

# Hierarchy in discourse analysis: A revision of tagmemics

VERN S. POYTHRESS

## Introduction

What is a good framework for discourse analysis? A good set of structures for discourse analysis will be capable of capturing in its 'net' nearly everything that goes on in discourse. In this article I shall be drawing on a previous article that provides the broad framework for such analysis (Poythress 1982). Here I shall be concerned with explicating the role of hierarchy in discourse. The general principles will be illustrated using Mark 4:30–32 as an example. It should be noted that the hierarchies I will be speaking of are those associated with the linear temporal order of a discourse. But with certain changes the material should be applicable to semiotic theory in general. Hierarchy can occur in a context of spatial dimensions or abstract dimensions, as well as in the context of the temporal dimension. My discussion is confined to the hierarchies of language because I believe that this is a stable starting point from which to generalize later into semiotics.

## What is hierarchy?

In tagmemic theory, 'hierarchy' is a word conventionally used to denote a series of structured levels (or ranks) of progressively increasing size, each level having its own characteristic structure in relation to levels above and below (Pike 1967:565–640; Pike and Pike 1977:3; Longacre 1976:255–310). Thus the 'grammatical hierarchy' consists of morphemes (the lowest level), words, phrases, clauses, sentences, paragraphs, monologues, and perhaps higher units. Items from each level are typically constructed out of items from the next lowest level (though 'level-skipping', 'backlooping', and 'recursion' sometimes occur [Longacre 1976:260–271; 1970]).

In the practice of tagmemics, the idea of hierarchy has often been

virtually identified with three more specific forms: phonological hierarchy (consisting of phonemes, syllables, phonological words or stress groups, etc.), grammatical hierarchy (consisting of morphemes, grammatical words, phrases, etc.), and referential hierarchy (for some tagmemicists, 'lexical', 'lexemic', 'semantic', or 'semiological' hierarchy).

But here I break in a minor way with this tagmemic tradition. For me, the difference between phonology, grammar, and reference occurs primarily on the plane of the language *system* rather than on the plane of hierarchy (see the development in Poythress 1982). For example, the grammatical unit 'transitive independent clause' is identifiable as a *grammatical* unit (rather than a phonological or referential unit, or some other combination) primarily in terms of its function in a grammatical array of clause types (e.g., Table 1). It is not so easily identifiable as grammatical in terms of its occurrence in a hierarchy. After all, any actual clause occurring in a hierarchy of larger units is likely to be not only a grammatical unit occurring in larger grammatical units, but also simultaneously a phonological unit occurring in larger phonological units, and a referential unit occurring in larger referential units. The distinctiveness of phonological, grammatical, and referential material is not so clearly visible in hierarchical manifestations as it is in the presentation of units as points of opposition in a systematic array like Table 1. Hence I define the distinction between the phonological, the grammatical, and the referential first of all in terms of the language *system*, not in terms of hierarchy.

On the other hand, the referential, phonological, and grammatical systems do interlock with hierarchy. It is ultimately impossible to recognize or define these systems and their units without at least implicit use of hierarchy. Moreover, the referential, phonological, and grammatical systems 'project themselves into' the area of hierarchy, and they are reflected in the structure of hierarchy. Thus in my opinion it is perfectly

Table 1. *A hypothetical subsystem of grammatical clause types*

	Independent	Dependent
Ambient	×	×
Equative	×	×
Intransitive	×	×
Transitive	×	×
Bitransitive	×	×

appropriate to speak of referential, phonological, and grammatical hierarchies as tagmemicists have done.

The nature of these three hierarchies is easy to illustrate using an example from Mark 4:30–32:

<sup>30</sup>And he said, 'With what can we compare the kingdom of God, or what parable shall we use for it? <sup>31</sup>It is like a grain of mustard seed, which, when sown upon the ground, is the smallest of all the seeds on earth; <sup>32</sup>yet when it is sown it grows up and becomes the greatest of all shrubs, and puts forth large branches, so that the birds of the air can make nests in its shade.'

Phonologically, or rather graphologically, vs. 31 of Mark 4 consists of letters forming words, words forming 'punctuation groups' set off by punctuation marks (;, ?! etc.), and these groups forming paragraphs (marked by indentation). Superimposed on this structure in my text are verse and chapter markings that need not always but frequently do coincide with major graphological boundaries of punctuation groups and paragraphs.

The grammatical hierarchy of vs. 31 has a different structure. It consists of a copulative clause 'It is like a grain of mustard seed, which, ...' Within this clause the object of the preposition 'like' is a complicated noun phrase that includes, as a loose-knit modifier, a relative clause 'which, when sown upon the ground, is the smallest of all the seeds on earth'. These various constituents can in turn be subdivided.

The referential hierarchy includes, among other things, the two propositions 'a grain of mustard seed is sown upon the ground' and 'a grain of mustard seed is the smallest of all the seeds on earth', related by a propositional relation of simultaneity. In describing the referential hierarchy I am following closely Beekman and Callow's approach to what they term semantic structure (1974:271–281; 1977).

I have argued that the referential, phonological, and grammatical systems in their distinctiveness each produce a distinct 'reflection' of sorts in the area of hierarchy. Similarly, the distinction between referential, phonological, and grammatical produces a 'reflection' in the area of units. We may speak of referential units (e.g., concepts and propositions; cf. Beekman and Callow 1974:271–281), phonological units (e.g., phonemes and pause groups; cf. E. Pike 1976), and grammatical units (e.g., phrases and clauses). We may distinguish phonological contrast, variation, and distribution from grammatical contrast, variation, and distribution, respectively.

From my viewpoint, in terms of what I want the word 'hierarchy' to signify, the 'essence' of hierarchy lies not in phonology, grammar,

reference, or the relation between them, but in the part-whole structure. A part is a part of a whole. But that is not all. The part makes a contribution to the whole, large or small. And that contribution is (usually) not as a mere mathematical sum. The part has, as it were, a place prepared for it (a slot) that helps to determine the contribution of the part to the whole.

I will return to a further analysis of the aspects of this part-whole relation after discussing the contribution of units to the structure of hierarchy.

### Units reflected in hierarchy: Filler, prominence, and function

The referential, phonological, and grammatical systems reflect themselves in hierarchical structure. The same may be expected of contrast, variation, and distribution of units referred to and described in Poythress (1982) and K. Pike (1976).

In other words, contrast, variation, and distribution engender reflections or analogues within hierarchy. I should like to designate these analogues filler, prominence, and function, respectively. Suppose that a smaller unit  $x$  forms a part of a larger unit  $y$ , as in Figure 1a. Usually,  $y$  will be a unit on a higher level of a hierarchy,  $x$  a unit on a lower level. I concentrate on the relation of  $x$  to  $y$ .

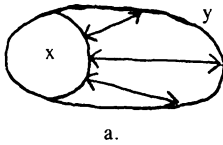
The *filler* of this relation is the emic class with the same *internal* structure as  $x$ . That is, it is a class defined in terms of similarity in the internal structure of the members. (See Figure 1b.)

