Transformational Generative Grammar (TGG) by Chomsky

The most significant development in linguistic theory and research in the 20th century was the rise of **Generative Grammar**, and, more especially, of transformational-generative grammar, or transformational grammar, as it came to be known. Two versions of transformational grammar were put forward in the mid-1950s: The first by Harris and the second by Noam Chomsky, his pupil. It is Chomsky's system that has attracted the most attention so far. As first presented by Chomsky in ***Syntactic Structure*** (1957), transformational grammar can be seen partly as a reaction against post-Bloomfieldian structuralism and partly as a continuation of it. What Chomsky reacted against most strongly was the post-Bloomfieldian concern with discovery procedures. In his opinion, linguistics should set itself the more modest and more realistic goal of formulating criteria for evaluating alternative descriptions of a language without regard to the question of how these descriptions had been arrived at. He is concerned more with how the human mind works out language.

The statements made by linguists in describing a language should, however, be cast within the framework of a far more precise theory of grammar than had hitherto been the case, and this theory should be formalized in terms of modern mathematical notions. Within a few years, Chomsky had broken with the post-Bloomfieldians on a number of other points also. He had adopted what he called a "**mentalistic" theory of language**, by which term he implied that the linguist should be concerned with the speaker's creative linguistic competence and not his performance, the actual utterances produced. He had challenged the post-Bloomfieldian concept of the phoneme (see below), which many scholars regarded as the most solid and enduring result of the previous generation's work. He had challenged the structuralists' insistence upon the uniqueness of every language, claiming instead that all languages were, to a considerable degree, cut to the same pattern—they shared a certain number of formal and substantive universals **(Universal Grammar UG).**

The aim of the linguistic theory expounded by Chomsky in Syntactic Structures (1957) was essentially to describe syntax, that is, to specify **the grammatical rules underlying the construction of sentences** and to explain the linguistic relationships between the sound system and the meaning system. To achieve this, the complete "grammar" of a language, in Chomsky's technical sense of the word, must have three parts, a syntactical component that generates and describes the internal structure of the **infinite** number of sentences of the language, a phonological component that describes the sound structure of the sentences generated by the syntactical component, and a semantic component that describes the meaning structure of the sentences. The heart of the grammar is syntax; phonology and the semantics are purely "interpretative," in the sense that they describe the sound and the meaning of the sentences produced by the syntax but do not generate any sentences

themselves. For Chomsky, phonology and semantics are dependent on syntax, and these other components of the grammar take the output of the syntactic component and turn it into a spoken utterance or a semantic representation. Accordingly, in producing language the native speaker is in fact moving from **'finite state grammar'** (the set of sounds, rules od principles) to **'infinite state grammar'** (generating unlimited number of sentences.

The first task of Chomsky's syntax is to account for the speaker's understanding of the internal structure of sentences. Chomsky and other grammarians can represent much of the speaker's knowledge of the internal structure of sentences with rules called **"phrase structure" rules** (such as S= NP+VP). These rules are supposed to yield all and only **well-formed sentences.** The question here does well-formedness mean only **grammaticality** or does it refer to conditions (norms) of **appropriateness and acceptability**?

Chomsky does claim that in some form or other the speaker has "internalized" rules of sentence construction, that he has "tacit" or "unconscious" knowledge of grammatical rules, and that the phrase structure rules constructed by the grammarian "represent" his competence. One of the chief difficulties of Chomsky's theory is that no clear and precise answer has ever been given to the question of exactly how the grammarian's account of the construction of sentences is supposed to represent the speaker's ability to speak and understand sentences, and in precisely what sense of "know" the speaker is supposed to know the rules of the grammar.

Phrase structure grammar (PSG)

Phrase structure grammar (PSG) rules were already implicit in at least some of the structuralist grammars Chomsky was attacking in his book "Syntactic Structures". One of his claims was that such rules were not adequate to account for all the syntactical facts of natural languages, which is the same case for PSG rules with these examples: "I like her cooking" and "John is eager to please." Phrase structure rules alone would provide only one derivation for this sentence. That is, the description of such sentences goes beyond the grammar rules to components of context. Since the above sentences are syntactically ambiguous, the grammar should reflect that fact by providing several different syntactical derivations and hence several different syntactical descriptions for each one. Moreover, phrase structure grammars have no way to picture the differences between "John is easy to please" and "John is eager to please." Though the sentences are syntactically different, phrase structure rules alone would give them similar phrase markers & analysis.

