TAGMEMIC DEEP STRUCTURE AND PHILIPPINE LANGUAGES

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The problem to which this paper is addressed concerns the incorporation of 'deep' structure statements into a tagmemic description of a Philippine language.[1] Ballard, et al. (1971), illustrates a tagmemic description of complex sentences. The discussion which follows is concerned with the deep structure of phrases and clauses.

Deep structure, as used here, refers to the underlying general patterns of functions, both grammatical and semantic, which show the relationships between contrastive surface constructions. These patterns are the inductive results of a comparative analysis of phrase and clause constructions, and show the general features held in common by more than one contrastive surface structure. In this way, the underlying, interrelated, cohesiveness of a language system is given equal emphasis with its contrastive surface constructions. The two types of information are connected by deriving the surface constructions from the underlying general patterns.

Although Longacre, a leading tagmemic theoretician, considers deep structure to be totally grammatical, the underlying patterns are considered here to have both semantic and grammatical features, so that the difference between underlying and surface structure is not seen to be a difference between semantic deep structure and grammatical surface structure, as Fillmore views it, nor as between two levels of a grammatical structure, as Longacre chooses, but rather a difference between underlying general patterns of structure and specific surface structure.

The view taken here, therefore, accepts Fillmore's argument for considering the case functions, such as agent and goal, as semantic elements of the 'deep', or underlying, structure, but also recognizes that the correlation of the grammatical functions, such as object, with those semantic functions must also be marked in the deep structure for some Philippine languages. The subjectivalization derivation which transforms the deep structure to surface constructions then alters the grammatical function correlations.

In its original form, tagmemic theory was oriented towards describing the functions and formal constituents of contrastive surface structures. Although the theory did not include deep structure, Pike has recognized that surface grammatical functions, such as subject, could be ambiguous if their 'structural meanings', (case functions), were not noted. He identifies as different subject tagmemes, for example, 'actor-as-subject-of-the-sentence' and 'recipient—of-the-action-as-subject-of-the-sentence' (1954), now 1967).

In the description of a portion of Bilaan grammar (Pike, 1963) he suggests indicating this subcategorization by attaching subscripts to the function symbol of a tagmeme. The formula $S_{ac}:NP$, for example, indicates that there is a subject-as-actor tagmeme which is manifested by a noun phrase. Reid utilized this type of symbolization extensively in his description of Ivatan syntax.

In a later article on discourse analysis, Pike labels the distinction between grammatical functions and their structural meanings as a difference between grammatical role and situational role (1964). That he does not regard the latter as underlying structure is evidenced by the fact that he continues to regard the distinction as a feature of the grammatical hierarchy (1964.15), and ties both types of role information directly to surface elements by attaching subscripts onto his tagmeme symbolization.

Becker (1967) seems to be dissatisfied with the overall formalization of the tagmeme and its emphasis on surface structure. His revision of the tagmeme concept, seen in the matrix of Chart 1 (1967.116), expands the tagmeme into a four-part unit in place of the original two-part unit.

The upper half of Becker's new tagmeme, represented by the top row of the chart, restates the conventional tagmemic symbolization of form and function as the surface structure form only. The bottom half, represented by the bottom row of the chart, is a set of deep structure meanings, a situational role in B cell, and a set of lexical features in D cell. Both the grammatical and lexical aspects of a tagmeme now have both surface and deep structure. Thus, for example, underlying the surface structure of the grammatical subject (A in Chart 1) is the deep structure grammatical meaning, agent (B in Chart 1).

CHART 1

BECKER'S FOUR-PART TAGMEME

	Grammar	Lexicon
Form (Surface Structure)	A (e.g. Subject)	C (e.g. Noun Phrase)
Meaning (Deep Structure)	B (e.g. agent)	D (e.g. male, single, human, etc.)

Some tagmemicists have accepted Becker's concept of the grammatical deep structure into tagmemic theory but have rejected his lexical deep structure. Longacre, for example, incorporates the former into his studies of Philippine languages (1968.I.vi), and continues to hold that view (Ballard, et. al. 1971). Pike, however, rejects the whole concept in favor of the revised tagmeme suggested by Wise.

Taking advantage of Becker's theoretical work, Wise has suggested permuting the parameters of Becker's tagmeme matrix to give a different representation as seen in Chart 2. By combining Becker's 'meaning' and 'lexicon' parameters into a single lexemic parameter, and then relabeling the column parameters as 'function' and 'manifestation' (1968.40), she splits Becker's diagram into a grammatical surface structure and a lexical (or semantic) deep structure.

Note that although the cells of Wise' chart have the same sample fillers, the cells represent the intersections of different parameters. Cell A in Becker's chart symbolizes the grammatical form. In Wise's, the grammatical form, or manifestation, is symbolized by cell C. But Wise has not simply adjusted the parameters of Becker's matrix. She has made a basic change in the orientation of Becker's scheme by reinterpreting his deep

CHART 2

WISE'S REVISION OF BECKER'S TAGMEME

	Function	Manifestation
Grammatical Unit (Surface)	A (e.g. Subject)	C (e.g. Noun Phrase)
Lexemic Unit (Deep)	B (e.g. agent)	D (e.g. single, male, human, etc.)

structure meaning as a distinct tagmeme, called a 'lexico-tagmeme', and thus has split Becker's single four-part tagmeme into two distinct tagmemes.

