A Re-evaluation of the Analysis of Sentences: Transformational Generative Grammar and Systemic Functional Linguistics Perspectives

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Abstract

This paper re-examines an approach to the analysis of sentences from two of the most influential theoretical linguistic schools namely: Transformational Generative Grammar and Systemic Functional Linguistics/Grammar. These two schools have enjoyed popularity among grammarians and researchers in their approaches to explaining and describing the English sentence. From the analysis and discussion of this paper, we believe that these schools are not only complementary to each other in analyzing sentences but that the weaknesses of one are remedied by the strengths of the other. Also, the need for language teachers to establish balance in their teaching and adoption of these theories becomes pertinent. Therefore, this existing relationship is key in language teaching.

Keywords- Theoretical, Linguistics, Transformational, Generative, Systemic, Relationship

Introduction

The study and teaching of language is usually undertaken within certain assumptions about language based on the inclination of the linguists involved. Over the years, some of these theories have become established and provide guideposts for continuous engagements in the study of language for successful generations of linguists and researchers. Notable among these theories – or more technically, the theories are often Chomsky's Transformational Generative Grammar (TGG) and Halliday's Systemic Functional Linguistics (SFL). These two theories have been

initiated and developed almost independently and each has been successful in accounting for aspects of language from a particular perspective. However, they seem to stand more in a complementary position with respect to each other than in a confronting stance. In this paper, we posit that the two theories fall within theoretical linguistics and have immensely contributed in making the understanding of grammar. Therefore, the focal point of this comparative analysis rests on the need for language teachers to establish balance in their teaching and adoption of these theories. Learners would strongly need to understand how each theory compliments the other and how their existing weaknesses are remedied by the other. The following section bears an account of these two theories of language, and the way in which each theory contributes to the analysis of sentences rather than one being tagged as making a major or minor contribution.

Theoretical Background

Transformational Generative Grammar

Transformational Generative Grammar (TGG) is essentially a theory of language that recognizes existing relationship between different elements of language. It 'projects' one or more given sets of sentences that make up the language of description, and also the process characterizing human language's creativity. It works to provide a set of rules that can accurately predict which combinations of words are able to make grammatically correct sentences. Those who study generative grammar hope to improve our overall understanding of the mental makeup of the human species as a whole (Matthews, 2015). A generative grammar, as understood by Chomsky, must also be explicit; that is, it must precisely specify the rules of the grammar and their operating conditions. TGG is a theory of language, especially of a natural language, that has been developed in the Chomskyan tradition of phrase structure grammars. It is a form of language analysis that establishes a relationship with the different elements in the sentence of a language and makes use of rules or transformations to recognize these relationships. Modified in its theoretical principles and methods over succeeding years by many linguists transformational generative grammar attempts to describe a native speaker's linguistic competence by framing linguistic descriptions

as rules for 'generating' an infinite number of grammatical sentences (Chomsky, 1065).

The transformational generative theory of language was propounded by Noam Chomsky in his book, *Syntactic Structures* (1957), and later expanded in *Aspects of the Theory of Syntax* (1965). Chomsky can be referred to as one of the successful grammarians and an important philosopher of language. He has had greater influence on most of our perception of English syntax, both of the nature of syntax and of particular constructions. His contributions include establishing the belief that linguistics is, in his terms, a branch of cognitive psychology and that human beings have a genetically inherited faculty of language which is independent of other faculties of the mind. By the time the influence of structuralism was at its peak around the 1950s, Chomsky's works began to oppose a lot of assumptions and basic arguments about linguistics because he was not satisfied with the existing theories. To Chomsky, linguistic theory could only solve the problem of language, when it provides what he calls 'EVALUATION MEASURE' which would explain the analysis of the language a given theory favours (Chomsky, 1965, p.15).

According to Chomsky linguistic competence "concerns the tacit knowledge of grammar while linguistic performance is the realization of this knowledge in actual performance…actual use of language in concrete situation". He further explains that:

> Linguistic theory is concerned primarily with an ideal speaker-listener in a completely homogeneous speech community, who knows his language perfectly and is unaffected by such grammatical irrelevant condition as memory limitations, shift of attention and interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance. (59)

Chomsky draws a line between linguistic competence and performance. To him, competence is knowledge of the speakers to language, the systems under their control, and the rules that determine the relationship between sound and meaning for most sentences. It also refers to the ability of an ideal speaker-listener to associate the sound and meaning in accordance with the rules of the language (Chomsky, 1965, p.116).