Just as in the above examples **surface (structure)** similarities conceal underlying differences that cannot be revealed by phrase structure grammar, so surface differences also conceal underlying similarities. For example, in spite of the different word order and the addition of certain elements, the

sentence "The book will be read by the boy" and the sentence "The boy will read the book" have much in common (the same **deep structure):** they both mean the same thing—the only difference is that one is in the passive mood and the other in the active mood. Phrase structure grammars alone give us no way to picture this similarity. They would give us two unrelated descriptions of these two sentences.

To account for such facts, Chomsky claims that in addition to phrase structure rules the grammar requires a second kind of rule, **"transformational" rules (TR),** which transform phrase markers into other phrase markers by moving elements around, by adding elements, and by deleting elements. For example, by using Chomsky's transformational rules, we can show the similarity of the passive to the active mood by showing how a phrase marker for the active mood can be converted into a phrase marker for the passive mood.

The ideal speaker-listener

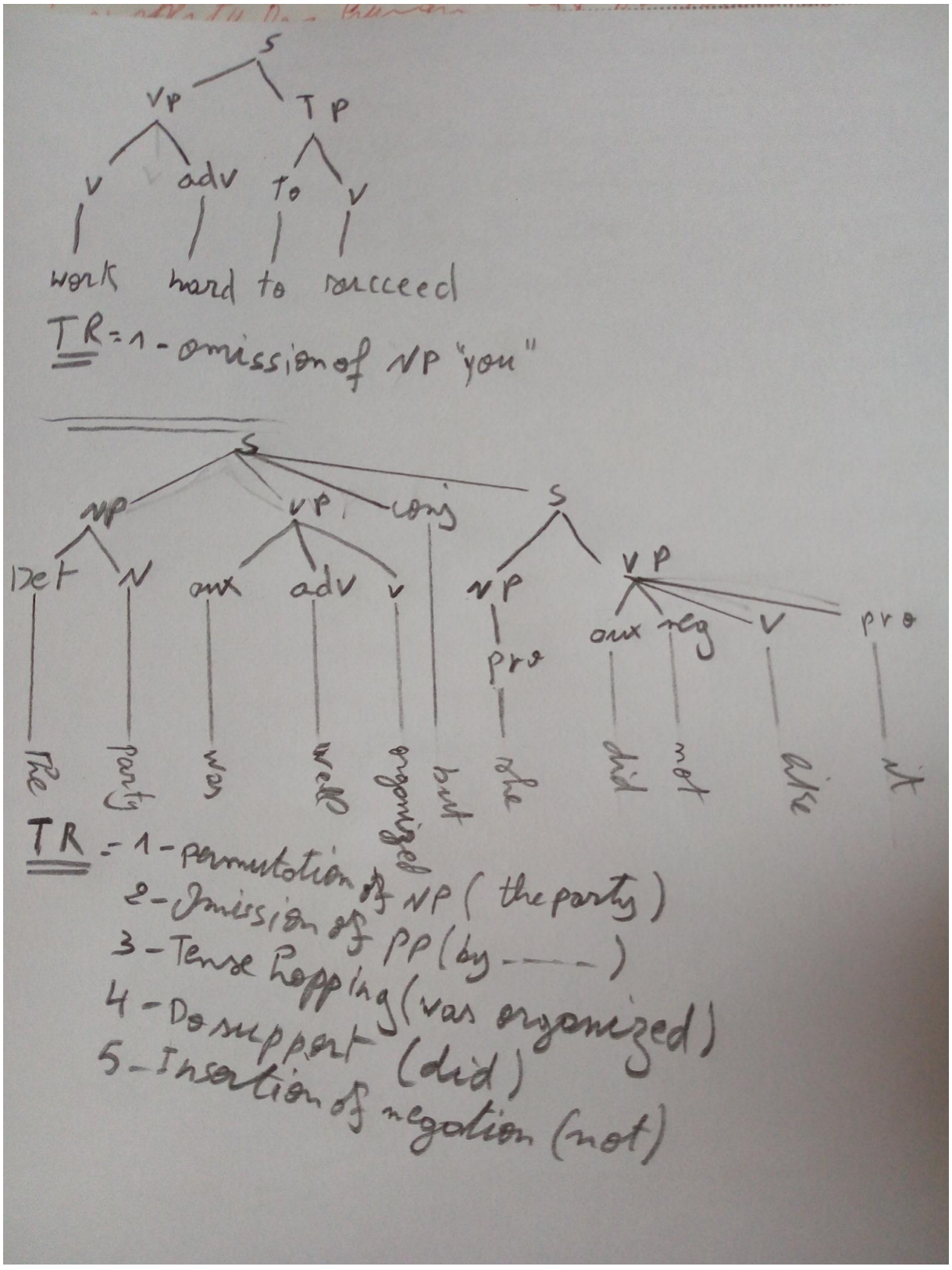
> Linguistic theory is concerned primarily with an ideal speaker-listener, in a completely homogeneous speech-community, who knows its language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance.
>
> (Chomsky 1965: 3)

