

Word Order Typology of English and Japanese: The Direction of Syntactic Organization and a Common Structural Principle (2) The Direction of Syntactic Organization

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Word Order Typology of English and Japanese
 -The Direction of Syntactic Organization and a Common Structural Principle -
 (2) The Direction of Syntactic Organization

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4. The Direction of Syntactic Organization

4.0. The Position of the Head Recapitulated

In the preceding part of this paper, the position of the head has been determined for the various types of syntactic structures in English and Japanese.

In section 1, the word order in the basic sentence, the noun phrase, the verb phrase, the adverbial modification, and the adpositional phrase has been examined. In section 2, the word order in the derived sentences such as the interrogative, imperative and exclamatory sentences has been examined.

In section 3, the head-dependent relations in these structures have been discussed, and the positions of the heads determined. It has been demonstrated that in Japanese the head comes at the very end in all the structures and that Japanese is a perfectly head-postposing language. It has also been demonstrated that in English, in contrast, the head comes at the front in most of the structures. It comes at the front in the verb phrase, the adpositional phrase, and in all the derived sentences. In the noun phrase and the adverbial modification, the head can be preceded by some simple types of dependents, but it regularly precedes the other types of dependents, which are the majority. English is a predominantly head-preposing language.

The results obtained so far are summarized as Table 4. In each structure, the underlined part is the head, and the other parts are all dependents.

	ENGLISH					JAPANESE				
	HEAD					HEAD				
Figure 1' (Clause)	S	<u>V</u>	O			S	O			<u>V</u>
Figure 2' (Noun Phrase)	D/A	<u>N</u>				D/A/AP/AC				<u>N</u>
Figure 3' (Verb Phrase)		<u>V₁</u>	V ₂	V ₃	V ₄	V ₅	V			<u>V₁</u>
Figure 4' (Adverbial Mod.)	ADV	<u>H</u>	ADV/ADVP/ADVC			ADV/ADVP/ADVC				<u>H</u>
Figure 5' (Adpositional P.)	<u>PREP</u>		NP			NP				<u>POSTP</u>
Figure 6' (Yes/No Q.)		<u>Q</u>	SVO			SOV				<u>Q</u>
Figure 7' (Wh-Q.)		<u>WH+Q</u>	SVO			SOV				<u>Q</u>
Figure 8' (Imperative)		<u>IMP</u>	SVO			SOV				<u>IMP</u>
Figure 9' (Exclamatory)		<u>EXCL</u>	SVO			SOV				<u>EXCL</u>

Table 4. The Position of the Head in Syntactic Structures

4.1. The Direction of Syntactic Organization

In each of the structures in Table 4, the head is the essential element, and all the other elements are dependent on it. The syntactic function of the dependent elements is subsumed in the function of the head, and therefore the function of the whole structure becomes identical with that of the head. And this whole structure in its turn can enter into a larger structure by functioning as a dependent of the head of this larger structure.

In *that new desk*, for instance, *that* and *new* are dependent on *desk*, which is the head of the structure. The head is a noun, and the whole phrase is a noun phrase, and this can enter into a larger structure such as *on that new desk*. In this larger structure, the noun phrase *that new desk* is dependent on the preposition *on*. It can depend on the preposition by virtue of the function of *desk* as a noun. This new structure has a preposition as its head, and therefore can again enter into a still larger structure by virtue of the preposition *on*, which is the head, as in *lying on that new desk*. Or the prepositional phrase can enter into a noun phrase as in *the book on that new desk*. It now functions as an adjectival phrase dependent on the noun *book*, which is the head of this larger noun phrase.

This indicates that smaller structures are incorporated and organized into larger structures step by step by virtue of their head. We find here an organization of words into larger structures in the direction from dependents to heads, which can theoretically be repeated infinitely. Syntax can be viewed in general as a matter of cyclic organization of words in the direction from dependents to heads. This process of syntactic organization can be grasped in terms of "the direction of syntactic organization," and can be shown figuratively by a horizontal arrow as in: \rightarrow or \leftarrow .

