ON SURFACE AND UNDERLYING STRUCTURE IN TAGMEMICS[1]

Peter H. Fries

Central Michigan University

Tagmemicists all agree that one must describe <u>both</u> surface <u>and</u> underlying structures when describing a language. In this respect Longacre (1976: 288) is typical when he says

> "To describe the structure of English clauses, one must not simply describe the surface structure clause types, he must also describe the deep structure case frames, i.e. the verb types which characterize each case frame and the roles which associated nouns play within those case frames. Then one must map the deep structure case frames onto the surface structure clause types."

Though this quotation is typical of tagmemicists in that it recognizes the importance of both the surface and underlying structures for clause level analysis (and by implication for the analysis of other levels as well) it is not typical in the degree of independence allowed the two types of structure. Pike, for example, proposes a four-cell format for representing tagmemes which shows that he expects the surface and underlying structures to coincide rather closely in general. A number of years ago, for example, he proposed the following notation to describe sentences such as <u>The boy ate the bread</u>   (Pike and Pike, 1973).

Subject	NP	+	Predicate	VP	+	DO	NP
actor	animate sg. count		Predication	action		undergoer	inanimate mass sg.

Let me, however, take the Longacre position as a working position to see what benefits may be derived from it. I do this because I feel it is a very useful position, though a somewhat dangerous one. (I will return to the danger later.) I will first discuss surface structure, then underlying structure and finally talk about the mapping from one to the other.

1. Surface Structure.

Tagmemicists have been interested in the description of surface structure since the very beginning of tagmemics, and in the pursuit of this interest they have found it useful to take a hierarchical view of language. In this view each linguistic unit (except the smallest) is composed of grammatical functions which are filled by classes of units. Further, each unit potentially fills some function within a larger construction. From this point of view arise concepts like tagmeme, syntagmeme, system, level, and hierarchy. A tagmemic description of a language would traditionally list the various construction types (syntagmemes) of that language with the intent of showing how each construction type fits into the overall language system. Charts such as Chart I for the English Noun Phrase are typically directly relatable to the usual tagmemic formulae. Each column represents the grammatical function whose name appears at the head of the column. The list of constructions at the bottom of the column gives the list of units which may potentially fill that function. Thus each column together with its list of potential fillers represents a tagmeme of the including syntagmeme.

Two important points are worth making here about this aspect of the tagmemic view of the nature of language.

(i) The tagmeme specifies both the function (subject, object, etc.) and the set of units which may potentially fill that function (noun phrase, pronoun, clause, etc.) independently. This independence allows surface structure within tagmemics to be somewhat more abstract than surface structure within transformational grammar. In transformational grammar, surface structure is what results after all transformations have been applied, thus any difference in order implies a difference in surface structure. Therefore, all the following sentences would be said to have differing surface structures in transformational grammar.

CHART I

Limiter	Determiner 1	Determiner 2	Determiner 3	Looseknit Modifier
only				
	all	the		
		the	several	
		any		
	almost half	John's own	sixty three	
		your		specific
		your		
		their		various
		a		major
		the	three hundred	
		the		
only		the	first three	small
		the		most favorable
	all	the		available
		the		diverse

quantity phrase	Indefinite article	a. cardinal numeral phrase	a. Adjective phrases
	Definite phrase	b. quantifier phrase (count)	b. Nominal Adjectives$_2$
	Possessor phrase	c. quantifier phrases (mass)	c. -ing phrases
		d. number words	d. -en phrases
		e. numeral comparison phrases	e. material noun phrases
			f. Manner Adj. phrase
			g. Adverbial Adj.
			h. Adjective