The *prominence* in the relation of  $x$  to  $y$  is the nature and degree of contribution that  $x$  makes to  $y$ . In simplified form, this prominence can be of two degrees: nuclear or marginal.  $x$  is a 'nucleus' or more prominent element in  $y$  if it makes a large contribution to the meaning of  $y$ . Generally speaking, (1) nuclei are obligatory (their omission is incompatible with the retention of the unit  $y$ ), (2) they are usually more complex in internal structure than margins, and (3) a large open class of units can be substituted for an  $x$  constituting a nuclear element in  $y$ . (See Figure 1c.)

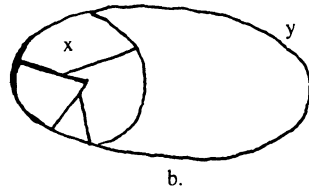
The *function* in the relation of  $x$  to  $y$  is the emic 'slot' or 'role' that  $x$  fills in  $y$ . This is closely correlated to the structure of the 'frame' consisting of the parts of  $y$  that are not  $x$  plus the empty spot that could be filled either by  $x$  or some other filler. (See Figure 1d.)

If, now, we intersect the distinction between filler, prominence, and function with the earlier division into referential, phonological, and grammatical hierarchies, we obtain nine 'boxes' suitable for analyzing various aspects of discourse. (See Figure 2.) We may speak of referential

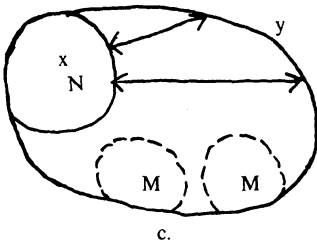
A hierarchical inclusion



Filler:  $x$  in its internal structure



Prominence:  $x$  as nuclear ( $N$ ), other elements marginal ( $M$ )



Function: slot as the empty space in which  $x$  would fit

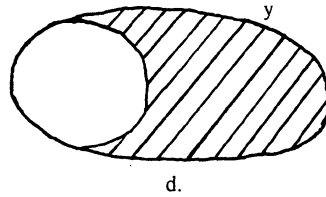


Figure 1. Filler, prominence, and function in hierarchy

	Filler	Prominence	Function
Referential hierarchy	1	2	3
Grammatical hierarchy	4	5	6
Phonological hierarchy	7	8	9

Figure 2. A nine-box system for hierarchical analysis

fillers, prominences, and functions (boxes 1, 2, and 3); grammatical fillers, prominences, and functions (boxes 4, 5, and 6); and phonological fillers, prominences, and functions (boxes 7, 8, and 9). In general, these need not be the same, because of the distinctiveness of the three hierarchies (Pike 1967:93).

As a simple example illustrating the use of these nine boxes, I take the clause 'it grows up' from Mark 4:32. Suppose this clause is uttered orally with two stresses and a lengthening of the final /p/ to indicate a slight break, the end of a 'phonological phrase':

it 'grows 'up'

The total analysis of this clause is given in Figure 3. In Figure 3 material in box 9 is omitted because it is redundant to box 8. This system of nine boxes has significant similarities to a nine-box system evolved by Kenneth L. Pike at one stage (about 1972) in his formulation of tagmemic theory.

As I argued in my earlier article (1982), unit, hierarchy, and context (including in particular the symbolic context of the language system and subsystems) make up a triple of correlative aspects. These aspects together can potentially cover the analysis of discourse meaning. Now my system of nine boxes arises from the intersection of aspects of unit (contrast, variation, and distribution) and aspects of context (reference, grammar, and phonology) *on* hierarchy. Thus the boxes among them have a potential for categorizing most of the central types of concerns that linguists have had with discourse.

### **Segmental, transformational, and oppositional subdivisions of hierarchy**

I am prepared, however, to introduce still another set of distinctions cutting across all the rest that I have made. This set of distinctions springs more directly from the very nature of hierarchy than do the distinctions involved in Figure 2.

Suppose that units *x*, *y*, and *z* are elements in a hierarchy. Suppose that *z* is a part of *x*, and that *x* is part of the whole *y* (see Figure 4). The hierarchical relation sustained by *x* may be analyzed in three respects.

First, *x* makes a *segmental* contribution to the hierarchy. By segmental contribution I mean the contribution that *x* makes by virtue of the particular emic segmentation that *x* and *y* have. It is that aspect of *x*'s contribution that remains invariant when functions and prominences within *x* and *y* are held basically invariant, but one allows different fillers to be substituted. (See Figure 4a and my definition of partial enateness [1978:72].)

Second, *x* makes a *transformational* contribution to the hierarchy. By that I mean the contribution that *x* makes by virtue of its transformational (rule-governed) relations to other structures whose linear order is in general different but whose smaller segments are similar. It is that aspect

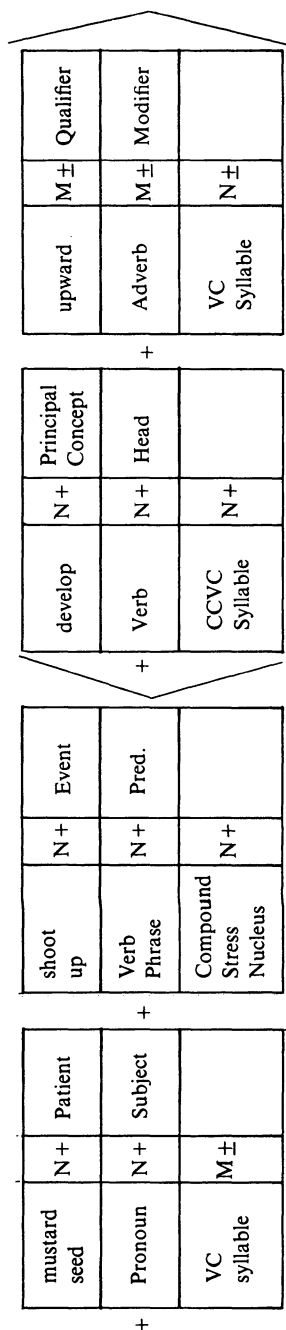


Figure 3. A sample hierarchical analysis by nine-box system (Mark 4:32)

