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TRANSFORMATIONAL GRAMMAR AND JUNCTION GRAMMAR:  
CONTRASTING METAPHORS

Melvin J. Luthy

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## TRANSFORMATIONAL GRAMMAR AND JUNCTION GRAMMAR -- CONTRASTING METAPHORS

Melvin J. Luthy

Metaphorical communication is so much a part of man that he sometimes fails to separate the metaphor from the concept to which it refers. Consequently, in language study, some persons find it difficult to separate linguistic models from the language systems they represent. Like metaphors, linguistic models draw attention to certain features which are felt to be important by the person using them--but they neglect others. Each different grammar or metaphor, then, may call attention to different aspects of language.

It is the ideal goal of the linguist to someday discover a model that will do justice to every aspect of language. Today there is widespread agreement that the first necessary quality of such a grammar is that it be generative; that is, it must model man's creative and intuitive linguistic processes relating form with meaning. To the degree that linguists are able to make explicit approximations of these processes, others, including psychologists and teachers, become interested in using the linguist's description as a basis for their studies of cognition, perception, and language acquisition. It is clear that their studies can be no more valid or insightful than the metaphors upon which they are based. Thus, our modern grammars are a mixed blessing--both aiding our thinking and limiting it, both revealing vital information and obscuring it.

### Transformational Metaphors in Stylistic Analysis

Among those hoping to benefit from the use of modern grammars are students of literature, and one of their primary expectations is for linguistics to aid them in stylistic analysis. Such a goal should prompt us to consider the kind of metaphorical "looking glass" that our grammars provide for such study. By looking at language through the metaphor called transformational grammar, we first see categories and lexical items generated in constituent hierarchies, modeling, in a semantically interpretable way, the meaning of the sentences, or the conceptual structure in the mind of an ideal speaker-hearer. This we call deep structure. Next, we envision deep structure strings being manipulated in various ways, added to, deleted from, and finally given acceptable linear order and phonological value. This we call surface structure. Continuing the metaphor, we often consider paraphrase to be the case in which the meaning of one deep structure has been expressed with differing surface structures; and we view ambiguity as the case in which different deep structures are retrievable from the same surface structure.

This concept of deep structure, surface structure, and paraphrase has allowed students of literature to look at stylistic analysis as the study of the recurrent or habitual use of transformational options, and the preferred choice of paraphrase. This approach, like the metaphor behind it, rests in part on the assumption that valid paraphrases do exist. Attacks on the validity of this assumption do not dissuade researchers from relying on it.

After all, paraphrase, like sentence, may elude our rigorous definition, but it remains a useful concept. Notice, however, that its definition rests on the transformational model positing deep and surface structures.

### Junction Grammar Metaphors in Stylistic Analysis

Understanding that metaphors have limitations, we may profit from asking how our view of paraphrase may differ if we viewed language with other linguistic description. To do so we may turn to another model called Junction Grammar, a generative model briefly outlined in Eldon Lytle's A Grammar of English Subordinate Structures. In this model, the generative process consists of three primary operations: adjunction, or the type of operation which generates a sentence from a subject and a predicate, or a predicate from a verb and its object; conjunction, or the type of operation which combines like categories without changing the category of their common dominating mode; and subjunction, or the type of operation which subordinates modifiers and recategorizes constructions, as in the nominalization of sentences, predicates and verbs, or the adjectivalization of verbs, etc.

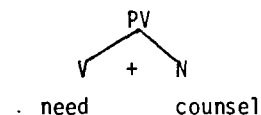
The metaphor of generation in this model does not proceed from a single  $\bar{S}$  node branching into constituent structure to form strings. Rather, it begins at the bottom of the inverted metaphorical tree where grammatical categories (and sememes) are related to each other by the operations mentioned above, such that higher dominating nodes are generated, which in turn are related to each other by one or more of the operations available until a single dominating node is generated. Thus, the following subset of rules (selected from a larger finite set of "junction rules") generates the sentence, "George and Alice help students who need counsel." (Categories and sememes chosen to be related by generative operations: N = George, Alice, students, counsel; V = help, need.)

#### Rules

1.  $V + N = PV$
2.  $N + PV = SV$
3.  $N + N/SV = N$
4.  $N \& N = N$

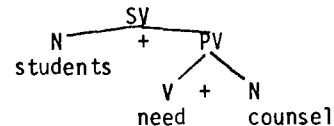
Rule #1 adjoins (adjunction) a verb with a noun, resulting in a category PV (predicate).