Closeknit Modifier	Head	Restrictive Modifier	Non Restrictive Modifier
	men		
	men	who came	
	people	whom we saw	
communications	satellite	circling around the earth	
	trucks		
new plant	needs		
road tax	dollars		which will buy
	colors		more if you elect
long range missile development	program	that they are implementing now	me
	chickens		
motor driven steamship	era	just ushered in	
low impedance	resistors	in the network	
	price	obtainable	
	evidence		
consumer product	line		

a. Restricted Noun Phrases	a. common noun	a. Adjective Phrase	a. Adjective Phrase
b. -ing words	b. Restricted Noun Phrase	b. Locational Phrase	b. en-phrase active
	c. complex noun expression (that)	c. non locational Prepositional Phrase	c. en-phrase passive
	d. complex noun expression (to)	d. Definite Possessive Phrase	d. ing-phrase
	e. complex noun expression (of)	e. ing-phrase	e. Locational Phrase
	f. semipartitive expression (1)	f. en-phrase (passive)	f. non locational prepositional phrase
	g. close appositive phrase	g. en-phrase (active)	g. relative clause
	h. title phrase	h. active infinitive phrase	h. extended nom phrase
		i. passive infinitive Phrase	
		j. relative clause	

a. <u>John saw the movie yesterday</u>.
b. <u>Yesterday John saw the movie</u>.
c. <u>The movie John saw yesterday</u>.

Tagmemicists, on the other hand, would say that those three sentences all have the same clause structure (Subject: NP Pred: VP D.Obj: NP Adverbial: Time noun). Similarly the phrase and word structures are all identical in the three sentences. The differences in the ordering of the three sentences would be related to differences in their functions in a larger discourse. (That is, in tagmemic theory one can say that these sentences have both differing and the same surface structures, depending on what level one is focusing on at the moment.)

(ii) The second point is a far more serious one and is well worth exploring in greater detail. Surface structure contributes meaning. This is no longer as controversial a statement as it was. Nowadays even transformational grammarians have discovered that surface structure is important. It is, however, a significant statement when one considers the nature of tagmemics. Let me illustrate my point with some examples from the English Noun Phrase. Chart I contains a number of columns. One of them represents a grammatical function called Loose-Knit Modifier while a second represents the Close-Knit Modifier function. These two functions differ in their meanings in that the Loose-Knit Modifier expresses incidental attributes of the head noun, while the Close-Knit Modifier expresses essential ones. Thus in the phrase <u>a nervous system</u> the word <u>nervous</u> indicates the type of system that is mentioned. This correlates with the fact that it fills the Close-Knit Modifier function. In the phrase <u>the nervous boy</u>, however, <u>nervous</u> indicates a non-essential attribute of <u>boy</u>. This correlates with the fact that it fills the Loose-Knit Modifier function in this construction.

Similarly, on Chart I there is a function labelled Restrictive Modifier which is said to be different from the Loose-Knit Modifier

function. If it is to be truly different it should be possible to support this claim with a statement of the difference in meaning conveyed by the two functions. (This is particularly true since the two functions have a great deal of overlap in their filler classes.) In fact, Bolinger in a very good article demonstrates a difference in meaning between prenominal modifiers (Loose-Knit and Close-Knit) and postnominal modifiers (Restrictive Modifiers) (Bolinger, 1967). Since many of the examples cited are of Loose-Knit Modifiers as opposed to Restrictive Modifiers, it is possible to take over his analysis and apply it to the distinction under discussion here.

The analysis runs as follows: the Loose-Knit Modifier conveys the meaning of 'characterization', while the Restrictive Modifier conveys the meaning of 'temporary attribute'. This can be demonstrated by examining semantic restrictions on the elements which may occur within each function. First, note that modifiers which have the form of clauses (relative clauses) only occur in the Restrictive Modifier function. Now one might object that this is a grammatical restriction and would be correct in saying so. It is significant, however, that relative clauses are limited to filling Restrictive Modifiers, not Loose-Knit Modifiers.

A second bit of evidence comes from adjectives which indicate temporary states, such as handy, ready, and dizzy. The sentences

> The hammer was handy
> The man was ready
> My friend was dizzy

do not imply a permanence to the handiness, readiness, or dizziness. That is, a hammer which is handy when I am in one place is no longer so handy if I walk a mile away. Similarly the fact that my friend is dizzy now is no indication that he is always or typically dizzy. Now if we put these adjectives into the Restrictive Modifier, that temporariness is maintained:

> The only hammer handy was John's
> The only man ready was Bill
> The only person dizzy was Bill

while if we place the same adjectives into the Loose-Knit Modifier rather strange constructions result:

> ? The only handy hammer was John's
> ? The only ready man was Bill
> ? The only dizzy person was Bill

It is not that handy, ready, and dizzy cannot occur in the Loose-Knit Modifier but rather that they feel uncomfortable there as long as they retain their temporary meanings. Note that sentences such as:

> This 6-in-one screwdriver is a really handy tool
> John gave a ready answer
> My dizzy friend called me again today

are perfectly normal. But now handy, ready and dizzy no longer indicate temporary attributes but relatively permanent ones.