Performance is what is being done by the speaker-listener and it is not only based on their knowledge of the language, but many other factors such as memory limitations, changes in interest and attention, non-linguistic knowledge and belief, and so on. In relation to performance, language is seen as a set of specific utterances produced by native-speakers, as encountered in a corpus; analogous to the Saussurean concept of parole (Chomsky, 1965). In sum, competence refers to the speaker's knowledge of his language, while performance is the actual use of language in concrete situations. The theory maintains that it is only with the former that linguists should seriously concern themselves.

Another relevant feature of transformational generative grammar theory is the abstract postulation that each sentence of any natural language has both a surface structure which gives the form of the sentence as it is used in communication and a deep structure, which gives the meaning of the sentence. Deep structures are grammatical abstractions that underlie real sentences. A set of artificial rules called 'phrase structure rules' generate deep structures, while another set of artificial rules termed 'transformation rules' convert deep structures to surface structures. The theory deals with transformation of sentences. For instance an active sentence can be changed to a passive one while a simple declarative sentence can be changed to a question through the use of transformations and these transformations follow linguistic rules.

TGG is also known for an extensive use of tree diagrams to assign different roles of grammatical categories (these tree diagrams are used as pictorial representations of grammatical structure of the sentence). TGG's model for representing syntactic analysis adopted a linguistic analysis comprising visual and pictorial method of sentence analysis using phrase markers (P-markers) or tree diagrams. The use of such syntactic trees gives insight into the segmentation of the constituents of a sentence and displays a hierarchical organization of syntactic structures. The constituents represented in P-markers relate with one another by way of dominance and precedence. Syntactic structures are also represented using labelled bracketing as demonstrated in the interpretation of PS Rules in as presented above. P-markers are often adopted by linguists due to their explicitness while labelled bracketing is often preferred because it occupies less space on the printed page. However the two systems of representations are logically equivalent

and have equal theoretical significance (Radford, 1996 and Lyons 1981). Carnie further explains that, syntactic trees (P-markers) used in TGG allow us to capture remarkable facts about language, one of which is ambiguity.

Systemic Functional Grammar

Systemic Functional Grammar/Linguistics (SFL) on the other hand was introduced by J.R Firth but developed by his student **Michael Alexander Kirkwood Halliday** (**M. A. K. Halliday**) in the 1960s and it refers to a new approach to the study of grammar that is radically different from the traditional view in which language is a set of rules for specifying grammatical structures (Butler, 1996). Systemic grammar refers to language as connected sets of options for making meaning. It explains the available grammar choices made for the speakers of the language. Halliday is one of the prominent linguists from the United Kingdom. He developed and influenced the Systemic Functional Linguistics as a model for describing language. His grammatical descriptions go by the use of 'systemic functional grammar' (SGF). This school of thought describes language as a semiotic system that serves as a systemic resource for meaning (Halliday, 1994). Halliday accounts for grammatical categories (unit, structure, and system) and scales (rank, exponence, and delicacy). The unit are central in grammatical analysis as it is the 'that category to which correspond a segment of the linguistic material about which statements are to be made.' These units are those of the sentence, clause, group, word and morpheme (Halliday. 1994, p.58).

To deviate from the perspective of 'grammar as rule' type of theory, Systemic Functional Linguistics takes the resource perspective rather than the rule perspective, and designs it in such a way to display the overall system of grammar rather than only fragments. In Systemic Functional Linguistics, 'clause' rather than 'sentence' is the unit of analysis. In Systemic theory, a clause is a unit in which meanings of three different kinds are combined. Three distinct structures with each expressing one kind of semantic organization are designed in relation to one another for the purpose of producing meaning. According to Halliday and Matthessien (2004), these semantic structures are referred to as Meta-functions, namely:

i. Ideational meaning which explains that language can be used to capture reality; that is to say that the world can either be inside us or around us. It captures grammatical resources for construing our experience of the world around and inside us. This meta-function is analyzed in terms of Transitivity system, i.e. a choice between the different processes and the participants and circumstances associated with those processes. A clause in its ideational function is a means of representing patterns of experience, used to build a mental picture of reality. This is what people employ to make sense of their experience of what goes on around them and inside them.

ii. Interpersonal Meaning which is concerned with the interaction between speaker and addressee, the grammatical resources for enacting social roles in general, speech roles in particular, and dialogic interaction. Language is used here to construct social relationships like interaction. The building blocks of this semantic function configure as Subject, Finite, Predicator, and Complement.

iii. Textual meaning captures how we use language to organize our messages. It is also concerned with the creation of text with the presentation of ideational and interpersonal meanings as information that can be shared by speaker and listener in text unfolding in context

In this view, language is a resource for making meanings and hence grammar is a resource for creating meaning by means of wording (Halliday & Matthiessen, 2004).

