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Author(s)	Sugimoto, Takashi
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## *Word order and movement processes*

Takashi Sugimoto

1. The purpose of the present essay is to investigate the possibility of correlating the word order and movement processes in languages. Particularly I would like to propose a classification of movement processes based on the typology of a language.

2. One interesting typological characteristic of languages is that there is a strong correlation between the order of V and O and that of other grammatical elements. Thus in VO languages, we find the order Negative particle - Verb, Modal auxiliary - Infinitive, Aspect/tense — Infinitive, etc. These may be viewed as natural consequences of VO order. Thus consider the following sentences of English and Saipan Carolinian, which are both VO languages:

E: I do not go to school.

C: *i sse la gakko*

*I not go school* “I do not go to school.”

This can be accounted for by assuming that the negative particle is a deep structural semantic predicate that takes the entire sentence as its object. That is, by assuming the following semantic structures:

E: (NOT (GO I SCHOOL) <sub>s</sub>) <sub>s</sub>

C: (SSE (LA I GAKKO) <sub>s</sub>) <sub>s</sub>

The fact that the negative particles precede the main verb on the surface in these languages becomes an automatic consequence of the surface VO order

because the main verb appears at a deeper level in the sentence which is an object of the negative predicate. Similarly the fact that in a language like Japanese, which is an OV language, the negative particle follows the main verb on the surface is automatically accounted for if we assume the negative particle to be a deep structural semantic predicate. The following are rough surface and deep structures of a Japanese example containing a negative particle:

J: *Hanako-wa gakko-e ik-a-nai*

*Hanako* school go Neg “Hanako does not go to school.”

(( HANAKO GAKKO IKU )<sub>S</sub> NAI )<sub>S</sub>

Other correlations such as Modal auxiliary—Infinitive, Aspect/tense—Infinitive, etc. in the VO languages and the reverse order in OV languages can also be accounted for as a natural consequence of the basic surface order of V and O in each language by assuming Modal auxiliary, Aspect/tense, etc. to be deep structural semantic predicates that take sentences as objects, where each such sentential object contains a surface main verb as its own main verb. Thus we see that in many ways the order of V and O plays a crucial determining role in many languages (There are a lot more interesting correlations, but since it is not our main concern to show these correlations, I will leave the matter as it is although I plan to come back to some of these later). Let us generalize a little and say that VO languages are *V Comp* (*Comp* = Complements) languages and that OV languages are *Comp V* languages. Thus O is one of the complements of a verb. Such a sense of complements is best seen in the following Japanese example, which is an OV language, hence *Comp V* language:

J: *Otoko-ga kado-ni tatte-iru*  
*man corner standing-be*  
 “A man is standing at the corner.”

Thus here the grammatical elements *otoko-ga*, and *kado-ni* are complements of a verb because they express, together with the verb, a certain complete proposition: the verb alone is not enough to express such a proposition.

3. Consider some of the movement processes in natural languages. Let us take *V Comp* languages like English and Carolinian for our illustrative examples:

<i>Extraposition:</i>	X	S	Y	
	1	2	3	—————>
	1	∅	3+2	

Both English and Carolinian have this process, which creates from the semi-underlying structure (i) the grammatical sentence (ii) below in each pair:

C: i.  $(u \ bwe \ le \ la)_S$  de:be  
 (you will go)<sub>S</sub> must

ii. de:be  $(u \ bwe \ le \ la)_S$  “You must go.”

E: a) i. (that Bill found the revolver in the drawer)<sub>S</sub> worried him  
 ii. it worried him (that Bill found the revolver in the drawer)<sub>S</sub>

b) i. (that people are fighting on the street)<sub>S</sub> seem  
 ii. it seems (that people are fighting on the street)<sub>S</sub>

<i>Subject Shift:</i>	NP	V	X	
	1	2	3	————→
	∅	2	3+l	Condition: Upward bounded.

This is a movement process in Carolinian, and it relates the following pair:

i. *Tom e mətekkei*

*Tom he fast*      “Tom is fast.”

ii. *e mətekkei Tom*

<i>Topicalization:</i>	X	NP	Y	
	1	2	3	————→
	2+l	∅	3	

(It could well be that the term 2 gets Chomsky-adjoined to the rest, but the point being made in this essay does not hinge upon the correctness of these alternatives.) This process is present in both Carolinian and English, and it relates the following pairs optionally:

C: i. *i rojorɔŋ tittilapp a:l John bwe e fusi sa:bwut we*

*I heard story of John that he like girl the*

“I heard the story of John<sub>i</sub> that he<sub>i</sub> likes the girl.”

ii. *sa:bwut we i rojorɔŋ tittilapp a:l John bwe e afusi*

“The girl, I heard the story of John<sub>i</sub> that he<sub>i</sub> likes.”

E: i. I don't think you'll be able to convince me Harry has ever tasted beans in his life.

ii. Beans I don't think you'll be able to convince me Harry has ever tasted in his life.

