rien.</td>
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<tr>
<td>d. * J’ai vu rien.</td>
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<tr>
<td>FRENCH</td>
<td>COMMENT</td>
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<td>(1) a. * Le de est fragile.</td>
<td>Grammaticality is different from the frequency of occurrence of a linguistic unit. In the context <em>le ____ est fragile</em>, <em>gorille</em> is unlikely to occur just as <em>de</em>. However, (1a) and (1b) do not have the same grammatical status. Only (1b) is grammatical.</td>
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<tr>
<td>* b. Le gorille est fragile.*</td>
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CONCLUSIVE REMARK ON THE AUTONOMY OF SYNTAX

It can thus be concluded that syntax, that is the set of principles likely to help figure out the grammaticality of sentences, is independent from Semantics perceived as the set of principles which help run the semantic interpretation of sentences.
GOALS OF LINGUISTIC THEORY

The ability to distinguish grammatical from ungrammatical sentences is a part of the linguistic competence of speakers. So the primary goal of grammatical theory is to explicitly generate sentences that are grammatical and to reject those which are ungrammatical. From that standpoint, generative grammar can be defined as *an explicit grammar capable of listing all and only all the grammatical sentences of a language.*
The structural description of a sentence provides data which can help determine its phonetic representation on the one hand and its semantic representation on the other hand. Therefore, what are the most relevant aspects of structural description?
Some sentences may be different on the surface whereas they have the same syntactic structure. The grammar must assign them the same structural representation.
SYNTACTIC STRUCTURE AND SURFACE FORM

(1) a. Pierre aime Marie

b. Le petit vieillard alerte qui habite en face de chez nous a perdu les lunettes qu’il avait achetées hier soir.

(2) a. [S[SNPierre][SV[Vaime][SNMarie]]]

b. [S[Snle petit vieillard alerte][Squi habite en face de chez nous][SV[Va perdu][SN les lunettes][S qu’il avait achetées hier soir]]]

• (1a) and (1b) have the same syntactic structure to some extent that is they have the same types of constituents: (SN-V-SN)
• Some sentences may be similar on the surface but their structures may be dissimilar.
• (1) a. J’ai fait faire un veston à mon tailleur.  
    b. [j’ai fait[mon tailleur faire un veston]]  
• (2) a. J’ai fait faire un veston à mon fils.  
    b. [J’ai fait[X faire un veston à mon fils]]  
• (1a) and (2a) seem similar on the surface (except one word has been substituted for another one tailleur vs fils). However, those sentences have dissimilar syntactic structures.
• It is therefore fundamental to distinguish Deep Structure from Surface Structure. Deep Structure is defined as the place of structural description, and it is yielded by phrase structure rules. As for Surface Structure, it is yielded by applying transformational rules, and it is the entry place of the phonetic representation.
A sentence is said to be ambiguous when its Deep Structure yields at least two sentences on Surface Structure.

(1) a. J’ai lu la critique de Chomsky.
   b. [J’ai lu [X a critique Chomsky]]
   c. [J’ai lu [Chomsky a critique X]]

(1) can have two possible semantic interpretations, that is (1b) and (1c) which correspond to two different structures.

To avoid any ambiguity in (1), one needs to add a Prepositional Phrase. But the choice of that PP is constrained.

(2) a. J’ai lu la critique de Chomsky du livre de Postal.
   b. J’ai lu la critique de Chomsky par Postal.

The Structural Description of a syntactically ambiguous sentence should be able to provide a deep structure for each semantic interpretation.
GRAMMATICAL FUNCTIONS

- Structural Description should also be able to account for the relations or grammatical functions between the constituents of a sentence.
- (1) a. Pierre aime Marie.
  b. Marie est aimée de Pierre.
  c. Marie aime Pierre.