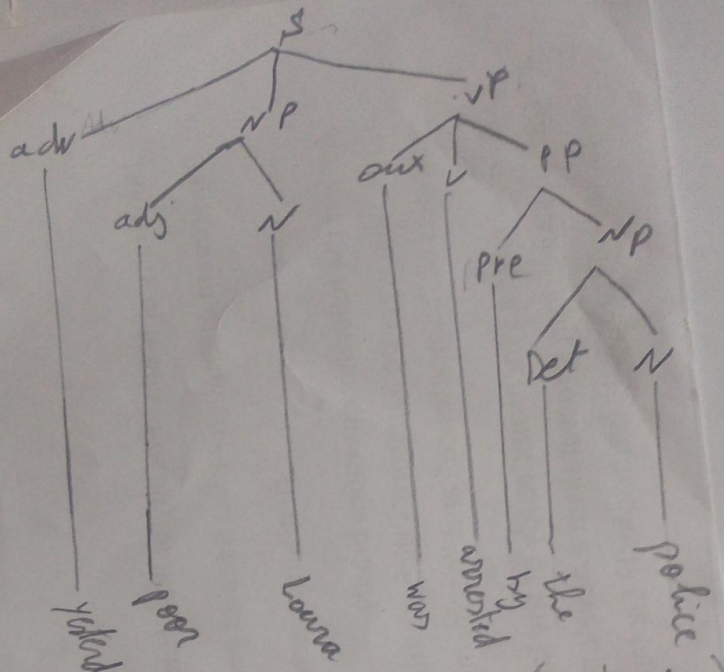
This statement has been attacked on many sides, not least by variationist sociolinguists who have pointed out the unnaturalness of a homogeneous speech community, and who have a built a whole branch of linguistics devoted to examining precisely the lack of homogeneity in speech-communities. While it would be preposterous to deny the value of the variationist idea, the success of this branch of linguistics is not a criticism of Chomsky's proposal in the passage cited.

Competence and performance, I-language and E-language

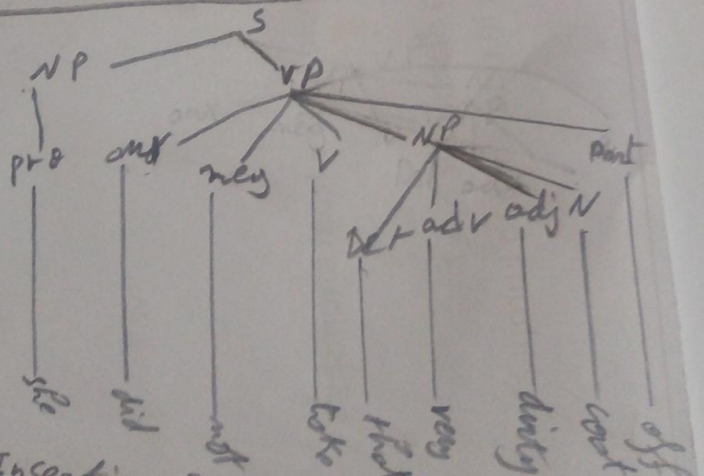
Chomsky also distinguishes between the speakers' actual knowledge of the language, which is termed **"competence"** and the use of that knowledge, which is termed **"performance".** Any piece of text (spoken or written) represents a performance of language, which will match the speaker's competence more or less inaccurately. Thus, performance is often taken as a poor guide to competence, but competence is the object of study for the linguist. In later versions of Chomsky's theory, the distinction between competence and performance is replaced by the distinction between I-language and E-language. **I-language** (and the I is deliberately ambiguous between 'internalised' and 'intensional' – and others add 'individual' and 'idiolectal' as well, e.g. Lyons 1991: 170) corresponds more or less to the old competence. It is what is held in the head of a single individual speaker-listener.

E-language (where the E stands for ‘externalised’ and ‘extensional’) is not like performance, though. E-Language includes languages viewed as a set of sentences, it includes the material actually produced by a speaker, it includes ‘languages’ like French and Mandarin, and it includes the objects of study of sociolinguistics and corpus linguistics.





TR = 1- Movement of adv (yesterday)
2- insertion of agent "by"
3- Permutation of NPs (the police x poor Laura)
4- Tense Hopping (was arrested)



TR
1- Insertion of negation (not)
2- Do support (did)
3- movement of particle "off"