

A GRAMMAR OF VERB SERIALIZATION

IN THAI¹

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In Thailand

Thai is one of many languages in Southeast Asia that has Verb Serialization, i.e. a string of verbs occurring in sequence or serially within a clause. This phenomenon of these languages has sometimes been noted in passing but rarely, to my knowledge, has it been singled out and investigated as to its specific linguistic properties and how these properties are to be accounted for in a grammar. In this paper I will present a description which will account for the properties, both syntactic and semantic, of Verb Serialization in Thai and how they are to be described in relation to other aspects of the linguistic structure of this language. Since Verb Serialization exists in several languages of the same area of the world it is hoped that the following discussion will also provide insight into the structure of these other languages.

1. The Data

A sentence in Thai may consist of a single verb, which may be transitive or intransitive, or adjective.²

- 1) sùk àan naŋsǎi
N V N
Sook read book
Sook read the book.

- 2) bun yùu
N V
Boon is-located
Boon is here.

- 3) phensǎi sǎay
N adj
Pensee pretty
Pensee is pretty.

Verb Serialization in Thai, as in many other languages of Southeast Asia, is the occurrence of two or more verbs in sequence one after the other.

- 4) dèk sǎi khaŋm
N V N
child buy candy
The child bought candy.

- 5) dèk pay sǎi khaŋm
 N V V N
 child go buy candy
 The child went to buy candy.
- 6) dèk wɪŋ pay sǎi khaŋm
 N V V V N
 child run go buy candy
 The child ran to buy candy.
- 7) dèk wɪŋ klàp pay sǎi khaŋm
 N V V V V N
 child run return go buy candy
 The child returned running to buy candy.

Verb Serialization need not be confined to sequences of verbs alone, however. Oftentimes there is a mixture of transitive and intransitive verbs, along with objects and locational nouns, occurring in a series.³

- 8) sùk aw máy maa bân
 Sook take wood come house
 Sook brought the wood home.
- 9) sùk aw máy maa sâŋ tó?
 Sook take wood come build table
 Sook brought wood to build a table.
- 10) prasít chûay sùk hăam máy maa bân
 Prasit help Sook carry wood come house
 Prasit helped Sook carry the wood home.
- 11) prasít klàp maa chûay sùk sâŋ tó?
 Prasit return come help Sook build table
 Prasit returned to help Sook build the table.

Although adjectives are marked as verbs in Thai (cf. 3), their occurrence in Verb Serialization is rarer and appears to be limited to those adjectives which can function as modifiers to other verbs.

- 12) dèk tham dii
 child do good
 The child is behaving well.
- 13) phôo yùu sabaay dii
 father locate well good
 Father is well and happy.
- 14) bân yùu sŭŋ
 house locate high
 The house is built high up off the ground.

- 15) sùk sôm bâan mày
 Sook repair house new
 Sook repaired anew his house.

The goal of this paper is to present a grammar of Verb Serialization in Thai which will be descriptive of all that is relevant about series of verbs in this language. To accomplish this goal, I shall argue that, in spite of their popularity in current grammatical descriptions, transformational rules make quite misleading and sometimes ambiguous predictions in describing the properties, whether syntactic or semantic, of Verb Serialization in Thai. Instead, I shall argue that all the relevant facts of Verb Serialization are adequately described by a grammar employing 1) Phrase Structure rules to account for the syntactic properties of Verb Serialization, and 2) interpretative rules to account for the semantic properties of Verb Serialization.

2. A Phrase Structure Description

Verb Serialization, i.e. the fragment of Thai illustrated above and which I have chosen to term Verb Serialization, properly begins in relation to the following PS rules.

- 16) i. S → NP + PDP
 ii. PDP → (Aux) VP* (S)
 iii. VP → V (NP)
 iv. NP → N (S)

The symbols and interpretations of these rules are well known in linguistic circles so I will not take the space to spell out their details.⁴ Of crucial importance to the discussion, however, is the claim that the above rules make about Verb Serialization, namely that a series of verbs in Thai is derived from VP*. While the asterisk in VP* will eventually have to be replaced by a more precise symbol, it is still useful at this stage of our discussion, for it means that in a PS derivation one or more Verb Phrases may be enumerated thus specifying a node of the structure in Figure 1.

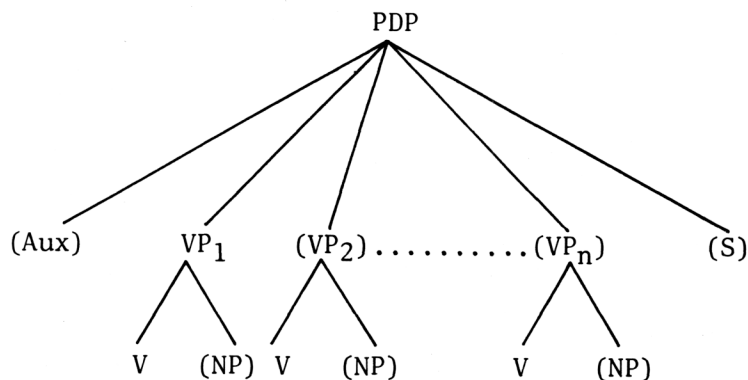


Figure 1

The category VP* makes two specific claims about Verb Serialization.

