

STORIA DELLA LINGUISTICA 2013-14
Storia della grammatica generativa (I parte)
Materiali (integrazione 2)

A) Altri argomenti a favore dell'analisi trasformazionale in Chomsky (1957)

As a third example of the inadequacy of the conceptions of phrase structure, consider the case of the active-passive relation. Passive sentences are formed by selecting the element *be + en* in rule (28 iii). But there are heavy restrictions on this element that make it unique among the elements of the auxiliary phrase. For one thing, *be + en* can be selected only if the following *V* is transitive (e.g., *was + eaten* is permitted, but not *was + occurred*); but with a few exceptions the other elements of the auxiliary phrase can occur freely with verbs. Furthermore, *be + en* cannot be selected if the verb *V* is followed by a noun phrase, as in (30) (e.g., we cannot in general have *NP + is + V + en + NP*, even when *V* is transitive — we cannot have "lunch is eaten John"). Furthermore, if *V* is transitive and is followed by the prepositional phrase *by + NP*, then we *must* select *be + en* (we can have "lunch is eaten by John" but not "John is eating by lunch," etc.). Finally, note that in elaborating (13) into a full-fledged grammar we will have to place many restrictions on the choice of *V* in terms of subject and object in order to permit such sentences as: "John admires sincerity," "sincerity frightens John," "John plays golf," "John drinks wine," while excluding the 'inverse' non-sentences "sincerity admires John," "John frightens sincerity," "golf plays John," "wine drinks John". But this whole network of restrictions fails completely when we choose *be + en* as part of the auxiliary verb. In fact, in this case the same selectional dependencies hold, but in the opposite order. That is, for every sentence *NP₁ — V — NP₂* we can have a corresponding sentence *NP₂ — is + Ven — by + NP₁*. If we try to include passives directly in the grammar (13), we shall have to restate all of these restrictions in the opposite order for the case in which *be + en* is chosen as part of the auxiliary verb. This inelegant duplication, as well as the special restrictions involving the element *be + en*, can be avoided only if we deliberately exclude passives from the grammar of phrase structure, and reintroduce them by a rule such as:

(34) If *S₁* is a grammatical sentence of the form

$$NP_1 — Aux — V — NP_2,$$

then the corresponding string of the form

$$NP_2 — Aux + be + en — V — by + NP_1$$

is also a grammatical sentence.

For example, if *John — C — admire — sincerity* is a sentence, then *sincerity — C + be + en — admire — by + John* (which by (29) and (19) becomes "sincerity is admired by John") is also a sentence. We can now drop the element *be + en*, and all of the special restrictions associated with it, from (28 iii). (Chomsky 1957, pp. 42-3)

B) Ordine delle trasformazioni, trasformazioni obbligatorie e trasformazioni facoltative; il "nucleo" (kernel)

From these few examples we can already detect some of the essential properties of a transformational grammar. For one thing, it is clear that we must define an order of application on these transformations. The passive transformation (34), for example, must apply *before* (29). It must precede (29 i), in particular, so that the verbal element in the resulting sentence will have the same number as the new grammatical subject of the passive sentence. And it must precede (29 ii) so that the latter rule will apply properly to the new inserted element *be + en*. (In discussing the question of whether or not (29i) can be fitted into a $[\Sigma, F]$ grammar, we mentioned that this rule could not be required to apply before the rule analyzing *NP_{sing}* into *the +man*, etc.)

One reason for this is now obvious — (29 i) must apply after (34), but (34) must apply after the analysis of *NP_{sing}* or we will not have the proper selectional relations between the subject and verb and the verb and 'agent' in the passive.)