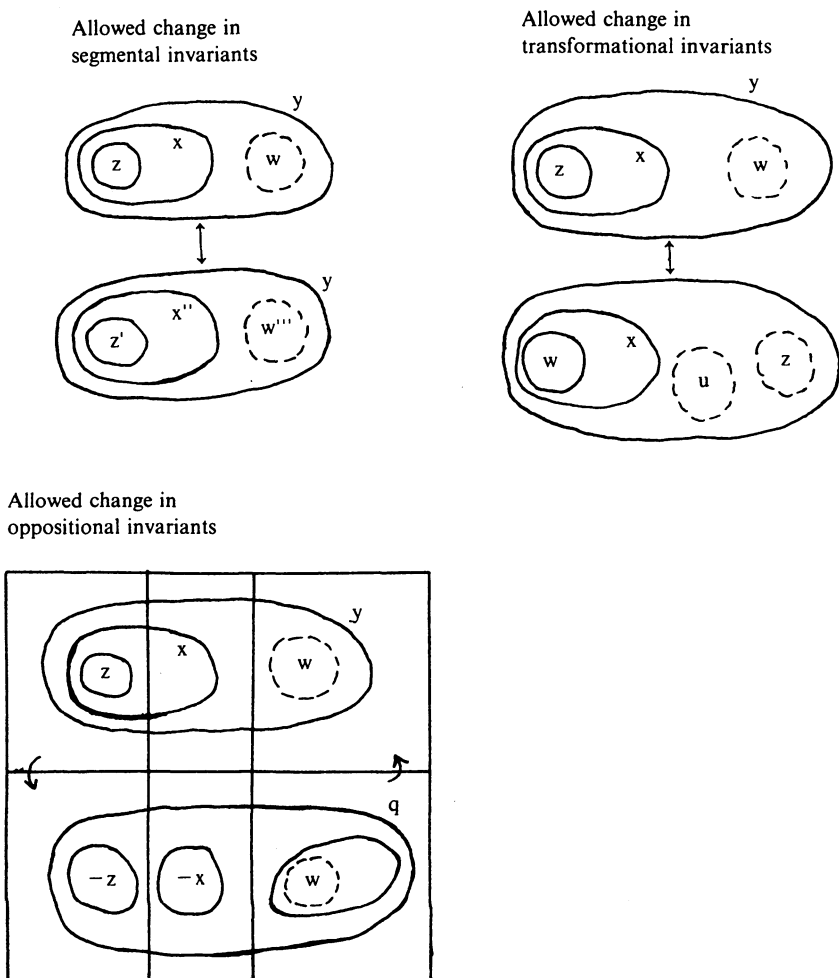


Figure 4. *The segmental, transformational, and oppositional in hierarchy*

of  $x$ 's contribution that remains invariant when fillers and (as far as possible) functions are held basically invariant, but one allows prominences in particular to be altered. (See Figure 4b and my definition of partial agnateness [1978:74].)

The distinction between the segmental and the transformational is a fairly subtle one, so some further explanation and illustration is in order. Within a tagmemic framework, I am trying to utilize the insight of the transformational grammarians concerning the importance of trans-



formations. To oversimplify, my 'segmental' aspect of hierarchy is what is embodied in the transformationalists' grammatical surface structure. My 'transformational' aspect of hierarchy is what is embodied in the transformationalists' grammatical deep structure. But in my case, since the system is primarily analytical and heuristic, not generative, I regard the 'transformations' as operating equally in both directions. A 'transformation' is one way of denoting a rule-governed relation between two hierarchical structures.

As an illustration, consider the relation between active and passive clauses in English.

- (1) The small boy hears the trumpet.
- (2) The trumpet is heard by the small boy.
- (3) The trumpet is heard.

Sentences 1, 2, and 3 are related to one another by transformational rules. Of course, 3 cannot be transformed back into 1 or 2 if the information about the actor has actually been lost (and not merely become implicit in the discourse). Nevertheless, I want all three clauses to count as transformationally similar to one another. The main difference between these three clauses in terms of meaning and impact is in the area of prominence (Grimes 1975:322-336). 'The small boy' as the topic of the active clause naturally receives a greater prominence. 'The trumpet' is more prominent in the first passive clause, 'the small boy' having dropped into the background. In the third clause the boy is even further in the background, his presence being only implicit. By contrast, the major fillers are the same in the first two clauses: 'the small boy', the verb 'hear', 'the trumpet'. Insofar as they still occur in the third clause, they are still the same. Prominence has been significantly altered without comparable alteration of the fillers.

From a grammatical point of view the transformationally invariant function of 'the small boy' is the function common to all three of the above clauses. 'The small boy' is 'actor' in all three.<sup>2</sup> By contrast, the segmentally invariant function of 'the small boy' is different in each of the three. In the first 'the small boy' functions as subject of the clause, in the second as object of a preposition, and in the third  $\emptyset$ .

One may analyze the unit 'the small boy' in a similar way as a filler. Segmentally, 'the small boy' is a noun phrase segmentally similar to other noun phrases, such as 'the huge house', 'the extraordinary picture of Napoleon'. Transformationally, 'the small boy' is similar to 'the boy who is small'. What is grammatically invariant between these two (some kind of relation of modification) we may designate with a name of our choice.

Third, in addition to the segmental and transformational aspects of hierarchy, there is a third aspect, what I will call an *oppositional* aspect.

Frequently, this aspect has been termed cohesion. But 'cohesion' is too amorphous a word for my purposes. What I have in mind is that aspect of hierarchy that remains invariant under systematic shifts from one axis to another in a multidimensional system of oppositions. Typical cohesive devices like grammatical agreement and phoric reference are of oppositional nature. Sameness of grammatical gender, number, or case and sameness of reference are opposed to difference of grammatical gender, number, or case and difference of reference. (See Figure 4c.)

But I must make some qualifications. After all, any unit, any filler, prominence, or function contrasts with some other unit, filler, prominence, or function. The type of contrast or opposition that I have in view is one not tightly bound up with fixity of the construction in which the contrasted element is found. Thus the contrast between transitive and intransitive clauses, or between dependent and independent clauses, is based on both their internal structure in immediate constituents and their distribution into the next higher level, the sentence. Thus these contrasts are not of a fundamentally 'oppositional' kind, in my sense.

On the other hand, consider the opposition between masculine and feminine gender, between singular and plural, and between past, present, and future tenses. These are oppositions that maintain their integrity all the way across grammatical units of rather large size (paragraphs, at least). They do so in a manner semi-independent of the exact constructions used in the paragraph. Of course, the singular-plural opposition and other oppositions of this type are often signaled at a low level by morphemes (e.g., {-s} for plural). But these morphemes exert their effect not merely in an immediate hierarchical distribution (e.g., 'boys'), but in a way not controlled by the immediate distribution (e.g., verbs with 'boys' as subjects must be plural, and a pronoun coreferential with 'boys' must be plural). Similarly, 'do' used as a proverb must sustain a regular relation in terms of tense to the verb with which it is coreferential: 'He'll eat it; he'll do so when we force him'. Or, 'He *ate* it; he *did* so when we forced him'.