Discussion and Comparative Analysis

To compare and contrast Generative Grammar and Systemic Functional Grammar in the analysis of English sentences, the first striking difference between the two theories has to do with the fact that the two most influential proponents (Chomsky and Halliday) of these schools originate from different regions. Noam Chomsky is an American and was influenced by Ferdinand de Saussure, Jean Piagets, Zellig Harris, J. L Austin among others, while M. A. K Halliday is a European linguist and

influenced by J.R. Firth and Benjamin Lee Wholf (Brown and Miller, 1991, p.106). However, it is worthy to note that even though the theories are different in orientations, they are not opposed to each other.

Both TGG and SFG offer good analysis of the English sentences. They explain how sentences are used to perform different communicative acts. The linguist is expected to incorporate into a description of sentences information about what sentences would count in relation to performance of communicative acts.

In SFG, sentences are structured into units of words and phrases. It takes a 3-layer view on grammar with elements of the clause structure identified as Subject, Predicator, Complement and Adjunct (SPCA):

	My mother	**gave**	**a book**	**to me**
Transitivity:	Subject	Predicate	Complement	Adjunct
Mood:	Actor	Process	Goal	Recipient
Theme:	Theme		Theme	

Phrases (groups) have one layer of analysis:

1.	The	large	electric	kettle
2.	Deitic	Epithet	Classifier	Thing

In SGF, the clause is considered the highest grammatical unit in the scale:
Clause
Group
Phrase
Word

For example,

3. Making people happy is my hobby. (clause)
4. Making people happy (group)

Also, clauses or sentences are characterized into different functions: subject, verb (predicate), object, complement and adjunct:

5. The man who gave me the money is my uncle.

The man who gave me the money = subject
is = verb/predicate
my uncle = complement

In TGG however, sentences are not analyzed based on ranking but analyzed into constituents or parts. The sentences are themselves generated by a set of rules (phrase structure rules, lexical insertion rules). The sentence structure is divided into two major constituent categories in TGG: the Noun Phrase (NP) and the Verb Phrase (VP) (phrasal categories). These are further broken into intermediate categories (X-bar syntax) and lexical categories. These categories are also assigned functions in the structure of the sentence (head, modifier, complement, and specifier). Strings in a sentence structure are those which are regarded as constituents and have a coherence or affinity. For example, 'the boy' and 'the ball' are constituents in the sentence:

6.   The boy kicked the ball.

This could be replaced by other similar constituents like 'the man', 'the girl, 'the child' etc. on one hand and 'the cat', 'the dog, 'the chair' on the other hand. In terms of function, 'the' is the 'specifier' of the 'boy' while 'boy' is the 'head' in the NP. In 'kicked the ball', the verb 'kicked' is the 'head' of the VP while 'the ball' is the 'complement' of the verb.

Phrase structure rules are used to generate an infinite number of structures in TGG. For example, a sentence analysis can take the following categorization in Transformational Grammar:

S → NP + VP
NP → Det N
VP → V + NP
N → {boy, girl, child, man, woman, ball, dog}
V → {kicked, ate, killed, pushed, chased, hit,}
Det V {the, a, an,}

In the sentence structure in TGG, the constituents or parts have a relation of **dominance**, **constituency** and **precedence**. In the relation of dominance or hierarchy, the Sentence (S) **dominates** all other constituents. For instance, in the sentence:

7.   The boy kicked the ball

S which is the entire sentence dominates the NP and the VP which are its major parts. Similarly, NP and VP which are phrasal categories dominate the lexical items (lexical categories) with which they are made up (the,