In *that new desk*, for instance, the direction of syntactic organization is from left to right as in *that new desk*, because *desk* is the head. In *on that new desk*, on the other hand, the direction of syntactic organization is from right to left as in *on that new desk*, although within the dependent part *that new desk*, the direction remains from left to right as: \rightarrow . Strictly speaking, therefore, the syntactic organization should be diagrammed as:

on that new desk
 \leftarrow

In *lying on that new desk*, the main direction goes from right to left, because *lying* is the head of the phrase, although there are two sub-directions, one from left to right for the

noun phrase and the other from right to left for the prepositional phrase as in:

lying on that new desk
 ←←←←←

In *the book on that new desk*, the main direction is from left to right (from *the* to *book*), while containing three sub-directions as in:

the book on that new desk
 → ←←←←←

4.2. In the Noun Phrase

In the noun phrase, the noun is the head and the other elements like determiners, adjectives, adjectival phrases and adjectival clauses are all its dependents.

In the noun phrase in Japanese, all the dependents come before the head noun. The direction of syntactic organization is from left to right as in: →. The direction of syntactic organization in the Japanese noun phrase can be diagrammed as in: D/A/AP/AC → N.

In the noun phrase in English, dependents of simple structure like D and A come before the head noun, but others like AP and AC (with their head at the beginning) come after the head noun. Thus there are two opposite directions running in most noun phrases in English. There are two opposite forces working in them. This can be shown as in: D/A → N ← AP/AC.

The direction of syntactic organization in the noun phrase in Japanese and English can be contrastively shown as in Figure 2".

ENGLISH	JAPANESE
<u>D/A</u> → <u>N</u> ← <u>AP/AC</u>	<u>D/A AP/AC</u> → <u>N</u>

Figure 2". The Direction of Syntactic Organization
in the Noun Phrase

4.3. In the Verb Phrase

In the verb phrase, the finite element is the head of the structure, and the other elements are all its dependents whether they are auxiliaries or full verbs. In both English and Japanese, only one element is in the finite, and this is the head.

In English, the head of the verb phrase comes at the beginning. This element contains both tense and modality; that is, it is either in the present tense or past tense and either nodal assertion or non-nodal assertion. This finite part always comes at the beginning in the verb phrase in English. As the head is on the extreme left of the phrase, the direction of

syntactic organization is from right to left as in: $v_1 \ v_2 \ v_3 \ v_4 \ v_5 \ V$. To be more exact, the main verb V is directly dependent on v_5 , while this v_5 in its turn is dependent on v_4 . In a similar way, v_4 is dependent on v_3 , v_3 on v_2 , and finally v_2 on v_1 . In this way, the verb phrase elements are successively and cumulatively dependent on the one on their left until all the elements are ultimately dependent on the leftmost element v_1 , which is finite and is head of the whole verb phrase.

In Japanese, the head of the verb phrase comes at the end, at the rightmost position. All the other elements precede it, and they are successively dependent on the elements immediately following them. The direction of syntactic organization and dependency can be shown as in: $V \ v_5 \ v_4 \ v_3 \ v_2 \ v_1$.

The contrast between the English verb phrase and the Japanese verb phrase with regard to the direction of syntactic organization can be shown as in Figure 3".

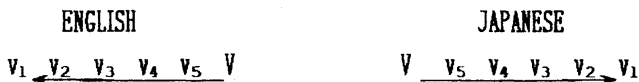


Figure 3". The Direction of Syntactic Organization
in the Verb Phrase

4.4. In the Adverbial Modification

In the adverbial modification, adverbials modify adjectives, adverbs or verbs. In this type of constructions, the adverbials are dependents and the others are heads. In Figures 4 and 4', these heads are represented by the symbol H .

In English, some adverbs can come before the head, but other adverbs and the other types of adverbial dependents come after the head. The direction of syntactic organization in the adverbial modification in English is therefore partly from left to right, and mostly from right to left. Two opposite directions are at work here, but the one from right to left is stronger.