I have illustrated the idea of the oppositional aspect of hierarchy using examples from the grammatical hierarchy. That is natural, because the grammatical examples tend to be the most tractable. Grammar, it appears, is complex enough to illustrate most types of phenomena (unlike phonology), yet not so complex as to overwhelm us (unlike reference). A little reflection, however, will produce some examples of segmental, transformational, and oppositional aspects of the phonological and referential hierarchies as well. The building of syllables from phonemes and phonological words from syllables is largely a simple matter of the segmental aspect of the phonological hierarchy. We may have Syllable<sub>1</sub> = + C + V, Syllable<sub>2</sub> = + C + C + V + C as examples. Assonance, on

the other hand, is basically an oppositional phenomenon, whether it be alliteration, rhyme, or some more general similarity. Meter is basically a transformational phenomenon. Existence of a regular meter depends on the fixity of a larger phonological structure, grouping rhythmic feet together in the proper way. Transformational interchange of the feet will, in general, leave the total structure invariant. When rhyme is combined with meter, as in typical poetic lines, rhyme itself takes on a transformational aspect, since then the rhyming couplets can be transformationally interchanged.

Now consider the referential hierarchy. As I have defined it elsewhere (1978:77–81; 1982), the referential system concerns only what is left invariant under close paraphrase. The grammatical structure of a discourse may be completely altered. What remains? What remains is the basic content of what is said: the world referred to, the characters, the plot, the themes. These are arranged in hierarchical structures in time, space, and topic. But can we still speak of segmental, transformational, and oppositional aspects of the referential hierarchy? I believe so.

First, I claim that the order of presentation of a discourse still makes a difference, even on the referential plane. The difference between what the audience knows and does not know at any given point in the discourse (old information versus new information) colors the meaning of the whole. Moreover, the distinction between old information and new information is fundamentally a referential matter, not a grammatical one. There are, to be sure, grammatical devices like anaphora that correlate closely to old information. But other, unrelated grammatical constructions can usually paraphrase the same sequence of old and new information. Similarly, the type and sequence of propositional relations in the Beekman and Callow sense (1974:287–342) depend on the exact order of presentation of the discourse. Propositional relations are also part of the referential hierarchy, since they can be manifested by transformationally unrelated grammatical constructions. This order-dependent structuring of the referential hierarchy is the segmental aspect of the referential hierarchy. I will also call it *rhetorical* structure.

Second, let us say that a *transformation* of the referential hierarchy is a paraphrase freely altering the order of presentation of the discourse, but leaving invariant what the discourse affirms, states, orders, inquires about, etc. The plot,<sup>3</sup> the characters, the 'world' (real or imaginary) that the discourse constructs is to remain the same. In particular, the order of events that the discourse recounts must remain the same, though the order in which they are recounted may change (e.g., the flashback). The relations between the topics that the discourse discusses must remain the same, though the order in which they are discussed may change. Our

interest, then, is in the 'mundane context' (Poythress 1982), in the subject-matter of the discourse, rather than in the rhetorical unfolding of the discourse. Yet, when we are dealing with discourse meaning, we still try to retain the speaker's and the discourse's own (emic) point of view. What the discourse affirms, not what we think it should have affirmed or what we think is true, is in the center of the picture. Only in discussing the 'significance' of the discourse (Poythress 1982) may we broaden out to an etic viewpoint. In sum, the transformational aspect of the referential hierarchy consists in that aspect of reference left invariant under referential transformations as defined above. I will also speak of this invariant material as plot structure or motific structure (since plot and subject-matter are left invariant).

Propp's 'functions' (1968) and Greimas's 'functions' (1966) are instances of motific structure. Both Propp and Greimas are interested in the functioning of a given event or event-complex in the larger context of the plot. Hence their categories (villainy, counteraction, departure, struggle, marking, mandating, acceptance, domination, attribution) describe types of topical function in my sense of the word 'function' (previous section). Propp's 'motifs' correspond to my 'fillers' for these functional slots. In my opinion the distinction between emic and etic in Pike's sense (1967:37-72) cuts across all these distinctions, since any of the above aspects of discourse can be viewed from the standpoint of the native speaker (emic) or from some other standpoint (etic).

Third, I must consider what to make of the 'oppositional' aspect of the referential hierarchy. Recall that in grammar, the oppositional aspect manifested itself in two or more parallel grammatical structures, in each of which some grammatical feature pervaded the whole. For example, a repetition of singulars 'boy', 'he', 'makes', 'is', etc. pervades one structure, while a repetition of plurals 'boys', 'they', 'make', 'are' pervades a second parallel structure. Similarly, the oppositional aspect of the referential hierarchy will be characterized by opposition between two or more parallel referential structures, in each of which some referential feature pervades the whole.

The most obvious examples of such opposition are in metaphor, parable, and allegory. Metaphor brings together two different 'fields' of meaning normally in opposition to one another: the human world versus the animal world versus the plant world; abstract versus concrete; color versus sound; etc. Each 'field' has its own feature that pervades the whole of a proposition, a paragraph, or a story. Thus Mark 4:31-32 is pervaded simultaneously by thoughts of the mustard seed and thoughts of the kingdom of God. In metaphor and parable there are two different fields of meaning related to one another at one or many points by analogy.

But metaphor, parable, and other instances of simultaneous double or multiple meaning are not the only cases depending on analogy. Two analogous fields of meaning can manifest themselves in hierarchy not only simultaneously but also successively. This occurs when two analogous incidents or two analogous topics occur in the course of a discourse. But a simple repetition, reoccurrence, or recapitulation of an incident or a topic does not count as an analogy. A repetition or reoccurrence figures rather as part of the transformational aspect of hierarchy, since it is something invariant once we are allowed to reorder the discourse. A genuine analogy remains an analogy and not an identity under reordering. I will also speak of the oppositional aspect of the referential hierarchy as the *analogical* structure.

The distinction between motific structure and analogical structure is sometimes a fine one, cutting across a general discussion of the 'themes' of a discourse. 'Themes' consisting in repetition of referential items belong primarily to the plane of motific structure, whereas 'themes' consisting in a play of analogies belong primarily to the analogical structure.

In Mark, for example, Jesus's parabolic teaching shares a common 'theme' of the kingdom of God. But this theme is manifested primarily in terms of repetition. Hence it is primarily a factor in the motific structure. On the other hand, what Jesus *says* about the kingdom of God sustains a complex analogy to what he *does* in working miracles manifesting the coming of God's kingdom and dominion. Thus the way in which the 'kingdom of God' appears in the *analogical relation* between Jesus's teaching and his miracles belongs primarily to the analogical structure.

Consider also the interest in demons in the Gospel of Mark. The different exorcisms that Jesus performs are close to being repetitions; as such, they belong to the motific structure. But the exorcisms are related by analogy to Jesus's temptation (Mark 1:13) and to Jesus's conflict with Satanic agents (the Pharisees, and in one place Peter; Mark 8:33). Such relations belong to the analogical structure. But it must be admitted that the matter is complex. If one looks at the various exorcisms in terms of their fine-grained structure, it appears that they are not mere repetitions with no differences. Hence, if they are not identical, are they not *analogous*? This shows that whether one finds analogy depends on the level of the hierarchy at which one looks.