- "Pierre and Marie have the same relations to aimer in (1a) and (1b), but not in (1a) and (1c)"

- (2) a. Pierre est difficile à vivre.
  b. Pierre est difficile à comprendre.
- (3) a. [il est difficile[X vivre avec Pierre]]
  b. [il est difficile[X comprendre Pierre]]

- "Pierre does not play the same role in (2), that is it does not have the same relation to vivre and comprendre as shown in the simplified deep structures in (3)."
• In traditional grammar, three classes of verbs are traditionally distinguished, that is **TRANSITIVE, DITRANSITIVE** and **INTRANSITIVE** verbs. If a VP has a transitive verb as its head, one NP (the direct object) is required: the verb takes an NP-complement. If a VP has a ditransitive verb as its head, two NPs or an NP and a PP (the direct object and the indirect object) are required. If a VP contains an intransitive verb as its head then no NP-complement is allowed.

• In the Chomskian tradition the notions transitive, intransitive, etc. are encoded in distributional frames. Verbs are classified according to the type of VP in which the verb typically occurs. For example, the verb *meet* requires an NP-complement; its VP will contain an NP. This requirement can be represented as follows:

  • (1) *meet*: V, [____ NP]
SUB-CATEGORIZATION AND SELECTIONAL RULES

• (1) in the preceding slide shows in which syntactic frame the verb meet can and must be inserted: meet is inserted in front of an NP. The verbs are characterized on the basis of the frames in which they occur. Dither, for instance, does not take any complement:

• (2) dither: V, [ _____ ]

• The frames that identify subcategories of verbs are called SUBCATEGORIZATION FRAMES. We say that meet subcategorizes for or selects an NP.
UNIT # 3: OTHER THEORIES OF SYNTAX

GPSG and LFG
UNIT # 3:
OTHER THEORIES OF SYNTAX

• 1. Generalized phrase structure grammar
• 2. Head Driven Phrase Structure Grammar
• 3. Lexical-functional grammar
ABOUT THE OTHER THEORIES OF SYNTAX

Chomsky’s theory, *Transformational and Generative Grammar (TGG)*, is not the only theory of syntax in linguistics. There are many other theories of syntax in linguistics. “While some of them are currently being used and developed, [...] others have been virtually abandoned, [...]. Still others such as Generative Semantics and Case Grammar, have merged with other functional/cognitive approaches and constitute the basis for such productive theories as Cognitive Grammar and Construction Grammar.” (Luraghi and Parodi, 2008: 6)
Theories of syntax can be divided into two major categories i.e. on the one hand FORMAL theories, and on the other hand FUNCTIONAL and COGNITIVE approaches to syntax. While some of them do not cover syntax exclusively (integrating other fields of Linguistics such as phonology and morphology, etc.) others can hardly be strictly regarded as true theories of syntax.
1. FUNCTIONAL APPROACHES TO SYNTAX: Language is viewed as an instrument of communication (communication-based).

2. COGNITIVE APPROACHES TO SYNTAX: Those approaches are based on semantics (semantic-based).

3. FORMAL APPROACHES TO SYNTAX: Language is considered as an abstract system of knowledge so that the emphasis is put on structures (structure-based)
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</tbody>
</table>
Generalized Phrase Structure Grammar (GPSG) originated in the first half of the 1980s. It was developed by Gerald Gazdar and Geoffrey Keith Pullum as an alternative to Chomsky’s Transformational and Generative Grammar. GPSG is monostratal: it only assumes one level of syntactic description; consequently, it does not assume transformations.” (Luraghi and Parodi, 2008: 23)
GENERALIZED PHRASE STRUCTURE GRAMMAR

“‘In GPSG, languages are described in terms of context-free phrase structure rules, in much the same way as in Lexical Functional Grammar. Each rule is connected by a biunivocal relation with a semantic rule which defines the meaning of the resulting constituent.’” (Luraghi and Parodi, 2008: 23)
GENERALIZED PHRASE STRUCTURE GRAMMAR