This is in parallel with the situation we find for the noun phrase. The directions in the adverbial modification in English can be shown as in: $ADV \ H \ \underline{\rightarrow} \ ADV/ADVP/ADVC$.

In Japanese, on the other hand, all the adverbial modifiers precede the head. All the dependents come before the head. The direction of organization in the adverbial modification in Japanese is from left to right just as in the noun phrase and the verb phrase. This can be shown as in: $\underline{\rightarrow} \ ADV/ADVP/ADVC \ H$.

4.5. In the Adpositional Phrase

In the adpositional phrase, the adposition is the head, and the noun phrase is the dependent. The direction of syntactic organization is therefore from the noun phrase to the adposition.

In English, the adposition is the preposition, which is placed before the noun phrase. The direction therefore is from right to left, towards the direction of the preposition. This can be shown as in: PREP NP.

In Japanese, the postposition is used instead, which is placed after the noun phrase. The direction of syntactic organization in the Japanese adpositional phrase is therefore from left to right just as in the cases of the noun phrase, the verb phrase, and the adverbial modification. This can be shown as in: NP POSTP.

The direction of syntactic organization in the adpositional phrase in English and Japanese can be contrasted as in Figure 5".

ENGLISH	JAPANESE
<u>PREP NP</u>	<u>NP POSTP</u>

Figure 5". The Direction of Syntactic Organization
in the Adpositional Phrase

4.6. In the Derived Sentences

In the derived sentences like interrogative, imperative, and exclamatory sentences, the derived-sentence markers such as Q, IMP, and EXCL are the head, and the other constituents like S, V, and O are dependents. We have seen this in sections 3.6, and 4 above.

In the *yes-no* interrogative sentence, the question marker Q comes at the front before the clause structure SVO in English, while the Q comes at the end after the clause structure SOV in Japanese. The direction of syntactic organization in the interrogative sentence is from right to left in English while that in Japanese is from left to right as in Figure 6":

ENGLISH	JAPANESE
<u>Q SVO</u>	<u>SOV Q</u>

Figure 6". The Direction of Syntactic Organization
in the *Yes-No* Question

The direction is the same in the *wh*-interrogative sentence. In English the *wh*-question marker is at the front, and the clause element of the sentence is organized in the direction of this head *wh*-Q. In Japanese, *wh*-words can take variable places both in declarative and

interrogative sentences, and therefore *wh*-questions are marked as questions only with the question marker Q just as in the *yes-no* question. The direction of syntactic organization is the same as in the *yes-no* question.



Figure 7'. The Direction of Syntactic Organization
in the *Wh*-Interrogative Sentence

In the imperative sentence, the imperative marker is the head, and the clause part (SVO or SOV) is dependent on it. The direction of syntactic organization is from the clause element to the imperative marker. In English, the imperative marker comes before the clause structure, and in Japanese the imperative marker comes after the clause structure. The direction of syntactic organization in the two languages can be represented as in Figure 8'.



Figure 8'. The Direction of Syntactic Organization
in the Imperative Sentence

In the exclamatory sentence as well, the derived sentence marker EXCL is the head, and the clause part is the dependent. The direction of syntactic organization, which should always be from the dependent to the head, is from the clause part to the the head IMP in the exclamatory sentence.

In English the marker EXCL comes before the SVO, and in Japanese it comes after the clause SOV. The direction in English is from right to left, and that in Japanese is from left to right. The directions are just the same as in the interrogative sentence. These can be shown as in Figure 9'.



Figure 9'. The Direction of Syntactic Organization
in the Exclamatory Sentence

4.7. In the Basic Sentence or Clause

We have seen in section 3.2.6. that the head of the basic sentence, or rather clause, is V, and that the other elements, S and O, are its dependents. It seems that S and O do not have

any dependence relationship to each other. They are there in the sentence as dependents of V for their own respective functions. The direction of syntactic organization between O and V is from O to V and that between S and V is from S to V.

In English, where V precedes O but not S, there are two opposite directions at work. One is from O to V, which is from right to left as in most of the other phrases we have examined so far. The other one is from S to V, which is from left to right as is found in some cases in the noun phrase and adverbial modification. The two directions in the basic sentence in English can be shown as in $\underline{S} \rightarrow V \leftarrow O$.