--First, VP* states that Verb Serialization, in addition to S, has a recursive property of its own in the linguistic structure of Thai. Understood in this sense recursion means *repetition*, i.e. the grammar may enumerate one or any number of Verb Phrases independently of the symbol S or of underlying sentences. Thus Verb Serialization is not 'reducible to a certain combination of single sentences' (Kuroda 1965) out of which, by means of transformational rules which would raise deeply embedded VP nodes to be surface structure constituents of an initial verb, a grammar would finally enumerate a string of verbs. Rather, as based on the grammar proposed above, any V_{1+n} of a series⁵ is enumerated from a VP directly specified by a rule of the base component of the grammar.

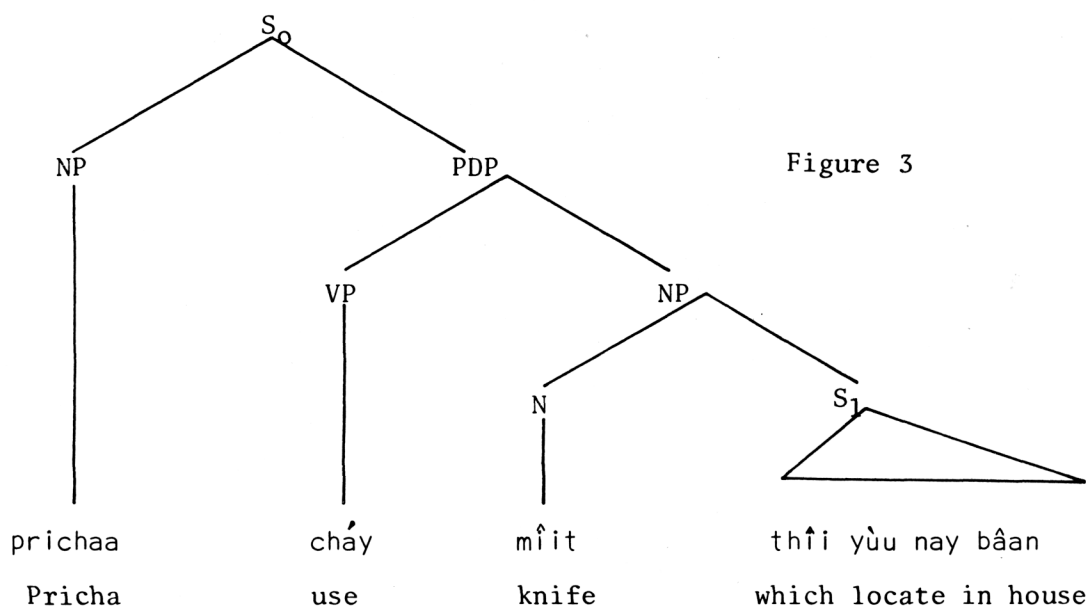
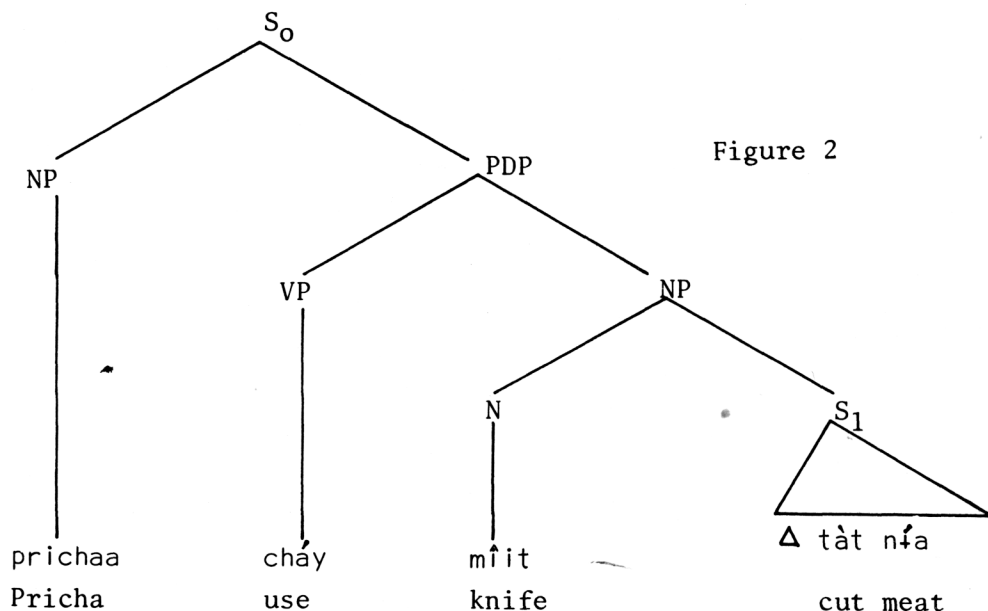
--Second, VP* makes the claim that Verb Serialization is sub-propositional, and not propositional, in character. VP* in a grammar of Thai states that Verb Serialization is fundamentally different from the propositional character which is inherent in the symbol S. Each V_{1+n} , in other words, does not constitute a separate proposition (which would then have to be described via an underlying S and transformational rules); rather, a V_{1+n} forms a constituent part of a proposition, i.e. S, in a grammar of Thai. What this sub-propositional character of Verb Serialization is, of course, will be brought out in the discussion of this paper.