Now if the various tagmemes of a syntagmeme contribute meaning, then it should follow that the syntagmeme itself conveys meaning, at least the sum of the meanings of its component tagmemes. Similarly, if a level of grammar consists of a system of similar syntagmemes then it should be possible to characterize the meanings conveyed by the level as a whole, i.e., the meanings which the various syntagmemes on that level have in common. And finally, it should be possible to show how the meanings of the syntagmemes on one level (say the phrase level) differ from those of all other levels (word, clause, sentence, etc.). If it is impossible to make such statements about the meaning contributions of the various syntagmemes and levels then that would throw doubt on the validity of this portion of the theory. Thus a consideration and further specification of the meaning contribution of surface structure is essential to the development of tagmemic theory.

56

One way of beginning the study of problems such as these would be to ask whether, in any language, it is possible to begin the body of a conversation (excluding greetings) with a Noun Phrase, or with a single word. If we come to the conclusion that this is not possible, that conversations only begin with clauses or larger units, then we ought to ask why. This is in fact what Pike is trying to do when he proposes his paired hierarchy:

Chart II

Chart of paired hierarchy (from Pike 1976: 103)

Communication Load (The meaning of the paired level)	Minimum Unit	Unit potentially expanded from the minimum
Social Interaction	Exchange	Conversation
Theme Development	Paragraph	Discourse
Proposition	Clause	Sentence
Term	Word	Phrase
Lexical Package	Morpheme	Morpheme cluster sometimes stem

As Pike (1976: 103) says:

"...we are attempting to set up a paired level of the hierarchy itself as a form-meaning composite, but with such a paired level having simple forms and expanded forms (i.e. a pair of related levels), plus a shared semantic component."

The shared semantic components he uses are meanings which are relevant to the communication situation. As I have attempted to show, some development such as this (not necessarily this particular one) is only a logical consequence of the statement that surface structure contributes meanings.

While Longacre subscribes to the notion that surface structure contributes meaning, he objects to the notion of paired hierarchy (Longacre 1976: 284-285). His objections run along the following lines:

57

(i) "One of the most significant thresholds in the whole hierarchical line up is that between clause and sentence. The clause level exists primarily to encode elements of the predicate calculus while the sentence level exists to encode elements of the propositional (or statement) calculus." (p.284)

(ii) It threatens hierarchical organization implying that "after all, words compose clauses and phrases are merely groupings of words." (p.285)

(iii) It does not account for languages in which stem and word, or phrase and clause, or sentence and paragraph seem to be combined into some intermediate unit.

(iv) He sees no essential difference in the relation between clause and sentence as against sentence and paragraph.

The first objection seems to me to assume part of what must be proven. Many linguists, ranging from traditional grammarians to transformationalists and even some tagmemicists, seem to have been satisfied with a single term for what Longacre distinguishes as clause and sentence. Such linguists clearly would not believe that this distinction is a major one within the grammar of a language. Even some linguists who consistently distinguish clause and sentence levels (Pike, for example) seem to imply that clauses and sentences have more in common than do clauses and phrases, for example. (It is instructive to contrast the number of linguists who use the same terms to indicate clause and sentence with the fact that it is difficult to find any linguists who use the same term to indicate both phrase and clause.) Since the distinction between clause and sentence has such a controversial history, it would seem to be necessary for Longacre first to establish that this distinction is as basic as or more basic than others which the paired hierarchy separates. Only then can he use this reasoning persuasively.

Longacre's second objection is theoretically invalid. There is no necessary reason why such a paired hierarchy must inevitably threaten the existence of the manifestation relations which hold in the old linear hierarchy. This analysis may admittedly encourage

some linguists to take the step that Longacre fears. Thus in a discussion of the advantages of the paired hierarchy Paul Tench (1967: 7) says:

> "Double ranks eliminate a lot of what Longacre calls 'level skipping' ... and what Huddleston calls 'singulary branching' ..."

