The Need for Transformations in Genevativc Syntax

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Speakers of a language, say English for example, utter an infinite number of sentences and are able to understand a much bigger number. What we are concerned with here is the way we can describe adequately how the grammar of these sentences is constructed. Within the standard transformational generative model, it is assumed that basic phrase markers are generated by phrase Structure Rules (PS Rules) of the following sort:

1- S ⟶ NP Aux VP

2- NP ⟶ (Det) N (PP)

3- Aux ⟶ tense (Modal) (have ten) (be ing)

4- VP ⟶ V (NP) (Adj) (Adv)

5- PP ⟶ P + NP

We Will assume that these Ps Rules are capable of generating not only the basic phrase markers but also, all other binds of utterances. If, however, it proves otherwise,that PS are not enough for producing all utterances, then, the Transformations hypothesis is justified

and we will consequently have proved that both PS and T rules are necessary in the grammar of a language.

One type of sentences that our aforementioned rules will enable us to generate is

(la) John present be here

Mary past be good

The majority of the students past be present let us suppose that a speaker of English wants to know if, for example, John is here, our PS Rules can not generate the sentence (lb)

Is John here

Was Mary good

Unless we modify them by reordering them that is rules (3) and (4) should apply before rule (1) in order to have a sentence like (lb) and thus native speakers of that language will follow the order 1 2 3 4 in a declarative sentences and 3 4 1 2 in a question. However, this violates one of the criteria according to which we measure the adequacy of our grammar.

An adequate grammar of a language should: (1) generate all the correct sentences of that language (2) prevent all ill formed sentences and (3) express the linguistically

significant generalizations about the language. By reordering the rules, we have met the first and second criteria.

Speakers of English will reorder the rules when they intend to ask a question. Thus, they will utter all the correct and only the correct sentences. However, this reordering of rules fails to meet our third criterion of adequacy, since in every particular instance, there will be exceptions and rules and re-ordering of these rules. There are no valid generalizations.

So far, our reordering of rules has enabled us to meet the first tow criteria of adequacy, an assumption that collapses as soon as we think of counter – examples. How can we generate a sentence like (2 a) Did John came yet. If we follow our reordering of rules, we find that we wind up with the ungrammatical sentence came John yet. Thus, we will have violated our second criteria of adequacy, we have produced ill – formed sentences. Let us modify our PS Rules, allowing Aux to consist of tense + (do). In this case, we can pursue the assumption of our re – ordering of PS Rules although our third criteria of adequacy as we have shown is not met by re – ordering rules is every case.

More counter – evidence for the failure of the re – ordering of rules imposes itself on us when we think of how negation behaves. How can we negate (1 a) John present be here and (2 a) Did John came yet. First of all, we will use our first ordering of rules 1 2 3 4 in our generation of the (1 a) and that we have reordered ours PS Rules and assumed that do is in the dup structure in order to have the input on which negation works. Second, we will assume that not is in the deep structure:

Aux $\longrightarrow$ tense de not.

However, our third criteria of adequacy will be destroyed if we want to describe how the following sentences are produced:

(3 a) John may not have come

Mary should not have failed the test.

In this case, we will have to specify where not should be placed, every time we have may or will (Model) or do or copula, which is against the principle of capturing generalizations in the language.

At least in forming questions and negatives, our PS Rules have not been adequate. Let us suppose that Transformational rules are necessary only in those two cases

until we have more evidence. Let us see how these transformations work.

Question T. Rule:

SD: NP Tense

In the case of negation for example, we do not have to specify where not will be placed every time, either after do or may or have since any of the items model or have will take not as the rule puts it in one statement. In the case of a sentence like John past come, do insertion takes place before the Neg. transformation:

John present be not here. Thus, in one rule, the Neg. transformation, we can produce all the sentences of the language, prevent the ungrammatical ones and capture the most significant generalizations about that language.

A kmajian et al (1981 : 158-16) account for another reason why we need transformational rules in our grammar in addition to PS Rules:

Some properties of sentences in natural language can not be accounted for in terms of relations between contiguous words. It turns out that we need to account for relations between these items in a sentence that are nonetheless not

contiguous in the linear order of words. One way to account for discontinuous dependencies of this sort is to devise a means by which two or more phrase markers can themselves be related to each other in a special way – which is in fact the fundamental insight of the syntactic theory known as transformational grammar.

Akmajian supports his contention by giving examples. He points out the discontinuous dependency in between stood and the particle up in a sentence like Mary stood her date up can be explained by the fact that it has the deep structure: Mary past stand up her date, generated by our PS rules to which has been applied the Particle Movement Transformation:

To yield: Mary stood her date up.

He gives another example to support his contention, pointing out how the same nation of discontinuous dependency can be captured through extra position, a T-Rule that shifts the modifying clause preceded by a head noun at the end of the Noun phrase:

Several people who were wearing hats came in.

Several people came in who were wearing hats.

A third Justification for the need of T-Rules in the grammar is to capture the fact that sentences like:

John read the book.

The book was read by John.

Mary ate the apple.

The apple was eaten by Mary.

The students passed the test.

The test was passed by the students are interrelated. They have the same meaning if we assume that the passive sentences are derived by PS Rules, we have to assume although it is not and more significant still, we fail to capture the nation that those sentences are related ones. This becomes clear again if we compare sentences like:

I hive John the book.

I gave the book to John.

The two sentences are related both semantically, having the same meaning and syntactically having the same constituents. If we assume that they are derived from different PS rules, we are missing their semantic and syntactic similarities. This becomes clearer in a sentence like to the battlefield, he went which is related to he went to the battlefield by a pre posing transformation, two sentences

which are similar both syntactically and semantically, a notion which can be captured by a PP proposing transformation which shifts the PP to the beginning of the sentence for stylistic reasons.

Besides being necessary for an adequate theory of grammar, transformations do not change the meaning of the underlying structure. According to the Katz Postal Hypothesis (1964):

Transformations are meaning – preserving, in the following sense: if two surface structures derive from the same underlying structure and if their derivations differ only in that an optional transformation has applied in one but not in the other, then they must have the same meaning.

Thus the following sentences in which the Dative and the passive transformations apply are synomjmous:

Jane gave the book to John.

Jane gave John the book.

John was given the book by Jane.

The book was given to John by Jane.

Transformations simplify the grammar, help us capture the most significant generalizations, and together with PS Rules, they produce the grammatical and only the grammatical sentences of a language – Moreover, they are meaning preserving.

Quoted in Akmajian et al (1975)

References

Introduction to principles of Transformations Syntax Akmajan and Henry Frank (1515)

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