2.1 The Argument From Syntax

In the rules 16i-iv above there are two occurrences of embedded S: the first is in 16ii which is the rule generating Verb Complementatation in Thai, and the second is in 16iv which is the rule for Relativization for Thai. At first blush it would appear reasonable to derive each V_{1+n} from either of these two construction, $[S]_{PDP}$ or $[S]_{NP}$, thus arguing in effect that a V_{1+n} is a particular surface structure manifestation of an underlying verb complement or relative clause. But to derive sequences of verbs from an underlying S, whether it is $[S]_{PDP}$ or $[S]_{NP}$, by means of transformational rules runs into a major obstacle. Since it makes no difference whether the underlying S is a verb complement or relative clause, for either source give rise to the same problem, consider only the examples below which would purport to derive the second verb of a verb series from an underlying $[S]_{NP}$ or relative clause.

- 17) prichaa chǎy mǐt tāt nǎa
Prichaa use knife cut meat
Pricha used a knife to cut the meat.
- 18) prichaa chǎy mǐt thīi yūu nay bān
Pricha use knife which locate in house
Pricha used the knife which was in the house.

Sentence 17 contains a verb phrase composed of a series of two verbs; 18 contains no instance of Verb Serialization but does have a relative clause modifying the noun /mîit/ 'knife'. Now suppose that 17 is derived from a structure as displayed in Figure 2, which in turn is to be compared with Figure 3, the deep structure of sentence 18. A brief perusal of these two figures reveals exactly the same underlying structure for both Verb Serialization and Relativization. According to the schema in Figure 2 the second verb of the verb series of sentence 17, /tât/ 'to cut', is to be derived from an embedded S_1 , dominated by an NP; in Figure 3 the relative clause of 18, /thîi yùu nay bâan/ 'which was in the house', is likewise derived from an embedded S_1 dominated by an NP. In both instances the NP is further dominated by PDP.



Now if S_1 in Figure 2 is to be raised and adjoined to S_0 to generate 17, what information is there in the structure of Figure 3 that would prevent S_1 from also being raised when it should remain dominated by NP in order to be a relative clause modifying /mîit/ 'knife' in sentence 18? There is no such structural information in Figure 3 and indeed the same rule that would raise S_1 in Figure 2 would also raise S_1 in Figure 3 to generate the grammatical sentence

- 19) prichaa cháy mîit yùu nay bâan
 Pricha use knife locate in house
 Pricha is using the knife in the house.

The phrase /yùu nay bâan/ in this sentence is no longer, as can readily be surmised from the English translation, a relative clause but has taken on a different function altogether. Clearly this is a sequence of grammatical events we want to avoid, for to derive transformationally a V_{1+n} (in this case the second verb of a series) from an underlying $[S]_{NP}$ is to assert that both Verb Serialization and relative clauses are to be thus derived, hence neither one can really be derived, or worse still something entirely different emerges as the output of the rule.

The source of this impasse of deriving either Verb Serialization or relative clauses from an underlying S can be traced to the fact that a transformational approach to generating sequences of verbs in Thai fails to assign correct structural descriptions to the data, or more precisely, fails to assign any structural description to Verb Serialization. This pitfall, however, is avoided in the grammar proposed in 16i-iv: VP* assigns a separate structural description to sequences of verbs apart from both Relativization and Verb Complementation. The latter two constructions are unambiguously, and in a straightforward manner, derived from $[S]_{NP}$ and $[S]_{pdp}$ respectively, and sequences of verbs are enumerated by a PS rule, as shown by the schema in Figure 1, unrelated to verb complements or relative clauses.

Enumerating a sequence of several verbs from VP* instead of deriving them from underlying S's is to be preferred because the latter fails to adequately describe the data. However, this is a negative argument and nothing is really established by negation alone. A hypothesis is ultimately established by positive argument, i.e. by showing that it can account for a wide range of data in addition to the data that another hypothesis fails to account for. The PS rules of 16i-iv accomplish this positive aspect. For example, these rules make the correct prediction that Verb Serialization, i.e. VP*, may be enumerated for any and all occurrences of S contained in the rules. That is, sequences of verbs may occur in verb complements and relative clauses in addition to occurring in main clauses.