Tench can say this only if he allows the minimum units which convey a particular meaning (say, words) to play a direct role in units which convey the 'next larger' meaning (clauses, for example). Thus he seems to propose that in the clause <u>John came home</u> one might say that the word <u>John</u> fills the subject function and <u>came</u> fills the predicate without relating those words to phrase level constructions.

However, though this approach is a possible result of the paired hierarchy, it is not a necessary result. Just as it is quite possible to say that two words (say <u>kill</u> and <u>die</u>) are similar in meaning without committing ourselves to saying that they are the same word or that they function in the same way, so it is possible to say that two construction types are similar in meaning without necessarily implying either that they are identical, or that they have identical functions.

The two remaining objections are more interesting. The objection that the dual hierarchy does not account for languages in which stem and word, phrase and clause or sentence and paragraph are combined can only be answered by examining languages which combine these levels and looking not merely for what levels get combined, but also at how the relevant meanings are expressed in these languages.

Finally there are two ways to interpret Longacre's last objection, i.e. the objection that he sees no major break between sentence and paragraph. On the one hand we may interpret it as referring to the internal structure of the various constructions concerned. But that is, of course, to miss the point. Linguists have never grouped syntagmemes on one level or on another primarily on the basis of their internal structure. Prepositional phrases are called phrases in spite of their exocentric construction. In fact

they look like no other phrases. We call them phrases because of their grammatical function in larger units (and I would add because of their surface structure meaning.) Similarly phrases which contain conjunctions often have a constituent structure which resembles that of sentences. They may even contain exactly the same conjunctions which express the same relation (compare in either the box or the bag with On Wednesday either John came or Bill did.) In spite of these similarities no one seriously proposes that both of these examples are sentences or both phrases.

A more reasonable interpretation of Longacre's objection would be that he sees no significant difference in the relationship between the meanings of clause, sentence, and paragraph. Here it is possible to find some intuitive support. Francis Christensen (1967), a noted teacher of composition, has said that a paragraph is merely a sentence which has been expanded. He makes no similar statement for clauses being expanded to sentences. Clearly if we are to accept or reject proposals such as the paired hierarchy on the basis of something other than mere prejudice or fashion we must investigate feelings such as these to discover their basis.

Now hypotheses such as the paired hierarchy proposed by Pike are very important, for they have the potential of explaining and motivating the relations between the various levels within the grammatical hierarchy. Longacre (1976) believes in a linear hierarchy of descending exponence, in which paragraphs typically realize tagmemes of discourse structures, sentences typically realize tagmemes of paragraphs, etc. He, of course, realizes that such a hierarchy is too simple and allows for exceptions to the normal realization. Thus, through level skipping, words may fill clause or sentence level tagmemes, while through recursion, phrases may fill phrase level tagmemes and so on. While this model describes the data accurately, it does not provide us with an explanation. Why should clauses typically fill sentence level tagmemes, yet when two clauses are linked, this linkage is typically achieved via

single words, not clauses or phrases? Why are relative clauses so frequently constituents of noun phrases? A serious exploration of the meaning contribution of the surface structure will lead us toward the answers to these questions. Pike's notion of a dual hierarchy[2] is a first attempt at such an answer which may or may not stand the test of time.

2. Underlying Structure.

Let me now turn to the underlying structure. Here we are dealing with the notional categories conveyed by language. Tagmemicists have adopted the Fillmorean concepts of case roles and extended them to apply, in theory at least, to all levels of the grammar. Longacre proposes underlying calculi for predications (case relations), propositions (combinations of predications) and repartee and increment. To these one might add at least a calculus for relations which typically exist within phrases and which are not described by any other calculus. In each case an attempt is made to describe meanings which often are expressed in language but to describe them independently of the way these ideas are expressed in any particular language. Thus tagmemicists are attempting to make for these notional categories an inventory somewhat analogous to the inventory of sounds on a phonetics chart. This can be seen in Longacre's (1976: 5) comment:

"If this book were all that the author wished it to be
we could put it into the hands of a linguistic
investigator ready to initiate the study of a
previously unstudied language and tell him 'This is
what all languages everywhere say, now go and find
out how they say it in language Q'."