The distinction between rhetorical structure, motific structure, and analogical structure can now be used to further elucidate the nature of Roland Barthes's five codes (Barthes 1974:17-22). I argued earlier (1982) that Barthes's proairetic code (code of actions), cultural code, and connotative code concern themselves primarily with various elements in the 'mundane context' (subject-matter) of a discourse. But I suppose that

in dealing with each of these codes Barthes does not intend to lose sight of their functioning in the hierarchy of discourse. His own system of running commentary in *S/Z* promotes a certain attentiveness to hierarchical structure of the discourse (Barthes 1974:11–16). Insofar as Barthes is dealing with these matters in the context of hierarchy, he is dealing with a ‘reflection’ of mundane context on hierarchy, and thus with the referential hierarchy. To the extent that this is what Barthes is doing, the three codes, proairetic, cultural, and connotative, all belong to the motific structure. Barthes’s ‘hermeneutic code’ (code of puzzles posed by the discourse) belongs to the rhetorical structure, because it is highly dependent on the order of the discourse. Barthes’s ‘symbolic code’ (‘ideas around which a work is constructed’) belongs to the analogical structure.

I have now finished the theoretical description of the distinction between segmental, transformational, and oppositional aspects of hierarchy. Is this threefold distinction related to the other threefold distinctions that I have made on the basis of the contrast between static, dynamic, and relational perspectives? I believe that it is. The relationship can be grasped from the illustrations in Figure 4. The segmental approach leaves things in the same basic structure, and is thus ‘static’. The transformational approach freely *changes* discourse order, and is thus ‘dynamic’. The oppositional approach concerns itself with parallel structures in an array (Figure 4c), and is thus relational.

### **Application of discourse analysis to Mark 4:30–32**

The general theoretical discussion in the preceding sections needs to be fleshed out by examples. I will do this by analyzing Mark 4:30–32 afresh in terms of all the categories described in the first four sections above. The categories arrange themselves in a series of three threes, as in Figure 5. When the three triples are ‘intersected’ with one another, a group of 27 boxes results (Figure 6). These 27 boxes are also the result of intersecting the nine boxes of Figure 2 with the three further distinctions between segmental, transformational, and oppositional structure.

When subdivisions are made this fine, the material in one box is usually highly redundant to material in one or more other boxes. Redundancy is particularly frequent in the phonology and grammar planes, the prominence and function planes, and the transformational and oppositional planes. The boxes hidden from view in Figure 6 are most frequently redundant.

I find it convenient to use tree diagrams to display results from these 27 boxes. ‘Filler’ material is used to label nodes on a tree; ‘function’ material

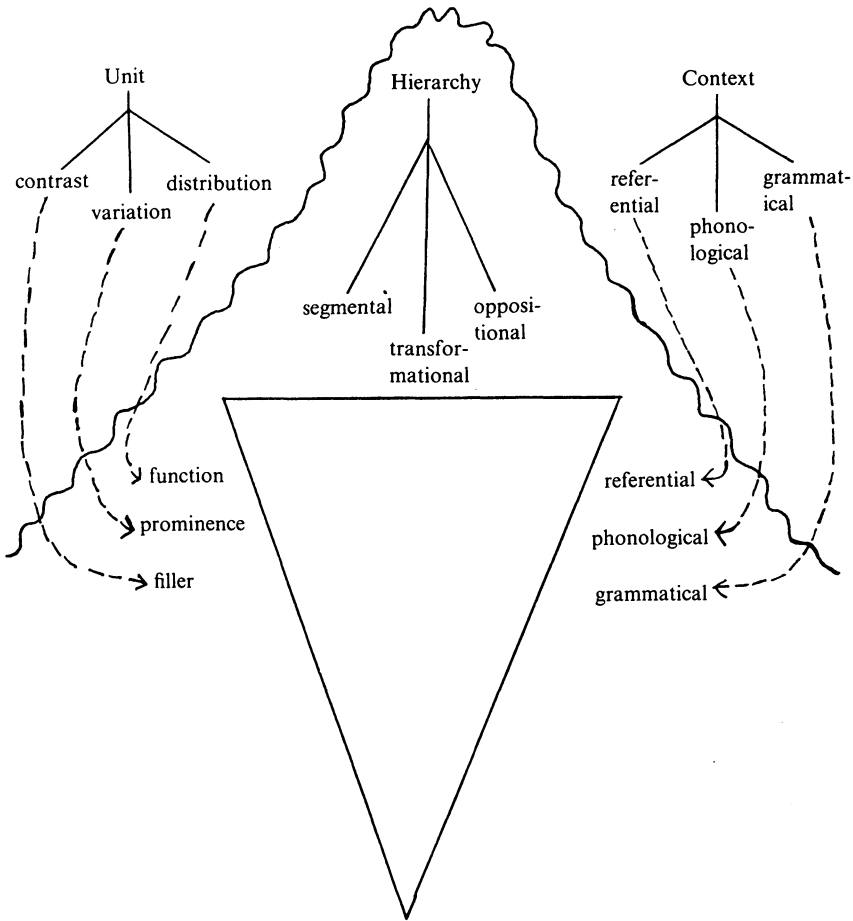


Figure 5. *Aspects of hierarchy*

is used to label limbs on a tree; and 'prominence' material (either *N* for nucleus or *M* for margin) is written under the function. Any node is joined by limbs to constituents that form a part of it. In order to avoid cluttering a diagram, I analyze only three of the 27 boxes in any one diagram. This requires altogether nine diagrams, one for each of the triples 123, 456, 789, 10-11-12, etc. But since some of the diagrams would be highly redundant, I confine myself to presenting diagrams for reference and for two aspects of grammar (segmental and transformational). I shall deal only with the higher levels of structure of Mark 4:30-32. Tracing things down to the morpheme level would be quite possible, but tedious.