The categories S and VP* in the rules 16i-iv state that they may be embeddings within embeddings within the structure of Thai. And no matter how deep the embedding is, Verb Serialization may also occur thus producing for a sentence containing several embedded clauses a great number of verbs. To illustrate this with a very long sentence

would be too tedious, but a moderately long sentence would perhaps not be inappropriate at this point. Sentence 20 contains, in

- 20) dèk thîi maa sǎi khanǒm wîŋ klàp
 child who come buy candy run return
- pay hây phâan thîi mây mii ɲən sǎi
 go give friend who not have money buy
- maa kin
 come eat
- The child who came to buy candy returned running to give his friends who had none some money to buy candy with.

its surface form, a total of twelve verbs, but it would be a mistake to assume that all twelve comprise a single series. Structurally there are four such series:

- 20) a. Relative Clause of Main Clause
 [dèk [thîi maa sǎi khanǒm]_S]_{NP}
 N Rel-Pro V V N
 child who come buy candy
- b. Main Clause
[wîŋ klàp pay hây]_{PDP}...
 V V V V
 run return go give
- c. Relative Clause of Verb Complement
 [phâan [thîi mây mii ɲən sǎi]_S]_{NP}
 N Rel-Pro Neg V N V
 friend who not have money buy
- d. Verb Complement
[maa kin]_{PDP}...
 V V
 come eat

Rules 16i-iv can enumerate all the structures contained in 20. The occurrences of S in these rules will generate the four clauses noted: the main clause, two relative clauses and a verb complement. And the category VP*, since it is a constituent part of S and every S enumerated by the PS rules, will specify the various verbs needed for each clause.

2.2 The Argument From Semantics

The PS rules proposed in 16i-iv opens the way to account for an even more important aspect of Verb Serialization in Thai. Earlier I made the statement that Verb Serialization is sub-propositional, and not propositional, in character. It is time to make explicit this sub-

propositional characteristic of verb series in Thai

When verb serialization in a language as Thai is contrasted with English we see that verbs occurring in sequence do not necessarily describe separate events or actions occurring serially; rather, all verbs in a series refer to a single proposition, the proposition contained in the S dominating the whole construction. The initial verb, or V_1 , of a series is propositional, i.e. this is the verb that carries the true predicate meaning of the proposition; any subsequent verb, or V_{1+n} , states a functional meaning which is related to the predicate or propositional meaning of the initial verb. Depending on the propositional content of the initial verb the functional meaning of a V_{1+n} may be an extra semantic component added on to the inherent semantic content already contained in the verb or it may comprise some radical alternation of the meaning of the verb.

Here of course is an unavoidable ambiguity in my choice of terms, but an ambiguity that can be readily sorted out without any difficulty. The syntactic construction I call Verb Serialization I also characterize as sub-propositional. The term sup-propositional in this sense means that a sequence of verbs is to be described within the context of a single proposition as opposed to deriving the verbs from separate propositions. The one verb of a series I call propositional is directly related to this proposition as opposed to any subsequent verb which is not but which is related functionally to the initial verb. In a different but very real sense, and this is where the ambiguity emerges, all verbs occurring after the initial verb are sub-propositional in that they are not related to the proposition of S but are functional extensions of the initial verb which, to borrow a phrase from tradition, is the main verb. The former sense of sub-proposition has already been described in previous sections of this paper; the latter sense, where sub-propositional equals functional, is the focus of this section.

An example of where a functional meaning is added on to the semantic content of a verb can be seen in a two verb series denoting Goal. Sentences 4 and 5 above, here repeated, when compared brings out this additional characteristic.

- 4) dèk sǎi khanǒm
child buy candy
The child bought candy
- 5) dek pay sǎi khanǒm
child go buy candy
The child went to buy candy.

In 4 the verb /sǎi/ 'to buy' states only the proposition that the child bought some candy, whether it was the goal of some other action is not specified. In 5, however, /sǎi/, being the second verb of a series, states the additional meaning that the Goal of the verb /pay/ 'to go' was the buying of candy; the semantic structure of /sǎi/ 'to buy' is not altered in any radical way with the exception that, because of

the serial environment it finds itself in, a functional meaning of Goal has been attached.

One of the more noticable functions performed by Verb Serialization in Thai is that of Instrumental.

- 21) sùk aw máy sǎan tó?
Sook take wood build table
Sook built the table with wood.
- 22) sùk chǎy phráa khôn tôn máy
Sook use machete cut tree
Sook chopped down the tree with a machete.
- 23) sùk mii mǐit tǎt chǎak
Sook has knife cut rope
Sook has a knife with which to cut the rope.

One should not be deceived by the English translations of these sentences into believing that, e.g. in 21 and 22, it is the second verb that is the main verb and that the initial verb of the series denotes some type of auxiliary status. The fact that the translational equivalent of the second verb in Thai happens to be the main verb in the English is due to the way Instrument is constructed in English and therefore has no bearing on the structural description of the Instrument in Thai. Indeed sentence 23 was included for this very reason, to show that the Instrument construction in Thai is related to sequences of verbs. In each of the three sentences above the initial Verb Phrase, comprising of V+NP, is propositional and the second Verb Phrase is functional describing what is done *with* the initial Verb Phrase.