In Japanese, on the other hand, there is just one direction of syntactic organization in the basic sentence just as in all the other structures. Both O and S go from left to right towards the position of V. Here we have just one straight line of syntactic dependency and organization, which is from left to right as in: $\underline{S} \ O \ \underline{V}$.

The direction of syntactic organization in the basic sentence in English and Japanese can be summarized as in Figure 1".



Figure 1". The Direction of Syntactic Organization
in the Basic Sentence or Clause

4.8. Summary of the Directions of Syntactic Organization

We have examined the direction of syntactic organization in the main syntactic structures in the form of the noun phrase, the adverbial modification, the verb phrase, the adpositional phrase, the basic sentence, and the interrogative sentence, the imperative sentence, and the exclamatory sentence.

We have seen that the direction of syntactic organization in Japanese is very straightforward, that it is perfectly uni-directional from left to right, from the beginning to the end of the structure as in: \longrightarrow . The directions are in perfect harmony across the different structures.

In English, the direction is from right to left in most of the cases as in: \longleftarrow . This is so in most of the noun phrases and adverbial modifications, and is regularly so in the verb phrase, the adpositional phrase and the derived sentences.

The direction of syntactic organization in English, however, is not completely uniform. It is not uni-directional. We find two directions at work in the noun phrase and the adverbial

modification. This double direction appears to be the basic characteristic of the English word order. This is symbolically seen in the clause structure SVO. Here we find two opposite directions at work as in: $S \rightarrow V \leftarrow O$. Most of the structures have the same direction as that in $V \leftarrow O$. However, some of the dependents in the noun phrase and adverbial modification have the same direction as that in $S \rightarrow V$.

We can summarize the directions of syntactic organization in the two languages as in Figure 12" below.

	ENGLISH	JAPANESE
	HEAD	HEAD
Figure 1" (Clause)	$S \rightarrow V \leftarrow O$	$S \leftarrow O \rightarrow V$
Figure 2" (Noun Phrase)	$D/A \rightarrow N \leftarrow AP/AC$	$D/A/AP/AC \rightarrow N$
Figure 3" (Verb Phrase)	$V_1 \leftarrow V_2 V_3 V_4 V_5 V$	$V \leftarrow V_5 V_4 V_3 V_2 \rightarrow V_1$
Figure 4" (Adverbial Mod.)	$ADV \rightarrow H \leftarrow ADV/ADVP/ADVC$	$ADV/ADVP/ADVC \rightarrow H$
Figure 5" (Adposit. P.)	$PREP \leftarrow NP$	$NP \rightarrow POSTP$
Figure 6" (Yes/No Q)	$Q \leftarrow SVO$	$SOV \rightarrow Q$
Figure 7" (Wh-Q)	$WH+Q \leftarrow SVO$	$SOV \rightarrow Q$
Figure 8" (Imperative)	$IMP \leftarrow SVO$	$SOV \rightarrow IMP$
Figure 9" (Exclamatory)	$EXCL \leftarrow SVO$	$SOV \rightarrow EXCL$

Table 5. The Direction of Syntactic Organization
in the Clause, Phrases, and Sentences in English and Japanese

5.1. The Head-Dependent Relationship and Syntactic Hierarchy

5.1.1. The Function of the Head

The structures set out in Figures 2" through 5" in Table 5 above are all phrases, and they function as part of the basic sentence (or clause). They function in this way by virtue of the head element of the structure. A noun phrase with its noun as head can be combined with a preposition, for instance, and become dependent on it, thus forming a prepositional phrase. This prepositional phrase can combine with a noun phrase by functioning as an adjectival phrase, producing a larger noun phrase. Or it can combine with a full verb in a verb phrase by functioning as an adverbial modifier, forming a larger verb phrase. It can do this by virtue

of the preposition, which is its head.