<i>Relative Clause Formation:</i>	(	X	NP	Y	) <sub>NP</sub>
	1	2	3		—————→
	2+1	ϕ	3		

(Again whether the adjunction is Chomsky-adjunction or not does not matter for our present discussion.) This is a process in Carolinian. Thus:

C: i. *Mary e-teitei tili:x ɳeli-i atta we*  
*Mary read book to boy the*  
 “Mary read the book to the boy.”

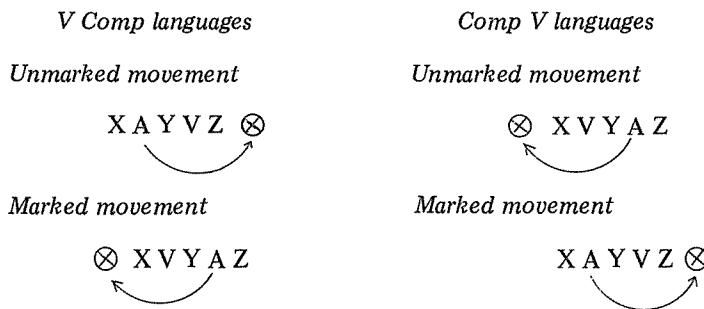
ii. *atta we Mary e-teitei tili:x ɳeli-i*  
 “the boy Mary read the book to”

English has a similar process; it only requires another identical NP that is coreferential with NP being relativized. (Acutually it is possible to formulate RCF without this additional NP much like Carolinian, but I will not go into this problem in this essay.) Thus RCF in English relates the following pair:

E: i. the book<sub>j</sub>(Mary read the book<sub>j</sub>)  
 ii. the book (which) Mary read

Observe now what the above four movement processes do on the entire structure. *Extraposition* and *Subject Shift* move a certain element to the right of the entire structure. *Topicalization* and *Relative Clause Formation* move an element to the left of the structure. Note here that in each case an element is being moved in such a way that it hops over a verb. Furthermore *Topicalization* and *Relative Clause Formation* are similar in that they are used to bring a certain NP to a focused position. And it seems that *Extraposition*

and *Subject Shift* create, roughly speaking, stylistically more readily acceptable sentences. It appears then that whether an element gets moved over a verb to a certain direction has associated with it a certain stylistic/semantic effect on the output. Let us say that the order *V Comp* is the most natural unmarked order in the VO language; and that the order *Comp V* is the most natural unmarked order in the OV language. Let us furthermore say that any word order that contradicts the unmarked order is a marked order. It is then possible to classify movement processes according to what kind of order it creates as a result of movement; let us say that a movement that creates a marked word order is a marked movement and that a movement that creates an unmarked order is an unmarked movement. These transformations may be schematically shown as follows:



(X, Y and Z are variables; A is a certain grammatical element; and V is a verb.) Note that two factors determine the marked/unmarked difference: 1) whether a movement that moves an element over a V moves it to the right or to the left; 2) whether the language such a movement appears in is a *V Comp* language or a *Comp V* language. The hypothesis, which receives partial justification from the language data given above and which I would like to

entertain here, is this: when marked movements are employed in a language, the resulting sentences would always have the effect of either a stylistically more marked reading (thus *Topicalization* and *Relative Clause Formation* require a special context where a certain NP is being paid attention to) or an illocutionarily more marked reading (cf. *Question Formation* in English and Carolinian which moves WH words to a sentence initial position.) Another equally interesting hypothesis that suggests itself from the above data is this: unmarked movements are never used for producing stylistically marked readings and illocutionarily marked readings, but they can have the opposite effect as in *Extraposition*, which produces a stylistically more natural, spontaneous sentence compared with the non-extraposed version. In what follows we will examine some of the implications of adopting such hypotheses.

4. Assume that English and Carolinian are underlyingly VSO languages and that Japanese is underlyingly an SOV language. Then this means that English and Carolinian must have the obligatory transformation of *Subjectivization*, and that Japanese has no such transformation since the surface word order of English and Carolinian is SVO while that of Japanese is SOV (Japanese can scramble NP complements before the verb so that a word order like OSV is possible, but these NPs stay before the verb). According to our definition, *Subjectivization* is a marked movement process since it moves NP over the verb to its left in *V Comp* languages. Thus:

E: GO HE SCHOOL

## ↓ *Subjectivization*

He goes to school

C: LA TOM GAKKO

↓  
*Subjectivalization*

Tom e-la gakko “Tom goes to school.”