In order to make such an attempt note that it is necessary to assume that the underlying relations are describable apart from their realizations. But without the guidance of surface structure it is difficult to know what is or is not a significant difference in underlying structure. Here is the danger inherent within Longacre's approach which I mentioned at the beginning of the paper. If one can avoid the trap (and I believe it is possible) of becoming too

61

abstract, too divorced from surface realization, I believe this approach will be very useful.

The trap I fear is easily illustrated. Among the various proposals for case systems one finds systems with as few as three cases (Hale, 1973) and as many as ten or more, depending on how one counts (Platt, 1971; Cook, 1971). As long as one deals solely with underlying relations, there is no way to choose between these alternative proposals. It is only when we confront these systems with data from a real language and attempt to explain the similarities and differences in meanings of the verbs and the clauses within which they occur that we can begin to evaluate these systems. If one of the systems does not adequately describe the contrasts expressed in a language, then that system is not adequate and must be changed to some degree.

Thus, it should be possible to avoid the trap of being too abstract by consistently watching the interplay of form and meaning and tying our attempts at universal systems to descriptions of the corresponding systems of particular languages.

Let me illustrate what I propose with a quick discussion of the lexemic structures which underlie the English Noun Phrase. No attempt is made here to be complete (even for English), but this discussion may be interpreted as setting minimum requirements for structures which may underlie Noun Phrases.

Many lexemic structures involved in the English Noun Phrase are also involved in the description of English clauses. Thus relations such as Source, Goal, Time, and Location will be useful in describing the meanings of phrases such as:

Source	John's letter	(John wrote a letter to Bill.)
Goal	Bill's letter	(John wrote a letter to Bill.)
Time	the 1959 crisis	
Location	London taxis	

Similarly concepts such as 'purpose' may be drawn from the propositional calculus to account for the meaning of <u>jamming transmitters</u> and <u>a conditioning shampoo</u>.

A number of problems remain, however, in the description of these and other phrases. First, some relations exist within Noun Phrases which do not occur within either predicate calculus or any other calculus. Thus, to account for Noun Phrases such as <u>a table leg</u> and <u>the car fender</u> we need to talk about a 'whole-part' relation. (To these phrases might be added ones such as <u>a text fragment</u>, <u>a carrot cube</u>, and <u>a consumer product line</u> which have the closely related meaning of 'substance-portion'.) A second relation which may need to be posited for phrases may be intensification. Examples from the English Noun Phrase range from clear examples such as <u>an utter fool</u> and <u>a perfect idiot</u>, <u>a virtual genius</u> through <u>their extreme ruggedness</u> and <u>the near simultaneity</u> to arguable cases such as <u>their prime reason</u> and <u>the main office</u>. Finally, a third relation which may be found typically within Noun Phrases is the naming relation, e.g. <u>an Alechine move</u>, <u>the Cauchy Theorem</u>, <u>the Marshall Plan</u> and <u>the Kennedy Expressway</u>. This list could easily be extended. It has not treated quantifiers or determiners, for example, both of which require special treatment.

But merely adding different lexemic roles will not adequately describe the meaning relationships which hold within the Noun Phrase. One must also assign a kind of immediate constituent structure to the various lexemic components. It is true that one can explain the meaning of <u>that old picture on the wall by the door</u> as the result of adding together the meanings of the various attributes (excluding the meaning of <u>that</u>). The result would be to say that the Noun Phrase has a referent X such that X is a picture, is old, is on the wall, and is by the door. We can put this description slightly more formally as

$$\begin{bmatrix} X \\ \text{picture} \\ \text{old} \\ \text{on the wall} \\ \text{by the door} \end{bmatrix}$$

If, however, we attempt to use this method of analyzing the meaning of the last Noun Phrase of <u>John read few books that were interesting</u> in the same way we come up with

John read $\begin{bmatrix} X \\ > 1 \\ \text{few} \\ \text{books} \\ X \text{ be interesting} \end{bmatrix}$

But this analysis implies that John read few books. That is clearly not what the sentence means. Instead it should be paraphrased roughly as 'of the books which John read (however many that was), few were interesting'. Or, if we wish to phrase the interpretation of the clause more accurately, 'John read few X such that X were books and interesting'. Thus the quantifier relates to the referent of the Noun Phrase in a way that is quite different from the way modifiers relate to that referent. The difference in relationship may be represented in the following way.