The verbs /pay/ 'to go' and /maa/ 'to come' provide the functional meanings of movement and direction to other verbs which, unlike their English equivalents, do not communicate such meanings.

- 24) sùk aw naŋsǎi
Sook take book
Sook selected a book.
- 25) sùk aw naŋsǎi pay bǎan
Sook take book go house
Sook took the book home.
- 26) sùk aw naŋsǎi maa bǎan
Sook take book come house
Sook brought the book home.

/aw/ 'to take' in 24 makes no statement about movement, hence the reason for translating it in this instance as 'selected' instead of 'took' which has the additional meaning of 'movement (away from)' in English. To have this additional meaning of movement in Thai one must attach the verbs 'to go' or 'to come' to the Verb Phrase /aw+NP/ thus giving the

whole construction the meanings of movement or direction away from in the former case, and of movement or direction toward in the latter case. These functional meanings of /pay/ and /maa/ are related semantically to the propositional meanings of 'go' and 'come' respectively but this relation must not blur the distinction that still exists between the two types of meanings, a distinction that corresponds to a difference in syntactic environment.

Thai parallels English in such patterns as 'to raise up' and 'to sit down'. However, while 'up' and 'down' in English are traditionally classified as adverbs, the Thai equivalents to these two words, /khân/ and /lɔŋ/ respectively, are verbs. Each may occur in either a propositional or functional meaning.

- 27) a. bun khân phuukhăw pay
 Boon up mountain go
 Boon went up the mountain.
- b. bun yók mǝi khân
 Boon raise hand up
 Boon raised his hand up.
- 28) a. bun lɔŋ phuukhăw maa
 Boon down mountain come
 Boon came down the mountain.
- b. bun nân lɔŋ
 Boon sit down
 Boon sat down.

In the (a) sentences above the verbs /khân/ '(to be) up' and /lɔŋ/ '(to be) down' occur first in their respective verb series as propositional statements. But, as in the case of /aw/ 'to take' above, they do not carry the notion of movement or direction and for this reason the verbs /pay/ 'to go' and /maa/ 'to come' are needed to provide these functional meanings. Likewise, in the (b) sentences above, the verbs /yók/ 'to raise' and /nân/ 'to sit' do not have the components of 'up' and 'down' inherent in their respective semantic structures; rather, these meanings are provided as separate functions added on in the forms of verbs.

The verbs /wáy/ 'to place' and /yùu/ 'to be located' perform an aspectual function in relation to other verbs.

- 29) bun sǝi khâaw wáy
 Boon buy rice place
 Boon bought up rice.
- 30) bun `aan naŋsǝi yùu
 Boon read book be-locate
 Boon is reading a book.

/wáy/ in 29 is a perfective stating that the person bought up a quantity of rice to have on hand. /yùu/ in 30 is a present continuative saying that the person is now in the act of reading a book, an act that started at a time previous to the statement, is going on at the time of speaking and will continue after the statement is uttered.

/pen/ 'to be' can perform an adverbial function, similar to 'as' in English.

- 31) dèk tèeŋ tua pen thahään
 child dress body be soldier
 The child dressed up as a soldier.

The verb /hây/ 'to give' assumes a dative function when occurring as a V_{1+n} in a series of verbs.

- 32) mēē hây khanǎm dèk
 mother give candy child
 The mother gave candy to her child.
- 33) mēē sǎi khanǎm hây dèk
 mother buy candy give child
 The mother bought candy for her child.

In sentence 32 /hây/ is propositional while in 33 the verb is benefactive, i.e. meaning 'in behalf of' someone. Still another functional meaning of /hây/ is that of purpose, but in this case the syntactic environment wherein /hây/ occurs is different than what is found in 33.

- 34) sùk sǎaŋ bǎan hây phǎo yùu
 Sook build house give father locate
 Sook built a house for his father to live in.

In this sentence the Purpose function is understood because /hây/ occurs before a verb complement, /phǎo yùu/ 'father be-located', stating the purpose for which the house was built. On the other hand the Benefactive function of /hây/ is understood for 33 because it does not occur before a verb complement but before only a noun. Of course the meanings of Benefactive and Purpose are closely related concepts, especially when the purpose is for someone's behalf. For this reason these two concepts are expressed linguistically in similar fashion in many languages, of which the Thai verb /hây/ is only another example.

The above examples are sufficient, I believe, to illustrate the sub-propositional, i.e. functional, nature contained in Verb Serialization in Thai. Many more examples and verbs could be given but they would only belabor the obvious. In other words, we now have an idea of what a grammar for a language such as Thai must account for in describing sequences of verbs. Such a grammar must be able to make explicit two facts about verbs in Thai: 1) when a verb occurs alone or initially in a series of verbs its meaning is propositional; and 2) when a verb occurs in a V_{1+n} position of a series

its meaning is functional.