Figure A.

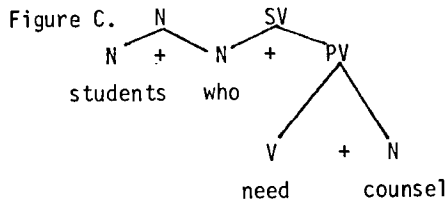


Rule #2 adjoins a noun with a predicate, resulting in the generation of the category SV (sentence).

Figure B.

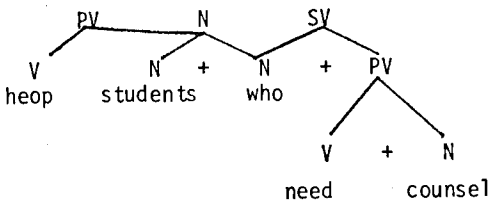


Rule #3 subjoins (subjunction) two identical N's such that the second N is the N dominated by an SV, and the resulting category of the subjunction is N. This type of subjunction can also be called interjunction, since it consists of the intersecting of two sets at the point of their common member. The point of intersection in this case is marked with the relative pronoun who.



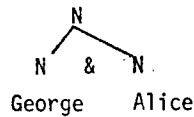
Rule #1 can reapply to generate a new PV category from the adjunction of a V and the new category N.

Figure D.



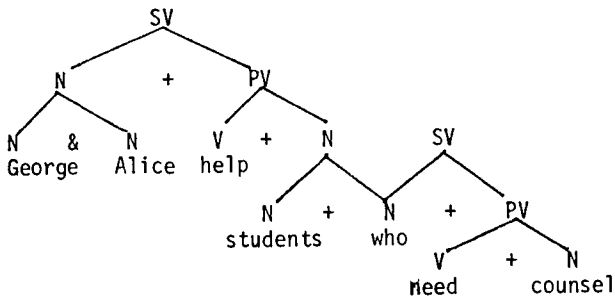
Rule #4 conjoins two N's (neither shown in the tree at this point), and generates an N dominating them both.

Figure E.



Rule #2 can reapply to adjoin the dominating N generated by Rule #4 with the dominating PV generated by the last application of rule #1. The result is a well-formed sentence with a single dominating node, SV:

Figure F.



TG and JG Metaphor Contrasts

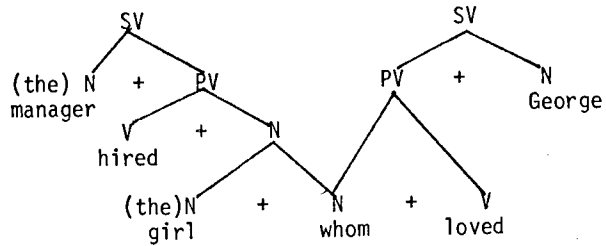
Already we see the metaphor changing. The model suggests, contrary to transformational grammar, that parts of sentences can be generated without first generating the highest dominating sentence node. The model extends this view by generating nominalizations, adjectivalizations,

indeed, many kinds of recategorizations without first generating separate sentences underlying each, as would be the case in standard transformational grammar. Also, the relative pronoun in this model is seen as the marker of the point of intersection of two sentences, rather than the result of a transformational rule changing the second identical NP into a wh-PRO form.

The concept of interjunction can be further illustrated by adding a fifth rule interjoining object N's.

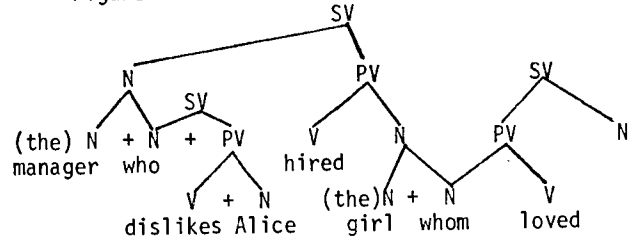
5. N + N/PV = N (N subjoined to the identical N of a PV, with the resulting dominating category of N)

Figure G.



The recursive applications of rule #3 will also generate a relative clause subordinate to the subject N.

Figure H.