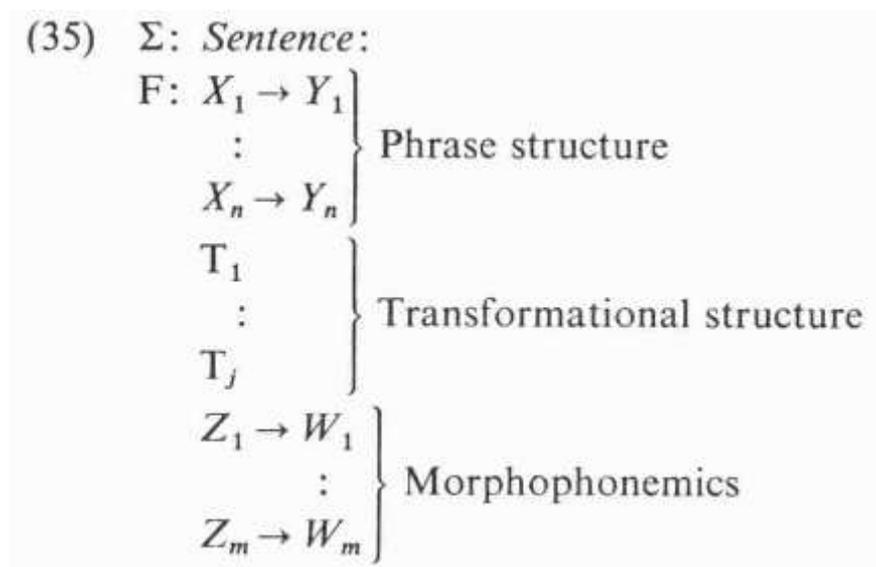
Secondly, note that certain transformations are *obligatory*, whereas others are only *optional*. For example, (29) must be applied to every derivation, or the result will simply not be a sentence. [omitted footnote] But (34), the passive transformation, may or may not be applied in any particular case. Either way the result is a sentence. Hence (29) is an obligatory transformation and (34) is an optional transformation.

This distinction between obligatory and optional transformations leads us to set up a fundamental distinction among the sentences of the language. Suppose that we have a grammar G with a $[\Sigma, F]$ part and a transformational part, and suppose that the transformational part has certain obligatory transformations and certain optional ones. Then we define the *kernel* of the language (in terms of the grammar G) as the set of sentences that are produced when we apply obligatory transformations to the terminal strings of the $[\Sigma, F]$ grammar. The transformational part of the grammar will be set up in such a way that transformations can apply to kernel sentences (more correctly, to the forms that underlie kernel sentences—i.e., to terminal strings of the $[\Sigma, F]$ part of the grammar) or to prior transforms. Thus every sentence of the language will either belong to the kernel or will be derived from the strings underlying one or more kernel sentences by a sequence of one or more transformations.

(Chomsky 1957, pp. 44-5)

C) L'organizzazione della grammatica nel modello di Chomsky (LSLT) e Chomsky (1957)

From these considerations we are led to a picture of grammars as possessing a natural tripartite arrangement. Corresponding to the level of phrase structure, a grammar has a sequence of rules of the form $X \rightarrow Y$, and corresponding to lower levels it has a sequence of morphophonemic rules of the same basic form. Linking these two sequences, it has a sequence of transformational rules. Thus the grammar will look something like this:



To produce a sentence from such a grammar we construct an extended derivation beginning with *Sentence*. Running through the rules of F we construct a terminal string that will be a sequence of morphemes, though not necessarily in the correct order. We then run through the sequence of transformations T_1, T_j , applying each obligatory one and perhaps certain optional ones. These transformations may rearrange strings or may add or delete morphemes. As a result they yield a string of words. We then run through the morphophonemic rules, thereby converting this string of words into a string of phonemes. The phrase structure segment of the grammar will include such rules as those of (13), (17) and (28). The transformational part will include such rules as (26), (29) and (34), formulated properly in the terms that must be developed in a full-scale theory of transformations. The morphophonemic part will include such rules as (19). This sketch of the process of generation of sentences must (and easily can) be generalized to allow for proper functioning of such rules as (26) which operate on a set of sentences, and to allow transformations to reapply to transforms so that more and more complex sentences can be produced.

(Chomsky 1957, pp. 45-6)

D) La “regola (26)”: un esempio di ‘trasformazione generalizzata’

- (26) If S_1 and S_2 are grammatical sentences, and S_1 differs from S_2 only in that X appears in S_1 where Y appears in S_2 (i.e., $S_1 = .. X..$ and $S_2 = .. Y...$), and X and Y are constituents of the same type in S_1 and S_2 , respectively, then S_3 is a sentence, where S_3 is the result of replacing X by $X + \textit{and} + Y$ in S_1 (i.e., $S_3 = .. X + \textit{and} + Y..$).

Un esempio di applicazione della regola (26).

- (24) (a) the scene - of the movie - was in Chicago
(b) the scene - that I wrote - was in Chicago
- (25) the scene - of the movie and that I wrote - was in Chicago
- (da Chomsky 1957, p. 36)