The syntactic rules of 16i-iv makes this difference explicit, more precisely opens the way for a correct characterization of this difference in a description of Thai verbs. Now a transformational approach, deriving each V_{1+n} from an underlying S, fails to make this characterization. Consider, for example, the following sentence containing a series of four verbs.

- 35) sùk aw máy maa sâaŋ tó? hây bun
Sook take wood come build table give Boon
Sook brought wood to make a table to give to Boon.

Only the initial verb above, /aw/ 'to take', may be said to be propositional in meaning. The other three verbs relate some functional meaning to the meaning of this initial verb: /maa/ communicates movement and direction towards speaker; /sâaŋ/ states the goal of bringing the wood; and /hây/ shows that the movement and goal of bringing the wood was for the benefit of someone.

Now if these latter three verbs, /maa/, /sâaŋ/ and /hây/, are used as single verbs in clauses their meanings are propositional: 'to come', 'to build' and 'to give' respectively. Therefore, the problem in a transformational description is this: if these three verbs are derived from as many embedded sentences and having by virtue of this type of deep structure propositional meanings assigned to them in the deep structure, how and when in the process of description are their functional interpretations to be assigned?

If we assume that each of these verbs is derived from an embedded sentence specified by PS rules of the base component, and since functional readings are determined by the relational patterns between elements observed in linguistic structure, then the functional interpretation of Verb Serialization in Thai must wait until the proper patterns have first been generated by the grammar. This means simply that no functional interpretation can be given until the transformational component has mapped all underlying propositions into certain surface patterns after which they can be assigned the proper interpretation, i.e. *reassigned* functional readings to replace the propositional readings of the deep structure.

To insist on a transformational approach in describing sequences of verbs in Thai requires one of two things. One may, as Pongsri Lekawatana (1970) did, assign cases (Dative, Direction, Purpose, etc.) to underlying occurrences of S which would assign the proper functional readings at a proper level of grammar and which would be carried through the transformational process, emerging at the surface level to account for the functional meanings of verbs at this level. Or one may assume that in, or because of, the transformational process meaning is changed from propositional to functional. In the case of describing Verb Serialization in Thai neither of these alternatives has any motivation, for in the former, attaching a case marker onto an S is only stating the

obvious, describing nothing much less explaining anything about the structure of Thai. And for the latter alternative, a notation that because of a transformational process a verb has now taken on a function meaning, is only making up for the obvious by means of an *ad hoc* convention tacked on to the grammar. Again, such a procedure neither describes nor explains anything.

On the other hand, the rules of 16i-iv avoids these inadequacies while at the same time opening the way for a formal, i.e. descriptive, accounting of both the propositional and functional nature of Verb Serialization in Thai, a matter I will now take up in the next section.

3. An Interpretative Description

A grammar must be capable of giving a formal accounting of the semantic properties of a language, and not only of its syntactic properties. To accomplish this in a grammar of Verb Serialization in Thai, I propose that the semantics of Verb Serialization be accounted for by means of interpretative rules. Two types of interpretative rules are needed for the semantics of verbs in Thai. One type is interpretative rules to account for the difference in meaning between the V_1 and V_{1+n} of a verb series. The second type is interpretative rules of a more ideosyncratic sort to account for the lexical-specific meanings of various verbs occurring in V_{1+n} positions.

Rule 16ii may theoretically enumerate any number of Verb Phrases for a Predicate Phrase. Whether a particular verb in any Verb Phrase thus enumerated is propositional or functional in meaning depends upon its syntactic environment, i.e. depends upon the position in which it occurs in the PDP. This difference in meaning, as has already been noted in the previous section, can be summarized in two parts:

- 36) a. if a verb is the initial verb of a PDP
then its meaning is propositional;
- b. if a verb follows an initial verb in a PDP then its
meaning is functional or assumes a functional com-
ponent in addition to its propositional meaning.

Given this formulation we can see that the semantics of Verb Serialization in a language as Thai parallels what Chomsky (1965:73) said about functional notions, viz. 'that information concerning grammatical functions....can be extracted directly from the rewriting rules of the base'. While the functional uses of each V_{1+n} is not 'grammatical, i.e. as Chomsky was using the term in the sense of being a Subject or Object, the usage is still functional in a very real sense and moreover can be extracted from the rule rewriting PDP into VP*.