“"The meaning of a construction is conceived of as a function of the meanings of its constituents. To describe semantic rules, GPSG makes use of a logical-intensional system, as defined in Montague Grammar. In this respect, GPSG can be conceived of as a version of Montague Grammar that operates with a syntax based on phrase structure.” (Luraghi and Parodi, 2008: 23)
Head Driven Phrase Structure Grammar (HPSG) was developed in the late 1980s by Pollard and Sag. It is a successor of Generalized Phrase Structure Grammar and an alternative to Chomsky’s Transformational and Generative Grammar. Unlike GPSG, HPSG incorporates some of the features of Government and Binding Theory.” (Luraghi and Parodi, 2008: 27)
HEAD DRIVEN PHRASE STRUCTURE 
GRAMMAR

“HPSG is non-derivational, constraint-based, surface oriented grammatical architecture.” (Kim, 2000: 7). “In other words, it does not assume transformations and conceives of different representations as subparts of a single larger structure, related by constraints. Thus some constructions usually derived through transformational rules in Transformational Generative Grammar are generated by lexical rules in HPSG.” (Luraghi and Parodi, 2008: 27)
Head Driven Phrase Structure Grammar (HPSG) further rejects the idea that there are phonologically unrealized elements such as big PRO, the subject of controlled non-finite verb in GB theory. This is because in HPSG lexical specifications, such as subcategorization requirements are explicitly represented. It is the lexical specification of the control verb that explains why controlled infinitives allow different controllers.” (Luraghi and Parodi, 2008: 28)
HEAD DRIVEN PHRASE STRUCTURE GRAMMAR

“Basic linguistic items are signs. Signs are divided into subtypes, words and phrases, they are described as bundles of features, which determine phonological (PHON), syntactic and semantic (SYNSEM) constraints. Feature structures of signs are represented as attribute value matrices (AVMs). [...] HPSG incorporates a version of the X-bar theory under the name of IMMEDIATE DOMINANCE PRINCIPLE (ID).” (Luraghi and Parodi, 2008: 28-29)
Lexical-Functional Grammar

“Lexical Functional Grammar (LFG) was developed in the late 1970s by Joan Bresnan, who had received training in Transformational Generative Grammar at the Massachusetts Institute of Technology. It is one of the various theories that have risen out of criticism for mainstream generative theory.” (Luraghi and Parodi, 2008: 29)
Lexical-Functional Grammar

“LFG is lexical in that it assumes a richly structured lexicon, in which lexical relations capture linguistic generalizations, while there is no need for transformations or operations on phrase structure trees (i.e., LFG is monostratal). The crucial difference between LFG and Transformational Generative Grammar (Standard Theory) lies in the nature of subcategorization. While in Transformational Generative Grammar subcategorized items are specified in terms of syntactic categories, in LFG subcategorization specifies grammatical functions (grammatical relations in most other terminologies.” (Luraghi and Parodi, 2008: 29)
LEXICAL-FUNCTIONAL GRAMMAR

“LFG is functional in the sense that certain grammatical functions, such as Subject and Object are, are considered primitives and accordingly are not further defined in terms of phrase structure configuration or semantic roles, [...] even though a current thread of research in LFG investigate the pairing of grammatical function and semantic (or thematic) roles.” (Luraghi and Parodi, 2008: 29)
In LFG there are two fundamental levels of syntactic representation: constituent structure (c-structure) and functional structure (functional structure):

- C-structures have the form of context-free phrase structure trees; they follow the X-bar theory and assume that all constructions, except sentences are internally headed and thus endocentric; they represent word order and phrase constituenthood: consequently they may vary across languages, depending on specific word order and on its functions [...].