Smaller phrases thus enter into larger phrases by virtue of their head word, forming more and more complex structures until they finally form essential elements of the clause S, V, and O. Some phrases enter into S, others into O, and still others become part of V. Formation of more and more complex structures is none other than for the sake of forming the unit clause, or the basic sentence. This successive building up of larger structures is made possible through the head of each structure.

In the derived sentences, the clause becomes part of the structure, and is dependent on the derived-sentence marker Q, IMP, or EXCL.

5.1.2. Syntactic Hierarchy

There is thus a hierarchy among the structures which successively combine to form larger structures by way of head-dependent relationship. This hierarchy in English can be shown diagrammatically as in Table 6.

The vertical arrows going out of one structure and entering into another in Table 6 show how a given structure enters into another as one of its dependents. The horizontal arrow under each structure indicates the direction of syntactic organization within the structure, as defined in section 4.

Beginning with the bottom of the figure, a prepositional phrase with a preposition as head can enter into a number of different structures. It can enter into a structure of adverbial modification with an adjective as its head as in the structure (2) of Figure 4". This is shown by the far-left vertical arrow leading from the structure [PREP NP]. This structure functions as an adverbial phrase modifying an adjective in (2).

The prepositional phrase can also enter into a structure of adverbial modification with an adverb as its head, as shown by the structure (4) of Figure 4". It functions there as an adverbial phrase again.

The same prepositional phrase can enter into still another kind of adverbial modification. This time it has a main verb as its head. It functions there as an adverbial phrase modifying a main verb. This functioning is shown by the arrow leading into the structure (3) of Figure 4".

The fourth arrow leading from Figure 5" shows how a prepositional phrase can function in a noun phrase. It can function as an adjectival phrase as shown in Figure 2".