Formulation 36 can be formalized simply enough in a grammar of Thai. Two interpretative rules are needed, the inputs of each being a matrix of syntactic features specifying the syntactic environ-

ment a verb may occur in. The output of each rule is an interpretation or reading assigned to the matrix of syntactic features. For example, the syntactic information as summarized in 36a can be formalized in a matrix form and assigned a reading by means of rule 37:

$$37) \begin{bmatrix} +V \\ +NP \text{ (Aux)}_ _ _ \end{bmatrix} = \text{Propositional}$$

This rule states that a verb occurring following an NP and optional Aux, which adequately characterize the initial verb position of a verb series, is propositional in meaning. 36b may be formally accounted for in a similar fashion:

$$38) \begin{bmatrix} +V \\ +VP_ _ _ \end{bmatrix} = \text{Functional}$$

stating that a verb occurring following a verb is functional in meaning. Both rules are unordered in respect of each other since neither one depends upon the output of the other.

Rules 37 and 38 are rules of interpretation of one type that is needed to describe the semantics of Verb Serialization in Thai. However, rules of a more highly specific sort are also needed, for each verb occurring in a V_{1+n} position also carries a specific functional meaning not carried by any other verb. For example, Aspect of Present Continuation is carried by the verb /yùu/ 'to be located' while Movement may be carried by /pay/ 'to go'. To adequately account for these other factors in a grammar of Thai, there must be idiosyncratic interpretative rules for the various verbs involved. That is, it is not enough to state that /pay/ 'to go' may be functional in a certain syntactic environment; a grammar must also have an explicit way of stating which functional meaning of the many which are possible is communicated by the verb.

The verb /hây/ 'to give' is an excellent illustration of this need, for it has two functional meanings, each one depending upon the particular syntactic environment it occurs in, which is demonstrated in the following two rules.

$$39) \begin{array}{ll} \text{a.} & \begin{bmatrix} \text{hây - TO GIVE} \\ +VP_ _ _ (NP) \end{bmatrix} = \text{'on behalf of'} \\ \text{b.} & \begin{bmatrix} \text{hây - TO GIVE} \\ +VP_ _ S \end{bmatrix} = \text{'for the purpose of'} \end{array}$$

In each matrix above the gloss TO GIVE is intended to stand for the set of semantic features giving the meaning of the verb; the syntactic features specify the environment wherein the meaning occurs and the equation gives the specific functional meaning which is based on the syntactic environment. As can be seen it is inadequate to state merely that the verb /hây/ is functional in the environment [+VP__]. This is true but a grammar of Thai must further be capable of specifying what functional meaning is to be assigned. In the case of /hây/ this was accomplished in 39a and b by giving more detailed specification of each syntactic environment the verb may occur in, and because more details are specified the correct functional meaning can be assigned in each instance.

As 39 shows, there is a need, in any complete grammar of Thai based on the model used in this paper, for lexical interpretative rules of a highly specified sort, more so than rule 38 demonstrates. Yet this is not to say that rule 38 should be dropped from a grammar of Thai, for it still captures a distinctive difference in the usage of verbs in Thai and as such paves the way for describing the more specific functional meanings of individual Thai verbs. In a way rule 38, as indeed rule 37 is also, is a semantic redundancy rule which assigns the redundant semantic feature *Functional* to any verb happening to occur in the environment [+VP__]. That is, because of rule 38, the reading *Functional* need not be repeatedly assigned in a grammar via a separate but identical rule for each verb which happens to have the syntactic feature [+VP__] in its matrix. Because rule 38 automatically makes this assignment for all such verbs, a grammar containing this rule thereby becomes a more highly valued device for describing Thai, especially the properties of Verb Serialization in Thai. On the other hand, rule 38 can do no more than make a simple assignment of *Functional*, no matter how important this fact is in describing Thai. There are still semantic facts of a more specific nature about individual verbs occurring in Verb Serialization in Thai which must be explicated in a grammar. Hence the need for rules of the type that 39a and 39b represent.

4. A Modification

Rule 16ii may theoretically enumerate any number of Verb Phrases, hence verbs, for a clause. In other words, any arbitrary number of verbs, say 50 verbs, may be enumerated for any one clause and the grammar as now constructed would state that such a large number is grammatical. Obviously something is wrong. There is an upper limit to the number of words, phrases and clauses that may occur in a single sentence in language, and it appears quite counterintuitive to say that this limit is *only* a matter of performance and not of competence, as has been the wont in theoretical discussions on the nature of language. That is, as in the case of Verb Serialization in Thai, no Thai native speaker speaks a series of 50, 40 or even 25 verbs. And the reason has to do not with a lack of language performance (such as short memory span) but with the knowledge that no one speaks a clause containing so many verbs. The problem remaining, therefore, is explicating the basis of this knowledge.

However, explicating this knowledge in a grammatical description of Thai is yet a difficult problem. While this may be beyond our present capabilities in constructing a grammar for this language, we can still make a few observations. For example, I have been able to construct a sentence in Thai containing a series of eleven verbs.

40) prɪdaa khɭi rót aw máy òok càak pàa klàp
 N V N V N V V N V
 Prida ride vehicle take wood out from forest return

khɯn pay sàaŋ baaŋ wáy pen ráan hây sùk
 V V V N V V N V N
 up go build house place be store give Sook

Prida riding a truck took wood out of the forest and re-
 turned back up to build a house for a store for Sook.