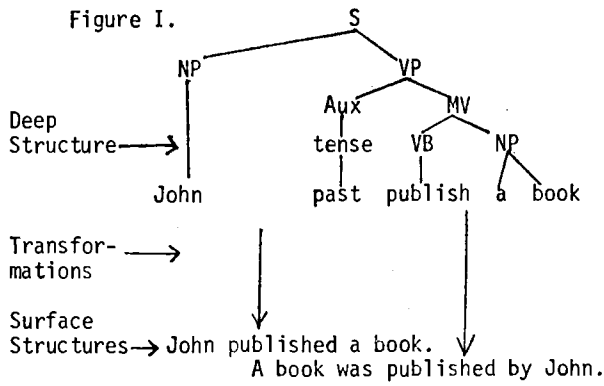


In each case the relative pronoun marks the intersection of two sentences. Word order is not specified at this point in the model since the relationships shown in the tree are considered universal, while word order is language specific. (This nonordered representation is another contrast with transformational grammar.)

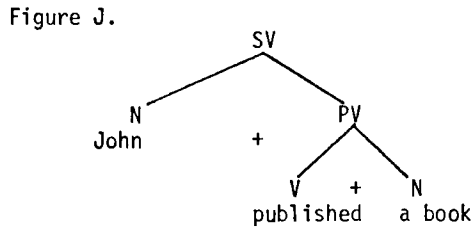
In transformational grammar the pronoun is the result of a second occurrence (under given conditions) of an identical (co-referential) NP which assumes the wh-PRO feature and then is moved to the beginning of the sentence of which it is a part.

We may turn now to the active-passive question which, in standard transformational grammar, is often used to illustrate the concept of paraphrase. Those using transformational grammar for stylistic analysis will posit one deep structure for the basic thought, and then relate that deep structure via transformational rules to different surface structures, or paraphrases. (See Figure I. on following page)

In junction grammar, transformational rules are not used in sentence generation. Consequently, each active and passive sentence will have its own phrase marker. (See Figure J. on following page.)



between active and passive rather than on their sameness. Our attention is drawn to other generative operations: we notice the writer's recategorization of PV. Instead of leaving it as a PV as in Figure J, he prefers to recategorize it as an ADJ, and then modifies the ADJ with the agentive prepositional phrase. Consequently, in this model, the sameness in syntactic deep structure cannot be part of our definition of paraphrase since active and passive paraphrases do not share the same deep syntax. Paraphrase, in junction grammar, therefore, must be defined in yet-to-be-understood semantic terms. This is a major difference with far-reaching implications for those wishing to use a linguistic model for a stylistic analysis.



Another significant area of difference in these metaphors is the manner of modeling modification. As one studies the available transformational texts, he is struck by the lack of information regarding adverbial modification, as if it were not of concern in a model of linguistic competence. Of course it is of concern, but the model does not lend itself well to clear explication of it. Adjectival modification is implicitly shown with the embedding of S's and NP's. Sentence modifiers are shown as parts of Pre-Sentence constituents, but other adverbial modifiers are not clearly distinguished from other instances of concatenation:

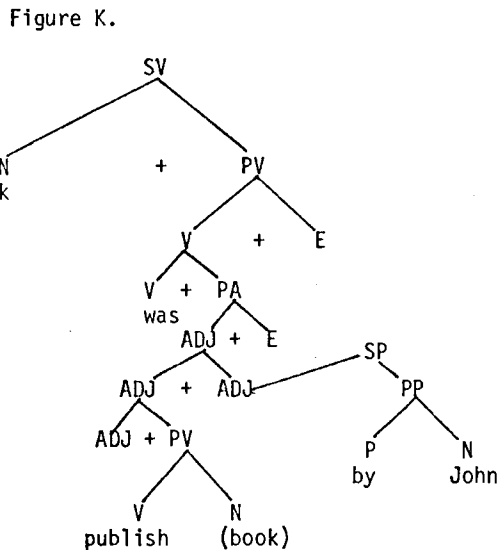
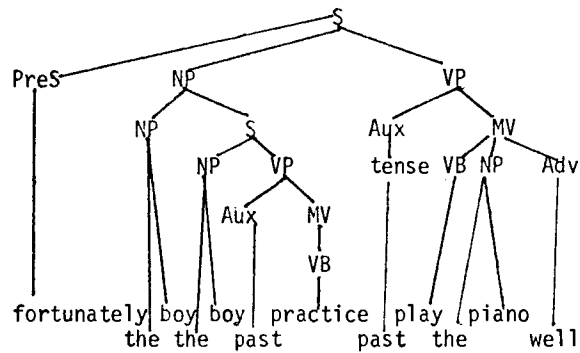


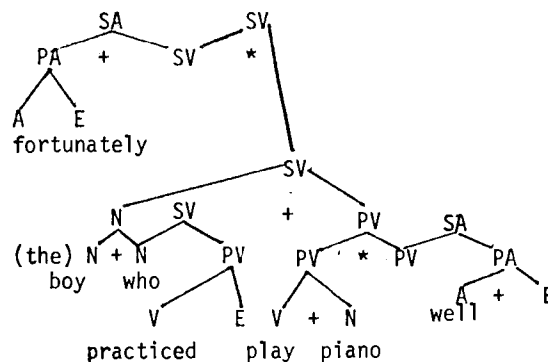
Figure L.