boy, kicked, the, ball,). This could be represented in a tree diagram which is an integral part of sentence analysis in TGG as follows:
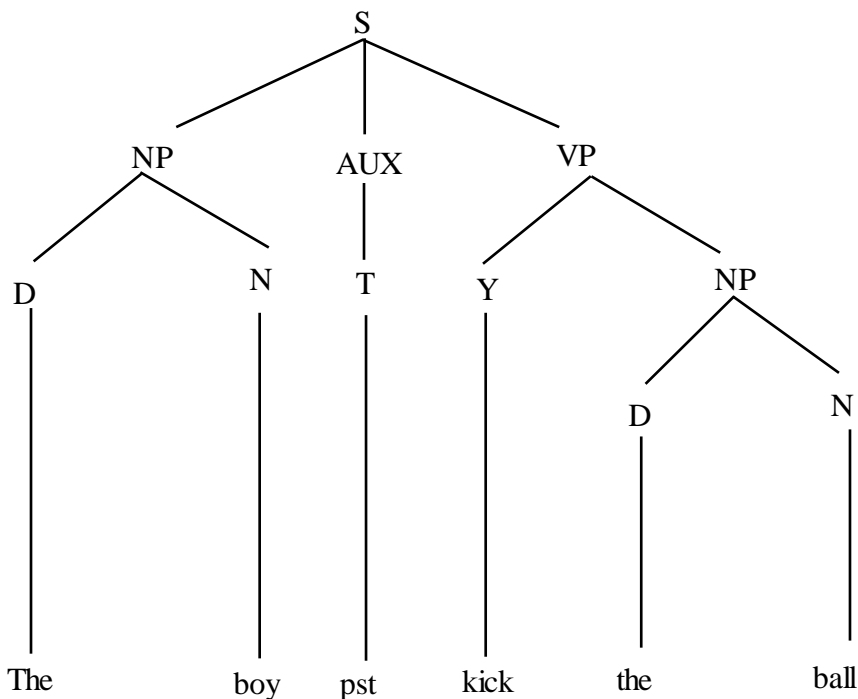
Also, NP and VP are said to be the immediate constituents of S while 'the' and 'dog' are the constituents of NP and 'kicked', 'the', and 'ball' are the constituents of VP in its general structure. In the relation of precedence, articles or determiners usually precede nouns within NPs while 'subject' usually precedes V and 'object' comes after it. For example, *'Dog the' is considered ungrammatical. The same applies to the construction *'ball the kicked'.

Furthermore, in describing position on Levels of Language both grammars identify three components of language that affect the meaning of a sentence, namely semantics, syntax and phonology. These levels of language are crucial to the formation of sentences in TGG. Similarly, a grammatical description of language in SFG is approached hierarchically from three perspectives: semantics, lexicogrammar, and phonology. Of the three, SFG gives priority to semantics considering that form is

shaped by function, and the meaning of an expression determines its phonological and morphological realization. However, SFG additionally introduced another level into linguistic analysis at the apex: Context. Context occupies the 'highest' stratum in the theory, and is language external whereas the remaining four strata are language internal. On the other hand TGG does not account for context in the analysis of sentence. SFG believes that the meaning of a sentence often goes beyond the encoded semantics. "Looking from above, contextual choices activate semantic choices and are construed by semantic choices; semantic choices activate the lexicogrammatical choices and are construed by lexicogrammatical choices" (Hasan, 2009). In other words, to understand an expression it is pertinent to consider the context which influences the speaker's semantic choices and to account for why certain patterns of wording are used instead of others. Thus, semantics is an interface between context and linguistic form and thus interfaces with the nonlinguistic world. According to Akwanya context and function are the shaping agents of language (51) which underscores the inseparability of sentence meaning from context.

Another important feature of TGG's approach to sentence analysis that is unique to them is the concept of deep structure and surface structure. A sentence may convey one meaning on the surface but beneath the string of words may lie another meaning. Thus a sentence with one surface reading may have two or more underlying readings and the ability to account for these meanings is a mark of grammatical competence. Let us consider this sentence: Bill called John a messenger. The surface structure of this sentence shows a stretch of five words sequentially knitted together. However, the deep structure of the sentence is concerned with what lies beneath the sequence of words. The knowledge of deep structure enables users to detect that this single surface structure can be paraphrased to reveal its two meanings as: (a) Bill called a messenger for John. (b) Bill believes that John is a messenger.

On the other hand, SFG is not concerned with deep structure analysis. The position of context as an integral part of the grammar that enables the intended meaning of the utterance to be worked out in the context of situation since both meanings cannot be meant at the same time.

Conclusion

Exploring the strengths and weaknesses of TGG and SFG will not only be beneficial to linguist but language teachers and learners/students too. It is pertinent to recognize SFG's recognition of context in the levels of language and the primacy it places on functionality and choice in the system network of language as an important contribution. Equally, TGG's position on the importance of sentence structure in linguistic analysis is very crucial too. TGG's argument is that the structure of a constituent or clause structure controls its meaning. One is required to understand the framework of language before grasping the meaning of any strings of words in TGG. To create a balance between the two grammatical theories in sentence analysis, it could be argued that the TGGs' approach is more applicable to the reader/hearer while SGF on the other hand applies to the writer/speaker experience which favors meaning before wording. This observation was also strongly advocated in Sadighi and Bavali's (2008) view that TGG and SFG "seem to stand more in a complementary position with respect to each other than in a confronting stance against one another". Therefore, language teachers (especially English) can adopt this complementary theoretical approach to sentence analysis. It is worthy to note that even though the theories are different in orientations and approach, they are not opposed to each other, and thus crucial in language teaching.

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