This sentence has been accepted by several Thai speakers. Conceptually I know of no other verb whose meaning can be added to the others above without turning the sentence into an ungrammatical sentence. Perhaps this sentence represents the maximum number of verbs that can occur in Verb Serialization, for in order to expand this sentence into a longer sentence containing more words, especially verbs, other constructions such as relative clauses and adjectives must be added.

Because there is a limit to the number of verbs that may occur in a series in a Thai clause, we must return to our syntactic verbs of 16i-iv and make an important modification: The asterisk of VP* in 16ii must be replaced by a more precise symbol to more accurately characterize this fact about Verb Serialization. Assuming that eleven verbs is the upper limit of the number of verbs that may occur in a series in a Thai clause, I propose rule 16ii' which takes into account this limited nature of Verb Serialization.

16ii') PDP \rightarrow (Aux) VPⁿ (S) $n \leq 11$

That is, a grammar of Thai will now enumerate for a clause only up to eleven Verb Phrases, cutting off the enumeration of any more verbs at this point thus eliminating the chance of generating an ungrammatical sentence with a verb series containing 12, 20, or even more verbs.

However, amended rule 16ii' is only an observation of what apparently is the case with Verb Serialization in Thai; the rule offers us no hypothesis or explanation as to why only eleven verbs, or some other finite number, should occur in a series. The explanation for this limitation, I believe, is to be found in the functional structure of natural language, a subject we still know little about. That is, since each V_{1+n} in Thai is intimately bound up semantically with a functional meaning, such as Goal, Movement, Dative, etc., we would know how many verbs may occur in a series if we knew how many such functions there really are in natural language. Intuitively there appears to be only a finite number of functions we ever use in language, and if there are only n-number functions in natural language then there can

be only n-number of V_{1+n} 's that may occur in a Thai clause minus any functions carried by other parts of speech (e.g. Locative by the Thai preposition /nay/ 'in'). This difference plus the initial verb of a series would then give the total number of verbs that could possibly occur in Verb Serialization in Thai.

Because of the functional nature of Verb Serialization it would appear natural that Case Grammar, as proposed by Fillmore (1968, 1969) and others, would be a source of information in this matter but unfortunately this does not turn out to be true. While there are similarities there are also crucial differences, viz. Case Grammar is concerned with nouns and their range of meaning in relation to certain verbs while a description of Verb Serialization in Thai is concerned with verbs and their range of meanings in relation to certain other verbs. Some of the cases in Case Grammar, e.g. Benefactive, Instrumental and Directional, are indeed similar to what has been described for sequences of verbs in Thai; but such cases as Agentive and Objective are totally foreign to the functional structure of Verb Serialization. So while Fillmore has defined twelve cases we see not all are applicable in helping us determine how many verbs may occur in a series in a language as Thai.

Furthermore when a closer comparison is made between Case Grammar and Verb Serialization we see a number of intrinsic differences, so it is not sufficient to merely say that if we knew how many different functions there are in Case Grammar then we would know how many verbs may occur in a series. Case Grammar and Verb Serialization form in effect, two different, albeit overlapping subsystems within the functional structure of language. Therefore, if we desire to know the n-number of verbs that may occur in a series then we must know the n-number of functions the predicate subsystem may contain, and the latter number is in all probability different from the number of Cases observed to be needed by case Grammar in order to describe the various relationships holding between nouns and verbs.

Therefore, while modified rule 16ii' is a more precise formalization than 16ii, it is still tentative at this stage of our knowledge. We have yet to learn what is the exact number of verbs that may occur in a series, but more importantly we have yet to learn the precise reason why there is this limitation.

NOTES

¹ - I wish to thank Fred W. Jr. for reading and¹ correcting several mistakes in a previous draft of this paper. Any mistake, however, is the sole responsibility of the writer.

² Thai has five tones. The following symbols are used to designate these tones: ' = high, ` = low, ^ = falling, ˇ = rising. No tone mark indicates mid tone. /h/ following a consonant indicates aspiration. Double vowels of the same phonetic value refer to long vowels.

- 3 From now on the symbols N and V will not ordinarily be given with the examples. Whether a word is a noun or verb, or some other part of speech, can readily be inferred from the gloss.
- 4 Of course rule 16iv is an abbreviated account of the Noun Phrase in Thai. For any complete description other categories such as number and classifier must be included, but since they are immaterial to the discussion they are omitted. The motivation for the asterisk in VP*, and how it is developed in this paper, is taken from Lakoff and Peters (1969); the reader should not look for any similarities between my discussion and Dougherty (1970, 1971) where VP*, along with substitution transformations, becomes a device to generate coordinate conjoined sentences.
- 5 The symbol V_{1+n} refers to any verb of a series which occurs *after* an initial verb. e.g. $V_{1+1} = V_2$ or the second verb of a series, $V_{1+2} = V_3$ or the third verb of a series, and so on.

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