The junction grammar model makes a general claim that each instance of modification involves the operation of subjunction. Consequently, each instance of modification, adjectival or adverbial, is shown in essentially the same way:

The passive metaphorical tree suggests that the dominating SV in figure K, is not transitive since the object category is empty (E). Yet, there is a transitive relationship in the precate publish book, which has been recategorized as ADJ through the operation of subjunction, i.e. published book. The highest ADJ category then functions like any other adjective following the be verb, and in this case is modified by agentive prepositional phrase subordinated by the same type of rule that subordinated relative clauses. Since the subject of the sentence is identical with the object of the adjectivalized predicate, the object N, although intuitively felt, is not spoken in English sentences.

Figure M.



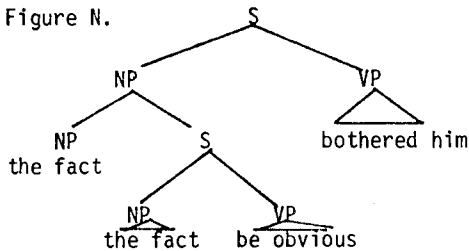
If we view stylistic analysis through this metaphor we begin to concentrate on the difference

In each case, a modifying structure has been subjoined at a specific level of modification in the phrase marker: the sentence modifier has been subjoined at the sentence level, the relative clause has been subjoined at the noun level, and the adverb has been subjoined at the predicate level, since it modifies the entire predicate.

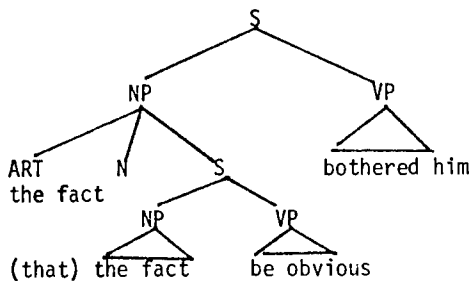
This method of modeling modification allows for the explication of nested modifiers in a way unavailable in standard transformational grammar. Consider the further modification of the adverb well by the word very. The phrase structure rules in a standard transformational grammar would consider this a concatenated adverb sequence, obscuring the intuitive knowledge we have of nested modification: The junction grammar model would simply subjoin very to well.

Whether or not we are consciously aware of level of modification is often a function of the metaphors we use. From my own experience, I find that students completing their first semester of transformational grammar are seldom aware of the problems of modification, since the model they study does not clearly focus on them. More advanced students trying out their newly acquired transformational wings begin to work with structures that that soon bewilder them. For example, they learn that in some way a distinction must be made between the sentences, "The fact that was obvious bothered him." and "The fact that the fact was obvious bothered him." They learn that perhaps the most satisfying way of handling the problem is to show that the subject noun phrases in such sentences are different. The relative clause is embedded with the rule  $NP \Rightarrow NP + S$ ; whereas, the complement is embedded with the rule  $NP \Rightarrow (ART) N + S$ . This makes it possible for an NP in the relative S to be identical with the preceding NP. This condition must be met for a relative embedding. Since no NP exists to the left of S in the complement embedding, this cannot be construed as a relative embedding.

Figure N.