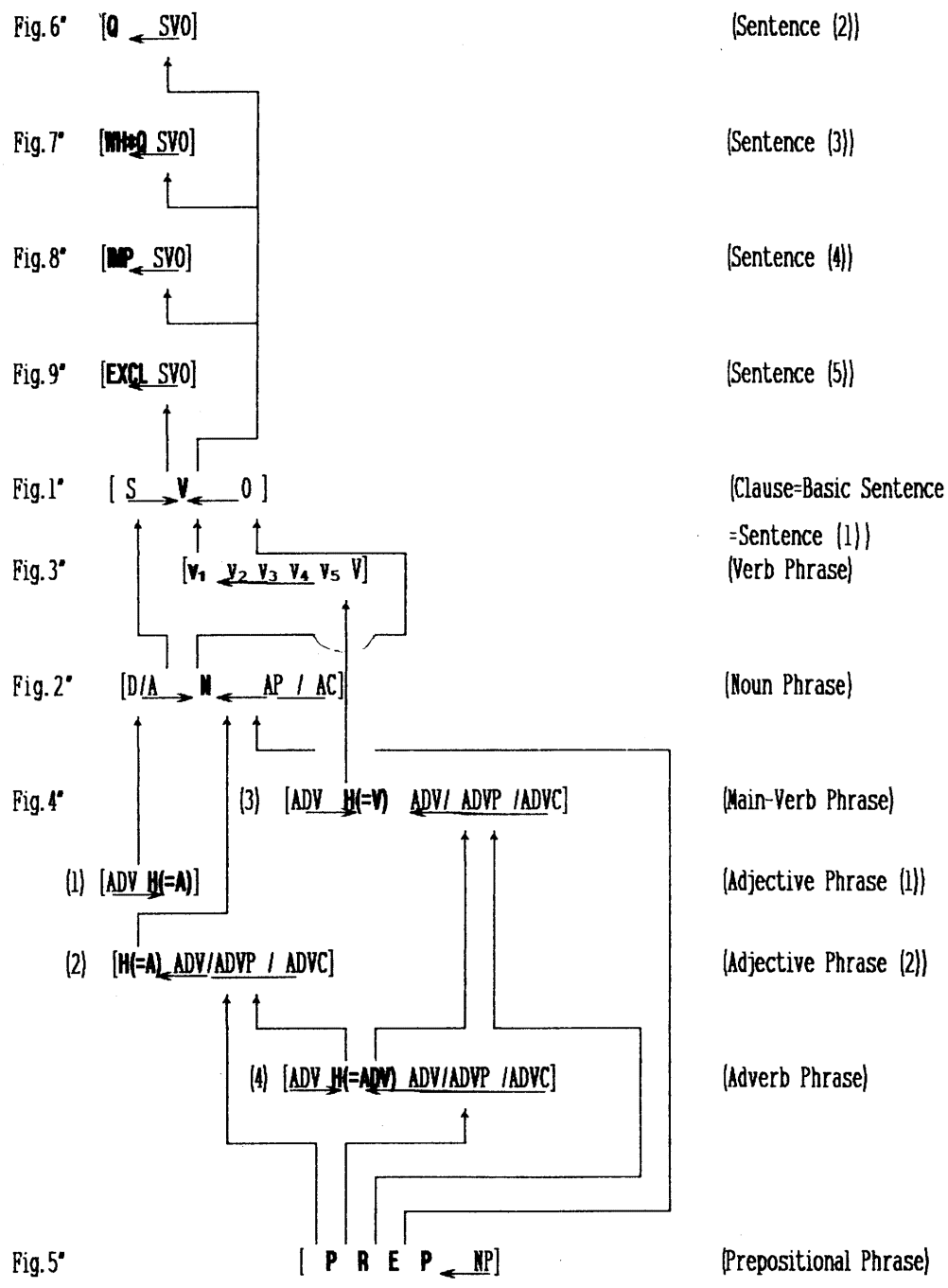


Table 6. The Hierarchy of Syntactic Structures in English

5.1.2.1. The structures of adverbial modification contained in Figure 4" are those headed by an adjective, an adverb, or a main verb. They can therefore function as an adjective or adjectival phrase, as an adverbial phrase, or as a main-verb phrase. The structure (2), with an adjective as its head followed by adverbials, can enter into a noun phrase in Figure 2" and function there as an adjectival phrase. The structure (4), with an adverb with it head, can function as an adverbial modifier. It can therefore enter into the structure (2), where it modifies an adjective. It can however also enter into a structure with a main verb as its head, i.e. the structure (3) of Figure 4", and function there as a modifier of a main verb. This larger structure, consisting of a main verb and its adverbial modifiers, can enter into a predicate verb phrase in Figure 3", which functions as V of SVO.

The structure (1) in Figure 4" represents the cases where an adjective as head of the structure is modified by one or more than one adverb preceding it. This type of structure is called "adjective phrase" in section 1.2.2. And it has been noted that it has its head at the end, and that it can be placed before a noun in such a way that the head of the modifier can stand side by side with the head of the noun phrase. This is shown by the line leading from this structure and entering into AP in the noun phrase in Figure 2".

5.1.2.2. The noun phrase in Figure 2" can enter into the clause structure in Figure 1". It can enter into the clause structure by functioning there as S or O. The noun phrase of the same structure can be used either as S or O in English. There is no reason to differentiate between the kind of noun which functions as S and the kind which functions as O as far as their syntactic structures are concerned. Noun phrases themselves have no formal marker to tell which of them can function as S and which as O, as observed in section 3.2.6. above.

5.1.2.3. The structure in Figure 3" has been called "verb phrase" so far, but it should rather be called "finite-verb phrase" in contrast with the so-called "main-verb phrase." It can contain a finite auxiliary verb, v_1 , or it can be just one finite full verb. This predicate-verb phrase enters into the SVO structure as the unit clause in English. It functions as V in the SVO structure solely by virtue of its finite element, which is the head. And this V governs both S and O to form the clause.

5.1.2.4. The clause structure in Figure 1" can enter into a unit above it. It can be a declarative sentence by itself, or it can be combined with a question marker to form an interrogative sentence, or with an imperative marker to form an imperative sentence, or with an exclamation marker to form an exclamatory sentence. The clause structure SVO becomes dependent on one of these markers, and form a sentence which typically functions as a question, command, or exclamation in discourse.