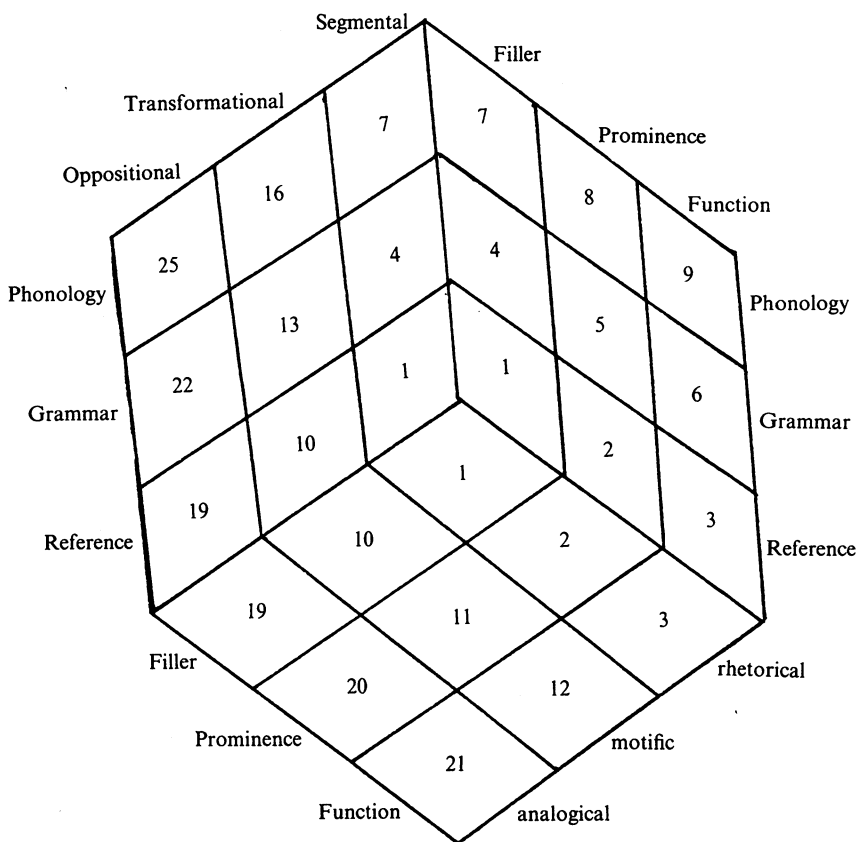


Figure 6. Twenty-seven-box system for hierarchical analysis

I will include some comments on each of the diagrams. The first concern the segmental grammatical analysis of Mark 4:30–32 (Figure 7). Figure 7 analyzes Mark 4:30–32 from the point of view of boxes 4, 5, and 6 of Figure 6. The filler material of box 4 is presented on the nodes of the tree; the function material of box 5 is presented on the branches of the tree; and the prominence material of box 6 is presented just below the function material. The function of a unit is its relation to the unit of next larger size in which it is included. Hence the tree as a whole shows the immediate constituent structure of segmental grammar. (In accordance with standard tagmemic theory, I do not obtain immediate constituents only by *binary* cuts. Immediate constituents are usually units on the next lower level of hierarchy.)





Abbreviations in Figure 7 and other figures are interpreted in the list in Appendix I. In this and the other diagrams, prominence is indicated in double fashion, in terms of nucleus (*N*) versus margin (*M*), and in terms of obligatoriness (+) versus optionality ( $\pm$ ). Obligatoriness versus optionality indicates whether a given unit is required for the integrity of the construction of which it is a part. If it can be omitted without destroying the construction as a whole, it is optional ( $\pm$ ). Nucleus versus margin indicates the importance of the unit in question, as measured primarily by the range of items that can be substituted for it. The greater this range, the greater the importance of the unit. In terms of information theory, the more options are available for substitution, the more information the given unit conveys.

Thus consider the prepositional phrase 'like a grain of mustard seed which, when sown upon the ground, is the smallest of all seeds on earth'. In terms of segmental grammar, this construction consists of two parts, the preposition 'like' and the noun phrase 'a grain of mustard seed which, when sown upon the ground, is the smallest of all seeds on earth'. (I use here the analysis of English noun phrases by Peter Fries [1970].) Both the preposition and the noun phrase are indispensable to the integrity of the prepositional phrase. A prepositional phrase cannot occur without the occurrence of both parts. Hence both are marked as obligatory (+). But the noun phrase is the more important part. The options for selection of noun phrases are very great, since 'noun phrase' is a large open class. On the other hand, the class of prepositions is a small closed class. The number of alternatives to the word 'like' is not very great. Its contribution to the total grammatical package, then, is not so great. Hence the preposition is marked as marginal (*M*) and the noun phrase as nuclear (*N*).

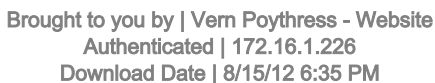
It happens that the same relation between nucleus and margin holds in this case for the referential hierarchy as well. But in general prominence may differ between two hierarchies, and even between the segmental and transformational aspects of a given hierarchy. This is because the constructions into which a given unit enters are different depending on which hierarchy one considers. Hence the *Ns* and *Ms* from Figures 7, 8, 9, 10, and 11 do not always match one another.

Next, consider the transformational grammatical analysis in Figure 8. This Figure shows the same paragraph, Mark 4:30–32, from the standpoint of boxes 13, 14, and 15 of Figure 6. The various clauses of Mark 4:30–32 have been displayed in a form altered by applying grammatical transformations. This I have done to remind us that the type of information included in Figure 8 is to be only that left invariant under these transformations. Thus the rhetorical questions in vs. 30b, c have been transformed into equivalent statements. A certain amount of









grammatical transformation rearranging the order of clauses in vss. 31–32 would also be possible. But such rearrangement would have to leave invariant the actual temporal order as expressed by the tenses of the verbs and the conjunctions. I have indicated this invariance in temporal order by the ‘antecedent–subsequent’ designations.

What happens on the level of the clause? Clauses can be transformed into one another in many ways. But the transitivity of the verb involved (intransitive, semitransitive, transitive, or bitransitive) is left invariant. Moreover, I consider that there is a further invariant, corresponding roughly to the role played in transformational grammar by the kernel sentences of ‘deep’ structure. Some grammatical units are, as it were, ‘intrinsically clause-like’, even though in certain circumstances they may be transformed into noun phrases. For example, ‘the man criticized our neighbor’ or ‘our neighbor was criticized by the man’ are ‘intrinsically clause-like’, though one might argue that they can be transformed into ‘the man’s criticism of our neighbor’. On the other hand, other grammatical units are ‘intrinsically phrase-like’, even though in certain circumstances they may be transformed into equative clauses. For example, ‘the red house’ is intrinsically phrase-like, even though it can be transformed into ‘the house that is red’. I call grammatical items ‘clausals’ (C11) when they are intrinsically clause-like in this sense, ‘phrasals’ when they are intrinsically phrase-like. ‘The house that is red’ as well as ‘the red house’ are phrasals. For further examples, see Poythress (1978). In sum, the terms ‘clausal’ and ‘phrasal’ are meant to designate that aspect of the grammatical structure of certain filler units left invariant under grammatical transformations.

Next, consider segmental referential analysis (rhetorical analysis). Figure 9 exhibits material from boxes 1, 2, and 3 of Figure 6. Material at the nodes of the tree is supposed to be a paraphrase summary of a particular portion of the discourse. Material on the branches of the tree describes the *function* of the material on the nodes.

The functions of propositions and of paragraphs are, I believe, adequately characterized by the ‘propositional relations’ developed by Beekman and Callow (1974:287–326). Hence I have applied their categories virtually unchanged. Only the format in which I display the propositional relations has been changed, in order to bring Figure 9 into line with the analogous tables for other aspects of the hierarchies.