The upper row of her chart representing surface structure, is a grammatical tagmeme in which a grammatical function, such as subject, is correlated with a set of exponents, such as noun phrases. The bottom row, representing deep structure, is a lexical tagmeme in which a semantic function, such as agent, is correlated with a set of lexical features, such as single, male, human, etc., which identifies a real-world referent. In practice, that set of lexical features is identified by the unit(s) of the surface structure which are correlated with the lexical function. Typical units having the features of cell D in the chart above, and which correlate with the agent function, are *Juan, the man, he,* and so on.

Although he approves of her theoretical approach, Pike (1971) does not consider her lexical structure to be genuine deep structure. Lexical structure, in his view, is another type of surface structure. It differs from grammatical structure in the types of units it contains.

Because she does consider lexemic structure to be deep structure, however, she has to leave the mapping of lexemic structures onto the grammatical as an unsolved problem. She could find no way in her theory to connect the two. Tagmemic permutations, which she might have used, have to do with rearranging elements, and not with bringing deep and surface structures together.

Recognition of an underlying structure which is distinct from both grammatical and semantic surface constructions provides a theoretical concept for stating the ways semantic functions are mapped onto, or correlate with, the grammatical. Furthermore, these correlations distinguish subtypes of contrastive clauses in some Philippine languages.[2]

In view of these facts, I have suggested introducing these correlations into the underlying structure as features in the lexical entries of predicate exponents.[3] They are idiosyncratic to some verbs, and characteristic of classes of exponents in many other instances. The underlying patterns of functions then serve as the base from which the surface constructions are derived. In this way, the underlying patterns show the relationships existing between contrastive surface constructions, and also reduce the complexity of the surface string descriptions by eliminating much of the need for subscripting.

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[2]Verb classes which distinguish clause types have been recognized by Reid (1966), Ward and Forster (1967), and Forster and Barnard (1968).

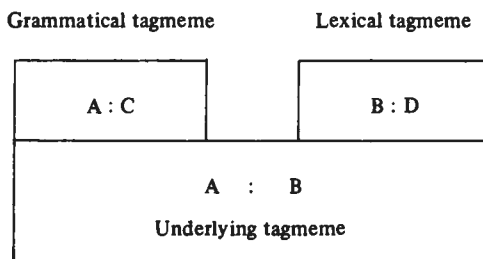[3]Distinguished for Hiligaynon in Wolfenden, 1972.

In Hiligaynon verbal clauses, for which the writer has tested this procedure, the exponent of the predicate function is a verb. Correlation of grammatical and semantic functions in those clauses is signaled by either idiosyncratic features in a single verb, or is characteristic of a class of verbs.[4] From these correlation patterns specific surface constructions can be derived. In the opposite direction, more general underlying patterns can be obtained inductively from the same set of patterns.

To symbolize the patterns of correlation in the underlying structure I propose to synthesize an all-function tagmeme from Wise's grammatical and lexemic tagmemes. Such a modified tagmeme will correlate one type of function with another in much the same way as surface exponents correlate with grammatical functions in Pike's original tagmeme. For example, the semantic function of goal correlates in the underlying pattern of certain Hiligaynon clauses, with the grammatical function of Object (Obj:g). The same grammatical function of Object correlates in the surface structure with a genitive nominal phrase exponent (Obj:GenNP) which manifests it.

Chart 3 shows the relation of the underlying tagmeme to the conventional surface tagmemes. The lettered blocks on Chart 3 are the same as those on Chart 2.

CHART 3

RELATION OF UNDERLYING TAGMEME TO CONVENTIONAL TAGMEME

Grammatical tagmeme   Lexical tagmeme

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 _____          _____
|                   |        |                   |
|      A : C        |        |      B : D        |
|                   |        |                   |
|_____|_____|_____|
|                                                |
|              A    :    B                       |
|           Underlying tagmeme                   |
|_____|
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In Chart 3, the grammatical and semantic (or lexical) tagmemes are seen to be distinct units, but they possess a common underlying structure expressed by an all-function tagmeme (A:B). From the chart it appears that there is a one to one relation between the elements of the all-function tagmeme. However, in actual use, a single grammatical function may correlate simultaneously with more than one semantic function whenever the features of the predicate exponent require it. This hypothesis has only been used to derive grammatical constructions so far, but from the same underlying patterns the surface structures of lexical constructions should be derivable by similar procedures.