J: TOM GAKKOO IKU

↓  
Tom-wa gakkoo-e iku

Notice while English and Carolinian require the person agreement of the subject on the following verb, Japanese does not have any such requirement. Thus, English has “goes” instead of “go” and Carolinian has “e-la” instead of “la.” Should the person of the subject differ, they take different forms. We may then be able to say that the marked status of the grammatical subject in these languages is due to the application of *Subjectivalization*, which is a marked movement process according to our definition. Since Japanese does not have any such marked movement that shifts a subject, it is not overtly marked by any grammatical device. The strongest claim one can make from these is that every grammatical subject that is obligatorily required to be moved by a marked movement process must be grammatically marked by some device. A language like Chinese, which has a surface order of SVO, is a counter-example to this claim, for it does not grammatically indicate any information about the subject. One might want to say that such a language has an underlying SVO order, but this would make the argument circular. It could be that such a feature is peculiar to an isolating language like Chinese. It is to be noted that we are not saying anything about a language that does not have *Subjectivalization* as an obligatory marked process; it may or may not mark the grammatical subject.

Clearly other considerations are necessary such as the grammatical hierarchy of Subject – Direct Object – Indirect Object – Oblique Nouns.

5. Consider now the strong correlation of the order of the head NP and the relative clause on the one hand and the order of *V Comp* on the other hand. Relative clause formation is a grammatical device to bring a certain NP into relief (In this sense it is similar to *Subjectivalization*). If we assume that the marked movement process is responsible for constructing the head NP – relative clause construction, then the surface order of the head NP and the relative clause is automatically accounted for. Such an analysis then does not assume any existence of the head NP at a deeper level. Thus relative clause constructions in English and Japanese would be derived in the following manner:

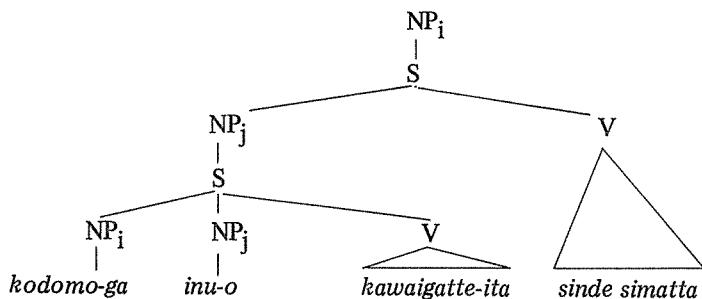
E: the man killed the woman  
↓  
Relative Clause Formation  
the woman (whom) the man killed

J: *sono otoko-ga sono onna-o korosita*  
*the man      the woman killed*  
↓  
Relative Clause Formation  
*sono otoko-ga korosita onna*  
“the woman the man killed”

This kind of analysis is not without its own problems. Thus Japanese Relativization quite freely violates Ross' constraints on movement transformations, suggesting that it is not a movement transformation:

J:  $( (kawaigatte-ita)_S inu-ga sinde simatta)_S kodomo$   
*was-fond-of      dog      died      child*  
?“the child who the dog (he) was fond of died”

Thus when the head *kodomo* is to be created, it must be moved out of the most deeply embedded S which is by now a part of the complex NP with the lexical head *inu*. One way to maintain both our analysis and Ross' movement constraints would be to make *Relative Clause Formation* a non-cyclic rule and derive the above structure from something like the following (The tree structure is based on the suggestions made in Jacobs (1975) as to the English relative clause constructions):



The simultaneous non-cyclic application of *Relative Clause Formation* moves both *kodomo* and *inu* out of the most deeply embedded clause and put them under the NP which is coreferential with the moved NP: This way no violation of Ross' movement constraints is made.

6. Although it is not very often pointed out in the literature, there exists in Japanese, particularly colloquial Japanese, a construction that may be

viewed equivalent in effect to English topicalization. Compare:

E: Beans I like best of all

J: *boku-wa daisuki-da, mame-ga*

*I like best beans*

Such a sentence in Japanese is very marked stylistically compared with the non-topicalized version, but it seems to me that such a sentence better reflects the stylistic effects the corresponding English sentence has. We may call such process as *Colloquial Topicalization*. The significant fact is again that such a movement is a marked movement in Japanese: it moves the NP over the V to the right. We can thus attribute the stylistically marked effect the above sentence has to the marked movement process that creates such a structure.

7. Further area of research may include the extension of marked vs. unmarked movement processes to those cases where elements are moved over any X in *Comp X* or *X Comp*, where X may range from V to N to P to . . . . Thus Ross' Complex NP Constraint might be viewed as a tendency of a language to inhibit marked movement processes. Or again the relative difficulty of moving NP that is an object of a preposition or a postposition compared with the moving of the entire prepositional or postpositional phrase might also be viewed as a tendency of a language to do away with marked movements. Another area of further research may be a comparison of our marked/unmarked movement processes with the grammatical relation changing rules. Our marked movement thus looks like a kind of a promotion rule.

But while marked/unmarked movements are defined according to whether the element being moved moves over a V or not, the grammatical relation changing rules are not so defined. Thus *Dative Movement* is a promotion rule while it is neither marked nor unmarked movement according to the definition given. The integration of the two kinds of rules is thus left as a future task.

*Reference:*

Jacobs, Roderick A. (1975). "Promotion and thematization processes in English, or how to get a head," in *Papers from the Parasession on Functionalism*. CLS 11.