- F-structures represent abstract grammatical functions such as subject and object and features such as tense, case, person, gender and number.” (Luraghi and Parodi, 2008: 30)
LEXICAL-FUNCTIONAL GRAMMAR

“...In contrast with the Chomskyan tradition from which it developed, LFG assumes that many phenomena can be more naturally analyzed in terms of grammatical functions as represented in the lexicon or in f-structure, rather than on the level of phrase structure. An example is the alternation between active and passive, which is handled in the lexicon, rather than being treated as a transformation [...]. Grammatical functions are not derived from phrase structure configurations, but are represented at the parallel level of functional structure.” (Luraghi and Parodi, 2008: 30)
LEXICAL-FUNCTIONAL GRAMMAR

“LFG uses three distinct layers of structure for representing the relations or functions of arguments: $\Theta$-structure (thematic structure), $\alpha$-structure (argument structure), and $f$-structure (functional structure), which expresses grammatical relations. Argument structure corresponds to what is commonly called ‘verbal valency [...]’” (Luraghi and Parodi, 2008: 31)
The history of syntax reveals that Syntax as a scientific approach to the analysis of human language pre-existed to Chomsky’s theory. However, Chomsky may be credited with having raised syntactic theorization to a level unparalleled in linguistic theory even today. Though Chomsky’s model is not the only theory of syntax, it can at least be regarded as the one which has been the most influential in world academia in particular, and on the understanding of how human language functions over the last seven decades. His theory was criticized by many other linguists, even by some of his former students. Yet, none of them has ever been able to topple it from its privileged position and dominance in the realm of linguistic theory. He therefore leaves a scientific legacy and heritage the development of which rests upon the shoulders of the younger generations of world linguists scattered all over the world.
EXERCISES FOR PRACTICE (1)

• TASK # 1: KNOWLEDGE AND UNDERSTANDING

• 1. To what extent can Saussure’s systemism and Chomsky’s grammar be categorized as linguistics of the language (*langue*) rather than linguistics of the utterance (*parole*)?

• 2. The French linguist Jean-Yves Pollock periodized Chomsky’s generative grammar in four major steps. Identify, name those periods and provide the title of a major book or publication which best features each of those steps.
EXERCISES FOR PRACTICE (2)

• TASK # 2: TRANSFER AND APPLICATION

• The noun phrase (np) and the sentence below conceal a semantic ambiguity. in other words, each of them can have two possible semantic interpretations. the semantic ambiguity also implies a structural ambiguity. build the two possible tree diagrams of the np and the two potential tree diagrams of the sentence in such a way that they bring out the dual semantic interpretations. briefly comment on those semantic differences.

• (1) This rabbit on the shelf

• (2) Sue stirred the soup with a spoon.
EXERCISES FOR PRACTICE (3)

• TASK # 3: KNOWLEDGE, UNDERSTANDING AND THINKING

• Comment on the dichotomy competence vs performance in Chomsky’s theory.

• Explain why the following sentence is semantically ambiguous though it seems syntactically well-formed.

• (1) Our store sells alligator shoes.
TASK # 4: COMMUNICATION

4.1 what does Noam Chomsky mean by ‘’I think that we are forced to conclude that grammar is autonomous and independent of meaning […]’’(syntactic structures, 2002 p. 17).

4.2 sentences (1’), (2’) and (3’) are the respective passivized forms of sentences (1), (2) and (3). explain why the passivized forms are ungrammatical.

(1) the committee agreed unanimously on the resolution.
(1’) *the resolution was agreed unanimously on by the committee.
(2) you can depend entirely on his integrity.
(2’) *his integrity can be depended entirely on.
(3) mary shouted angrily at john.
(3’) *john was shouted angrily at by mary.
EXERCISES FOR PRACTICE (5)

• **ASK # 5: APPLICATION AND TRANSFER**

• (1) *People should stare at Mary.*

The VP of sentence (1) may give rise to two possible tree branching representations as presented below. Comment on the tree diagram analyses with a view to bringing out the theoretical problem raised by those two representations.

```
  VP
   \   /  \
   V  PP  V
      \   /  \
      P  NP  P
            \   /  \
            N  NP  N
      \   /  \
      Stare at  Mary
```

```
  VP
   \   /  \
   V  PP  V
      \   /  \
      P  NP  P
            \   /  \
            N  NP  N
      \   /  \
      Stare at  Mary
```
THE END ...

THANK YOU ...