$$\begin{bmatrix} \text{few} & X \text{ such that} \\ & \begin{bmatrix} X \\ >1 \\ \text{book} \\ X \text{ be interesting} \end{bmatrix} \end{bmatrix}$$

Structuring similar to that illustrated here is not limited to the interpretation of Noun Phrases containing quantifiers. One can find similar structuring in the relations of various modifiers within the Noun Phrase. In the examples we have used so far all the modifiers (<u>old</u>, <u>on the wall</u>, <u>by the door</u>, <u>that were interesting</u>) have

64

related directly to the referent of the total Noun Phrase. Thus in
that old picture on the wall by the door we can say that the referent
of the Noun Phrase is old, is on the wall, and is by the door.
Following Bolinger (1967) we can call this relation 'referent
modification'.

     The second type of relation Bolinger (ibid.) calls 'reference
modification'. Here the modifier does not modify the referent of
the Noun Phrase, but instead affects the reference of the Noun
Phrase. The clearest examples of this relation are those which
involve a modality on the application of the Head Noun to the
referent in question. E.g.,

<div align="center">

a true thermoplastic

an accused murderer

a putative example

</div>

In each case true, accused, and putative offer a comment on the
applicability of the Head Noun to the referent. In none of the
three cases would it be accurate to say that the referent of the
Noun Phrase is true, accused or putative. Thus we can only apply
these words to the referent via the Head Noun roughly as follows:

true (thermoplastic)   accused (murderer)   putative (example)

But reference modification is far more frequent than the last
examples imply. An old friend may be someone who is a friend and is
old (referent modification), or he may be someone who has been a
friend for a long time (reference modification). A criminal lawyer
may be a lawyer who is also a criminal (referent modification) or he
may be someone who deals in criminal law (reference modification).
Further, one can easily find examples of nesting of reference
modification. Winter recreational facilities are not things which
are facilities and are recreational and are winter, but rather
facilities for recreation in winter. That is to say, winter
modifies the reference of recreation, and winter recreational
modifies the reference of facilities.

Once we allow immediate constituent structure into the underlying structure we must determine what elements are immediate constituents of what. This is not always easy. For example, a newscaster once reported that a man suffered <u>an apparent fatal heart attack</u> and died. Now <u>apparent</u> is one of the modalities discussed earlier but here the question arises to what does it apply? Clearly it cannot apply to <u>fatal</u> since the man was obviously dead. We are left then with <u>heart attack</u> and the following analysis:

$$
\begin{bmatrix}
& X \\
\text{apparent} & \text{(heart attack)} \\
& \text{fatal}
\end{bmatrix}
$$
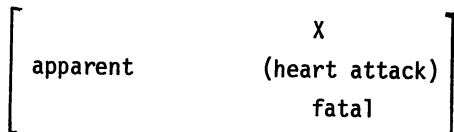
A slightly more complex example is <u>a virtual three-way tie</u>. This Noun Phrase must be interpreted as 'virtually a tie which involves three teams' not 'a tie which involves virtually three teams'. As a result <u>virtual</u> must attach to <u>tie</u>, as in:

$$
\begin{bmatrix}
X \\
\text{virtual (tie)} \\
\text{three way}
\end{bmatrix}
$$
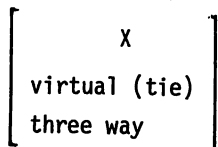
Now that leaves us with <u>three-way</u> attaching directly to the referent X with the implication that the referent is three way. In fact it seems more logical to treat <u>three-way</u> as another instance of reference modification, thus giving:

$$
\begin{bmatrix}
& X \\
\text{virtual} & \text{(tie)} \\
\text{three way} & \text{(tie)}
\end{bmatrix}
$$
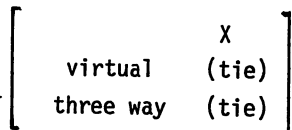
with the result that <u>tie</u> has multiple lexemic functions in this phrase.