Next, consider transformational referential analysis (topical analysis). Figure 10 exhibits an analysis including boxes 10, 11, and 12 of Figure 6. The material from Mark 4:30–32 has been arranged in strict chronological order. Under the rubric of transformational referential analysis, any order of unfolding the discourse is permissible. Selecting the absolute

chronological order of events is one possible order. If simultaneous sequences of events are developing at two or more places, a single tree may not suffice to accomplish a full display of transformational referential relations. A multidimensional display might be necessary (cf. Grimes 1975:82–91). But in the case of Mark 4:30–32 the narrative is simple enough not to undergo serious distortion when we attempt a chronological arrangement.

I would conjecture that most simple narratives and simple expository discourses will permit displays of motific structure to remain in tree form. The subject-matter of the discourse, i.e., the ‘mundane context’ as defined in Poythress (1982), is unavoidably structured in multidimensional fashion. It is structured in time, in space, in social groupings, in taxonomic classes of more general versus more specific (Pike and Pike 1977:383). Nevertheless, the speaker typically chooses a specific viewpoint in talking about the mundane context. In what he *says* about the mundane context the speaker may choose one of these structurings as primary. In narrative discourse, even with flashbacks and overlays (Grimes 1975: 292–297), the time structure is chosen as primary. Hence a ‘chronological tree’ captures most accurately the way in which the speaker chooses to structure his ‘plot’, the ‘motific’ aspect of his communication. Conversely, in expository discourse a structure of various topics is typically primary. The speaker covers a number of topics that are more or less related to one another, perhaps as general to specific, perhaps as coordinate. Hence a taxonomic analysis of the topics covered may adequately display the speaker’s underlying ‘plot’, the ‘motific’ aspect of his communication. In a descriptive discourse, the spatial structure of the object described may be primary.

Now let me return to Figure 10 to discuss some of its details. The growth of mustard seed mentioned in Mark 4 is something that takes place here and there from time to time. But it is convenient to consider it as a series of steps taking place *prior* to Jesus’s formulation of his parable. For the growth of mustard seed is a well-known phenomenon of the past to which Jesus can appeal as he formulates the parable. Hence the growth of mustard seed becomes chronologically and logically the first incident (vss. 31c, b, 32a, b, d, c, e). The fact that the kingdom of God is behaving so and so is the second element logically prior to Jesus’s parable (31a). Then comes Jesus’s parable (30b, c), and finally Mark’s report of it (30a). I include all these stages because Mark himself brings these stages to our attention in one way or another in the discourse, especially by using the device of quotation.

The paragraph-level functions in Figure 10 should be a generalization of Vladimir Propp’s ‘functions’ (1968), and of Algirdas Greimas’s narra-



tive functions (1966). But this particular story of the mustard seed is so short that the categories of Propp and Greimas are not visible. Moreover, one of the difficulties with Greimas's categories as they stand is that they will not apply well to the combination of narrative and expository discourse that Mark 4:30–32 represents.

Finally, consider oppositional referential analysis (analogical analysis). Figure 11 exhibits an analogical analysis including material from boxes 19, 20, and 21 of Figure 6. The focus of this analysis is naturally on the oppositional relation between the two main planes of the story: the plane on which it talks about mustard seed, and the plane on which it talks about the kingdom of God. Each entry in Figure 11, accordingly, should have at least two components, one referring to mustard seed and the other to the kingdom of God. For the sake of space, I have included only the 'kingdom' side of this opposition, leaving the other side to be inferred. A parable provides, at least on the surface, a rather simple instance of oppositional structure in terms of two levels. In general, referential oppositions will be multidimensional, fluid, and difficult to capture adequately in a tree diagram.

### Application of hierarchical discourse analysis to propositions

The illustrations of the overall structure of Mark 4:30–32 in Figures 7–11 can in principle be extended down to the morpheme level. But at lower levels there tends to be greater redundancy. As an illustration of how I conceive of the structures at a lower level, I offer five displays of the grammatical and referential structure of Mark 4:30b, 'With what can we compare the kingdom of God'. (See Figures 12–16.)

The segmental grammatical analysis of Figure 12 I have obtained by

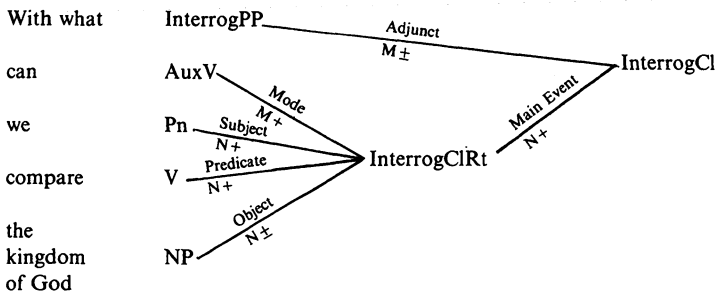


Figure 12. Segmental grammatical analysis of a clause

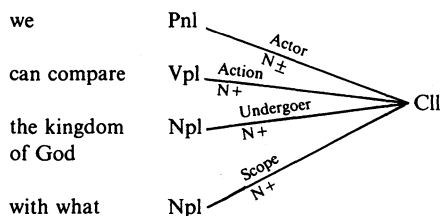


Figure 13. Transformational grammatical analysis of a clause

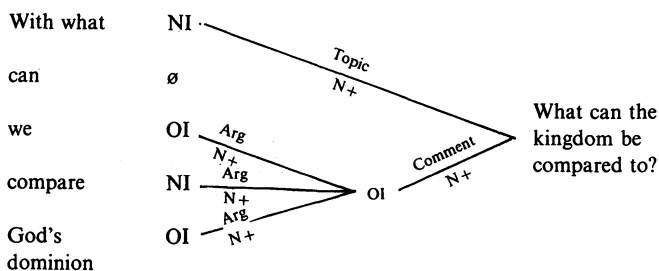


Figure 14. Segmental referential analysis of a clause

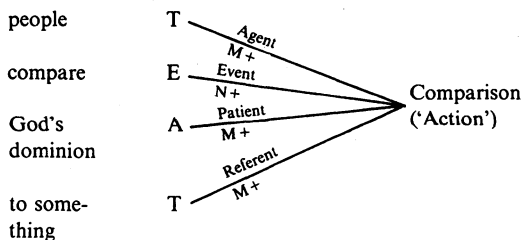


Figure 15. Transformational referential analysis of a clause

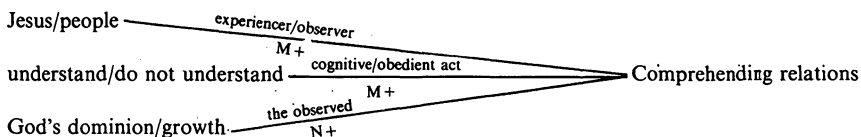


Figure 16. Oppositional referential analysis of a clause

comparing the sample clause (Mark 4:30b) with other clauses of like structure: 'to whom do we give the ball', 'do we know that man', 'can you swim', etc. Without knowing the lexical content of the verb, one cannot know whether a direct object ('the kingdom of God') or an accompanying prepositional phrase ('with what') are obligatory. Hence these are marked optional ( $\pm$ ). In an interrogative clause, the use of a auxiliary verb ('can') preceding the subject is obligatory (thus + attaches to the tree limb connecting to 'can'). But the items substitutable for 'can' form a small closed class. Hence 'can' is marginal (*M*) in contrast to the other items. The other designations of Figure 12 are more or less self-explanatory (for abbreviations, cf. Appendix I).