The process of derivation used here has been called matrix multiplication by Pike (1962). He suggests treating syntagmemes as special instances of matrices to which matrix multiplication operations can be applied. He conceives of a linguistic construction as a special type of '. . . drived matrix [which] is the product [of] a small matrix multiplied by a constant.' (1962.226). The underlying general patterns described here are the equivalent

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[4]Diller (1971) also introduces the correlation of grammatical and semantic functions into the deep structure in a similar way in his case grammar description of a portion of Waray.

of Pike's small matrix and the deriving elements are his constants. The process has been found useful in the description of both phrases and clauses in Hiligaynon.

In the illustration which follows, underlying patterns consisting of all-function tagmemes are presented first. A constant added to these patterns (Pike's multiplication) derives a new pattern from which, in as many steps as needed by applying the processes, a derivation can be stipulated for surface tagmemes.

As background for the illustration of surface structure derivation which follows, a word should be given about the positing of an underlying general pattern of functions deduced from the specific underlying patterns for individual clause types. This general pattern is simply an inventory of the correlations between the grammatical and the semantic functions which appear in those individual patterns. The introduction of a predicate exponent in the first derivation then orders the correlation of specific functions from the general inventory.

The place of underlying patterns in a tagmemic description is illustrated below by showing how a specific Hiligaynon clause is accounted for, or generated, by this modified tagmemic theory.

The clause to be described is:

Ikuha mo ang kutsilyo sang gumamela para sa maestra.

Av-use-to-get by-you the knife of-a hibiscus for to-the female-teacher

'You use the knife to get a hibiscus for the teacher.'

The first step in accounting for the sentence is to state the formula for the most general underlying pattern from which its derivation begins. In this case, it is the formula for the Underlying Pattern of Declarative Verbal Clauses (UPDeclVbCl).[5]

1. $\text{UPDeclVbCl} = \text{Pred:ev} + \text{S:ag} + \text{O:g} + \text{Cn:i} + \text{R:loc.}$

	exp	ag	g	g
	ca	exp	ben	so
		loc		ben
				io

That Formula 1 for the UPDeclVbCl is a general statement is indicated by the fact that a cluster of semantic functions is correlated with each grammatical function. They represent the possibilities for correlation. The formula for a specific underlying correlation pattern is derived from that general pattern by introducing a specific matrix of features representing one of the verb stem classes. Derivational Statement 1 gives the specific correlation pattern resulting from a matrix multiplication operation based on Verb Stem Class X.

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[5]The symbols are abbreviations for the following labels:

ag	=	agent	io	=	indirect object
AV	=	accessory voice	loc	=	location
ben	=	beneficiary	Nmv	=	nominative
ca	=	causer	NP	=	noun phrase
Cn	=	conveyant	O	=	object
Dat	=	dative	Pred	=	predicate
ev	=	event	R	=	referent
exp	=	experiencer	S	=	subject
g	=	goal	so	=	source
Gen	=	genitive	T	=	topic
i	=	instrument	VbP	=	verb phrase

Derivational Statement 1.

Verb Stem Class X x UPDeclVbCl = UPDeclD10VbCl.

The extended formula for the underlying pattern of a D10 verbal clause (UPDeclD-10VbCl) is now given as Formula 2.

Formula 2.

UPDeclD10VbCl = Pred:ev–10 + S:ag + (O:g) + (Cn:i) + (R:b).

Formula 2 indicates that in the underlying pattern of a declarative D10 verbal clause the predicate and subject are obligatory, and the object, conveyant, and referent are optional. The predicate is correlated with a Class 10 event semantic function, the subject grammatical function is correlated with the agent semantic function, the object is correlated with goal, the conveyant is correlated with instrument, and the referent is correlated with beneficiary.

The surface structure of the declarative D10 verbal clause being described comes from the Accessory Voice topicalization procedure, which chooses the accessory voice affix *i-* for the verb, and topicalizes the conveyant tagmeme by assigning a nominative noun phrase as its manifesting exponent. The remaining tagmemes of this clause are manifested by nontopic exponents derived by a variety of phrase – level processes not discussed in this brief illustration. The resulting surface structure is now given as Formula 3.

Formula 3.

AVDeclD10VbCl = Pred:AVVbP + S:GenNP + (O:GenNP) + Cn/T:NmvNP + (R:DatNP).

Formula 3 indicates that an accessory voice declarative D10 verbal clause consists of a predicate correlated with, or manifested by, an accessory voice verb phrase, a subject manifested by a genitive noun phrase, an optional object manifested by a genitive noun phrase, an obligatory conveyant also functioning as topic of the clause and manifested by a nominative phrase, and an optional referent manifested by a dative phrase.

Note that the conveyant (Cn) tagmeme is now obligatory since it is topicalized. Lexical Insertion Rules (not discussed here) then provide the specific form of the clause as:

ikuha mo sang gumamela ang kutsilyo para sa maestra.

To complete the derivation, an Object Permutation Rule exchanges the positions of the object and the conveyant in the surface string in order to account for the final form of the clause.

Ikuha mo ang kutsilyo sang gumamela para sa maestra.
'You use the knife to get a hibiscus for the teacher.'

The clause is now accounted for.

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