As a final example of the lexemic structure underlying English Noun Phrases let me cite the need to allow implicit time limitations on the applicability of a term to a referent. We have already seen the need for allowing explicit time modifiers within a Noun Phrase

to account for phrases such as the 1959 crisis, my old friend, his former wife. In addition to these we must allow for implicit limitations. If someone says Joan is looking for a husband, that does not imply that Joan is looking for someone who is, at the time she is looking, a husband. That sentence rather says that she is looking for someone who will become a husband to her.[3] (In contrast, if one says Joan is looking for her husband that implies she already has one.) In a sense the peculiarity of this example derives from the general phenomenon that people tend to perceive the world as if it were what they wish it to be. (Can we call it 'counting your chickens before they are hatched'?) It is easy to find examples of this sort. My wife, for example, often asks me to put on the hot water for coffee in the morning. Of course if it were really hot water there would be no reason to put it on. Occasionally speakers get trapped by their language and produce Noun Phrases which are technically inconsistent. If we interpret it literally, in The king took as hostage an infant whom twenty years later he married, the third Noun Phrase implies that the king married a twenty year old infant. Clearly that is not what is meant, however. The problem arises because one can be an infant for a limited amount of time. Thus, by the time twenty years elapsed the individual who was taken hostage was no longer an infant.

3. Mapping between Surface and Underlying Structures.

Finally, I would like to discuss the relation between surface and underlying structure. Both Pike and Longacre like to think of a 'normal' relation between surface and underlying structure, and both allow for a certain amount of slippage between the two. Longacre's way of talking about the relation as one of mapping seems to allow for a greater degree of slippage - or perhaps it would be better to say that slippage is regarded as more usual in his approach. I believe this is an advantage since I believe slippage between the two is quite frequent. Let me cite a few examples which may be profitably treated as instances of slippage and interaction between the surface and underlying structure.

67

(i)   Quirk and Greenbaum (1973: 167) set up a class of clauses they analyze as SPOA (i.e. Subject Predicate Object Adverbial), such as

An intruder must have placed the ladder there.

I put the plate on the table.

The sole reason they do this is that the A(dverbial) constituent is obligatory. If it is omitted, the result is:

* An intruder must have placed the ladder.

* I put the plate.

Intuitively, the adverbial constituent of each of these clauses seems to be of a different nature than the other obligatory constituents. Further, we can find other similar clauses in which the adverbials seem to be performing the same function as in the above examples, yet are not obligatory.

John hit the ball (over the fence).

John helped the old lady (across the street).

Either one must say that these last two examples have a totally different structure from the two examples cited by Quirk and Greenbaum, or one must say that the fact that the adverbials in the first two examples are obligatory is irrelevant to the structure of those examples.

With the distinction between underlying and superficial structure we can take the latter approach, for in that case there are two possible sources for obligatory constituents. In the surface structure we have grammatical concepts such as subject, predicate, object, complement, and adverbials. In English, subjects, objects, predicates and complements are nuclear and obligatory while adverbials are not. (I.e. no constituent must occur by virtue of its status as adverbial.)

The underlying structure also contributes its constraints on what must or may occur, however. Thus verbs such as put, keep, and last may contain location or time duration as nuclear and obligatory

parts of their meanings. Since location and time tend to be realized as adverbials in the surface structure, we should expect to find adverbials which are obligatory in clauses which contain these verbs.

(ii) A second example of the slippage between surface and underlying structure follows a similar train of thought. There exists in the English grammatical tradition a well established classification of English clauses into intransitive, transitive, ditransitive, etc. The attempt has also been made to classify verbs as to whether they may be the main verb of these clause types. This attempt has had limited success, however, since few verbs occur in only one type of clause. E.g.,

<div align="center">

John read
John read a book
John read me a book
John walked
John walked the dog

</div>

Instead of attempting to classify verbs on the basis of their occurrence in surface structure clause types, we can follow the lead of case grammarians and classify them in terms of their underlying lexemic structures (their case frames). We would have for example one participant verbs (walk, run), two participant verbs (read, hit), three participant verbs (give, steal) etc. The result of taking this approach is not only a more satisfactory analysis of the verbs, but also a better explanation of the meanings of the verbs in context. This last is achieved by looking at the interaction between the lexemic structures of the verbs (their case frames) with the surface structure of the clauses that contain them. For example, the normal relationship between the lexemic structure of a verb and the surface structure of the clause which contains it would be to have one participant verbs in intransitive clauses (John walked), two participant verbs in transitive clauses (Bill hit the ball) and three participant verbs in ditransitive clauses (John gave Bill a book). In English, however, there are many exceptions to this normal relationship. One participant verbs often occur in transitive

clauses, for example. When this happens, however, a new participant role is usually added, that of cause.[4] Thus the clause <u>John walked the dog</u> implies that the dog walked and John was the cause of the action. Similarly, two participant verbs often occur in intransitive clauses, e.g. <u>John ate.</u> In these cases a second participant is implied but not stated. <u>John ate</u> implies John ate something.[5]