Next, what about the transformational grammatical analysis of Figure 13? The labels 'actor', 'action', 'undergoer', and 'scope' are used to denote the invariant roles assumed by the items in the transformationally related clauses

we can compare the kingdom of God with what  
 with what can the kingdom of God be compared  
 with what can the kingdom of God be compared by us  
 the kingdom of God can be compared with what  
 the kingdom of God can be compared with what by us  
 the kingdom of God can be compared by us with what  
 etc.

For this particular clause, the grammatical functions 'actor', etc. correspond well to the referential functions 'agent', etc. in transformational referential analysis (Figure 15). But in general there may be skewing because the grammatical transformational relationships may not always reveal the true referential roles. For example, in 'I knew the truth', 'I' is grammatical 'actor' but referential 'experiencer' (not 'agent'). (See Poythress 1978.)

Segmental referential analysis, as in Figure 14, analyzes old information and new information (*OI* and *NI*), plus the topic-comment structure of discourse (Halliday's 'theme' and 'rheme'). Both old-new information and topic-comment structure are matters dependent on word order (segmental), yet more or less independent of the type of grammatical construction (hence referential structure). Thus they are handled in the segmental referential analysis of Figure 14.

Transformational referential analysis is exhibited in Figure 15. I handle Longacre's (1976) and Grimes's (1975) cases here. For these 'deep' cases (agent, patient, experiencer, instrument, benefactee, etc.) can manifest themselves in surface forms not directly related to one another by

grammatical transformations. Cases in this sense are determined by the event in the mundane context, not by grammar. At this level, I regard the verbal action or event as alone nuclear, since it determines what case roles are permitted to occur in its context (in Figure 15, the event of 'comparing' determines the surrounding case roles). The fillers of the case slots are classified according to whether they are things (*T*), events (*E*), abstracts (*A*), or relations (*R*) (cf. Nida 1964:62; Beekman and Callow 1974:68–69).

In Figure 16, for oppositional referential analysis, I have lined up the main explicit and implicit oppositions into which the elements of the text enter.

### Appendix I. Key to abbreviations

A	Abstract (an abstraction rather than a thing or an event)
An	Antecedent (some happening preceding another)
appearc	Appearance
Arg	Argument (one contributor to a larger whole)
Art	Article (Definite or Indefinite Article)
Attrib	Attribute
Aux	Auxiliary
Backgr	Background
Bitr	Bitransitive
BitrCl	Bitransitive Clause
Cex	Contraexpectation (cf. Beekman and Callow 1974: 305–306)
Cl	Clause
Cll	Clausal (a form whose 'deep structure' is a clause)
ClRt	Clause Root (the nuclear material surrounding a verb)
Clust	Cluster
Conj	Conjunction
Coor	Coordination
Cop	Copulative (a linking predicate like 'to be')
Cpt	Complement (to an equative verb)
Cpx	Complex
Declarn	Declaration
Declarv	Declarative
Dep	Dependent
DepCl	Dependent Clause
Developmt	Development
E	Event (as opposed to a thing or abstract entity; cf. Beekman and Callow 1974:68–69)
Eq	Equative
EqClRt	Equative Clause Root

Equiv	Equivalent (cf. Beekman and Callow 1974:297)
Expos	Expository
Frag	Fragment
Gen	Generic (part of the Generic-Specific propositional relation; cf. Beekman and Callow 1974:298)
Hap	Happening (part of the Time propositional relation; namely, what happens during the Time Setting; cf. Beekman and Callow 1974:309)
Indp	Independent
IndpSent	Independent Sentence
Initiatn	Initiation
Interrog	Interrogative
Intr	Intransitive
IntrCl	Intransitive Clause
Invitn	Invitation
M	Margin
Mod	Modifier
Monol	Monologue
N	Noun
N	Nucleus
Nar	Narrative
Nar¶	Narrative Paragraph
NI	New Information
NP	Noun Phrase
Npl	Noun phrasal (a form whose 'deep structure' is a noun phrase)
OI	Old Information
Paragr	Paragraph
PreM	Premargin (i.e., a margin preceding the nucleus)
Pn	Pronoun
Pnl	Pronounal (a form whose 'deep structure' is a pronoun)
Pp	Preposition
PP	Prepositional Phrase
Ppl	Prepositional phrasal (a form whose 'deep structure' is a prepositional phrase)
Pred.	Predicate
Purp	Purpose
Quesn	Question
Quotn	Quotation
Realizn	Realization
Rel	Relative
RelCl	Relative Clause
RelPn	Relative Pronoun
Rhet	Rhetorical
Rsn	Reason (part of the Reason-Result propositional relation; cf. Beekman and Callow 1974:301)
Rt	Root

Sb	Subsequent (some happening following another)
SCpx	Sentence Complex
Sent	Sentence
SentClust	Sentence Cluster (two or more closely related sentences)
Simul	Simultaneous
Sp	Specific (part of the Generic-Specific propositional relation; cf. Beekman and Callow 1974:298)
T	Thing (as opposed to an event or an abstract entity; cf. Beekman and Callow 1974:68–69)
Time	an element giving temporal information
TimeSet	Time Setting (part of the Time Setting–Happening propositional relation; cf. Beekman and Callow 1974:309)
Tr	Transitive
V	Verb
VP	Verb Phrase
Vpl	Verb phrasal (a form whose ‘deep structure’ is a verb phrase)
+	Obligatory
±	Optional
¶	Paragraph

## Notes

1. For a somewhat more precise discussion of my distinction between filler and function, see Poythress (1978). Prominence is left out of this earlier discussion.
2. The grammatical category ‘actor’ should be distinguished from the referential category ‘agent’. In fact ‘the boy’ is not here an agent but an ‘experiencer’ (Longacre 1976:27; I consider Longacre’s ‘deep grammar’ to be part of the referential hierarchy). In terms of what I call ‘grammar’, however, I can classify ‘the boy’ as ‘actor’ on account of the grammatical-transformational relationship between sentences 1, 2, and 3.
3. The word ‘plot’ here and elsewhere designates unfolding of events in their proper chronological order. Thus it corresponds to Doležel’s and others’ term ‘fabula’ (1972:65).

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Vern S. Poythress (b. 1946) is assistant professor of New Testament at Westminster Theological Seminary in Philadelphia, Pennsylvania. His principal research interests are discourse analysis, philosophy of language, hermeneutics, and New Testament studies. He has published *Philosophy, Science and the Sovereignty of God* (1976), in addition to the articles cited above.