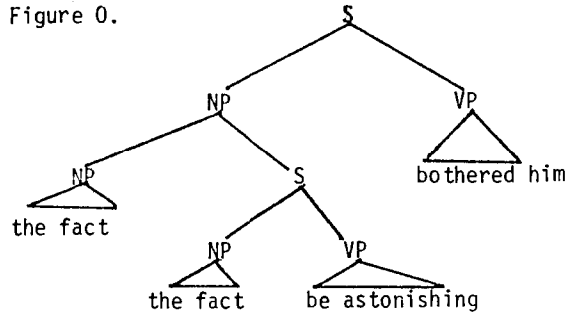
Relative Embedding



Complement Embedding

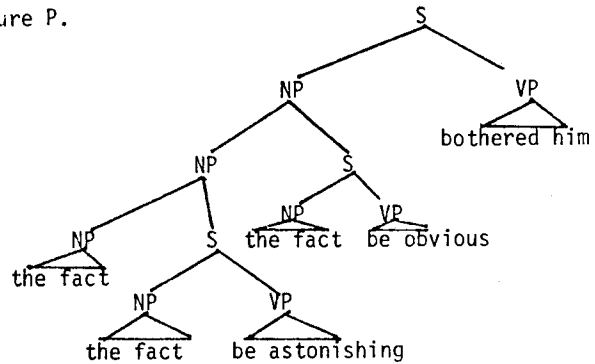
The rub comes when a student wants to further modify the noun fact in the complement embedding by saying, "The astonishing fact that the fact was obvious. . ." At this point he returns to the standard transformational claim that adjectives are derived from deep structure relative clause embeddings. Thus, the astonishing fact must have the following structure:

Figure O.



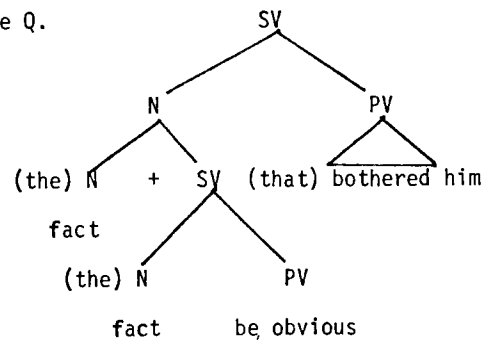
Placing this modification in the tree, and hoping to follow it with a complement embedding is perplexing, indeed, since the sequence N + S, necessary for the S to be interpreted as complement embedding, is not present when the noun is modified:

Figure P.

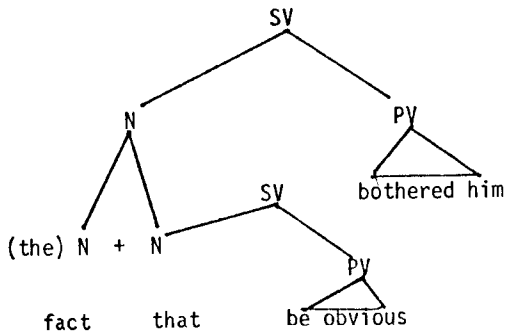


The method of showing modification in the junction grammar model is free from these limitations: First, the "that" complement is shown as a full subjunction in which the entire complement sentence intersects with the preceding noun, rather than with only the subject or object noun, as is the case with a relative clause:

Figure Q.



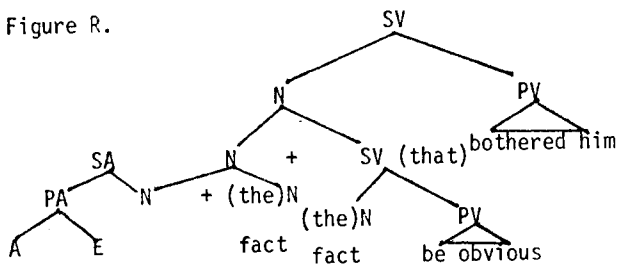
Complement (full subjunction)



Relative (interjunction)

This leaves the antecedent noun unencumbered to be modified in any appropriate way:

Figure R.



astonishing

For junction grammar as a metaphor, this is clearly an advantage; it draws our attention to important concepts of modification that we have neglected because our transformational metaphor does not illuminate them.

On the other hand, as a metaphor, the transformational model has many other advantages. For example, it illustrates the regular syntactic dependencies involved with English auxiliaries, as it metaphorically draws our attention to a systematic movement of affixes. Since the junction grammar metaphor is not transformational it does not focus our attention on auxiliaries in this way.

What we see, then, when we briefly contrast the operations of two generative grammars is shifting metaphors, each calling attention to specific properties and processes: The transformational model with a syntactic base generating deep structure sentences later modified with transformational rules in various ways to describe sentence relatedness, ambiguity, synonymy, and to suggest a definition of paraphrase; junction grammar with a syntacto-semantic base generating through adjunction, subjunction and conjunction deep structure categories leading to sentence descriptions in which modification is clearly shown.

In addition to the obvious need to apply evaluation criteria to both models, there is a subtle, yet equally important need to recognize that whatever model is used by the researcher, his insights will be aided and limited, illuminated and obscured by his chosen metaphor. Without that constant awareness he may one day find himself in his ivory tower--with the door locked.