(iii) A third example of the slippage between surface and underlying structure is what I call misplaced constituents. That is, constituents which relate to one element grammatically while they relate to an entirely different constituent semantically. For example, in the clause <u>Only an occasional sailor walked by</u> the word <u>occasional</u> modifies <u>sailor</u> grammatically, but it would be wrong to interpret the clause as referring unambiguously to some one who sails occasionally. That is one possible interpretation of the clause, but another more likely interpretation is that <u>occasional</u> actually modifies <u>walked by,</u> with the result that the clause can be roughly paraphrased as <u>a sailor walked by occasionally.</u> This paraphrase differs from the original, however, in that it allows the interpretation that the same sailor walked by on different occasions, while the original version does not allow this interpretation. That is, placing the adverbial meaning within the Noun Phrase seems to affect the possible interpretation of the Noun Phrase. Again the interplay of surface and underlying structures affects the meaning of the resulting structures.

One could continue endlessly cataloguing examples of the slippage between surface and underlying structures and the effects this slippage has on meaning, but such a catalogue would not be very useful. We need a hypothesis about why such slippage occurs to serve as a framework within which to place such a catalogue of examples. The best starting point from which to build such a hypothesis is the contributions to meaning made by the surface and underlying structures of language, for through examining the interplay of surface and underlying structures and the effect this interplay has on the overall meaning of a passage, we will be able to account for

why such slippages occur. We use the words and structures we do because they mean what we wish to say. Even should our hypotheses be wrong, they will be useful, for they will help us sharpen our knowledge about surface structure, about underlying structure, about the relation between the two, and about the nature of language in general.

N O T E S

1. This paper constitutes a partial reworking of Fries (1976).

2. Interestingly enough, at the same time that Pike is attempting to provide an answer to questions such as this, he seems to be drawing back from providing the mechanism to use his answer. I refer to his growing tendency to use terms such as <u>nucleus</u> and <u>margin</u> as names for surface structure tagmemes. If <u>stems</u>, words, phrases, clauses, and sentences are all said to have a nucleus tagmeme and a number of margin tagmemes (as the Pikes are now tending to do) then the implication is that the surface structure relations between the various parts of these structures are identical. If this is true, then one can only infer that the meaning contributions of the various relations are identical. That leads to the conclusion that the surface structure meanings of all these levels are identical. I believe that if we are to speak of the contribution to meaning by the surface structure, we must maintain sufficient distinctness in the terms we use on each level to serve as a description for the relevant meaning contribution. I should hasten to say that I do not object to the notions of <u>nucleus</u> (as central to an element) and <u>margin</u> (not central to an element). These are very useful terms <u>so long as they are not used as names for tagmemes.</u>

3. One could possibly treat <u>look for</u> in this construction as a kind of effective verb like <u>dig</u> and <u>bake</u> in

<div align="center">
<u>I dig a hole</u>
<u>I bake a cake</u>
</div>

in which the hole and cake come into existence as a direct result of the digging and baking. But to say that the husband comes into existence as a result of the looking seems a rather perverse way of describing the meaning of that sentence.

4. Another sort of possibility is that the second participant is interpreted as a marginal role associated with the verb, say 'Location' in the case of <u>walk,</u> so that in <u>He walked the</u>

boundaries, the boundaries is interpreted as location. The surface structure function of the boundaries in this sentence is so far from that of direct object, however, (e.g. it cannot be made the subject of a passive sentence, nor does it answer the question what) that it cannot be considered an example of my point here, i.e. what happens when one puts a one participant verb into a transitive clause.

5. While the details of this proposal remain to be worked out, many of its essential elements have been sketched in by M.A.K. Halliday (1967), and Fillmore (1968 and 1969).

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