5.1.3. The Four Ranks of Phrase

Let us now review Table 6 from the top down to the bottom.

The structures in Figures 6" through 9" are sentences, which we have called "derived sentences" in contrast with the basic sentence. They are exponents of the unit sentence, which is the highest unit in syntax.

Next comes the structure in Figure 1". This is the unit clause. The structure SV0 is the minimum essentials of the clause structure. This is the unit one rank below the sentence.

We now come to the units which make up the clause. They are phrases. As long as we have two noun phrases and one finite-verb phrase, we are able to construct a clause. The noun phrases and the finite-verb phrase are the primary material for making sentences. We can call them "primary" constituents of the clause.

The adjective phrases and adjectival phrases are materials for making noun phrases. Main-verb phrases are materials which help make finite-verb phrases (or predicate-verb phrases). These phrases are thus materials for making up primary phrases. We can call them "secondary" phrases.

The adverbial phrases, which can be used to modify adjectival phrases and main-verb phrases, are next to the secondary phrases in rank. We can call them "tertiary" phrases. Some tertiary (adverbial) phrases can also function as modifiers of other tertiary (adverbial) phrases.

Prepositional phrases can function as adjectival phrases or adverbial phrases by modifying noun phrases or verb phrases. On this point they are equivalent to adjectival phrases as secondary phrases and adverbial phrases as tertiary phrases. However, they can also function as modifiers of adjectival phrases and main-verb phrases, which means that they can function as modifiers of tertiary phrases as well. In this sense, prepositional phrases are below the tertiary phrases in rank, and should be regarded as fourth-order phrases.

We have thus four different ranks of phrases — primary, secondary, tertiary and fourth-order phrases. Phrases of lower ranks enter into those of higher ranks by virtue of their head. This syntactic organization is repeated until it reaches the rank of clause.

However, these different types of structures are not rigidly ranked in scale. Just as a noun phrase can contain a prepositional phrase, a prepositional phrase can contain a noun phrase. A prepositional phrase can be dependent on a noun, and likewise a noun phrase can be dependent on a preposition. Here we have cases of mutual embedding.

Moreover, a noun phrase can contain a clause as one of its dependents as shown by the symbol AC in Figure 2". And this noun phrase can be the NP part of the prepositional phrase in Figure 5". Indeed, the clause structure as in Figure 1" can be part of any one of the structures (2), (3) and (4) of Figure 4", and part of the structure in Figure 2", and hence of the clause structure in Figure 1". And this clause structure can of course get down to the bottom again into the prepositional structure in Figure 5". Phrases can be part of clauses, and clauses can be part of phrases. We have a rankshift here, and this produces the theoretical possibility of infinite complexity of syntactic structure.

However, rankshift is not an end in itself, but merely a means of forming more and more complex clause structures. Clauses can be part of prepositional phrases, for instance, but this forming of clause-containing prepositional phrases is not an end in itself, because these complex prepositional phrases are again made into part of a clause. The ultimate aim of constructing various phrases in syntactic organization is to form clauses and sentences of various degrees of complexity. The different types of phrases we have distinguished above are thus ranked on a scale from the lower places to higher places in a hierarchy of dependency as in Table 7.

- (1) Primary Phrases : Noun Phrases & Finite-Verb Phrases
- (2) Secondary Phrases : Adjective Phrases, Adjectival Phrases & Main-Verb Phrases
- (3) Tertiary Phrases : Adverbial Phrases
- (4) Fourth-Order Phrases: Prepositional Phrases

Table 7. Four Ranks of Phrases in English

5.2. A Structural Principle

5.2.1. The Direction of Syntactic Organization

We have seen in section 4 that each syntactic structure is organized in the direction from the dependent constituent to the head constituent. We have confirmed that the direction in Japanese is regularly from left to right as in: \longrightarrow . We have also seen that in English the direction is from right to left in most cases as in: \longleftarrow , although in other cases the direction is the opposite as in: \longrightarrow . These directions have been set out in Table 5.

More specifically, the table shows that in Japanese the direction in the noun phrase (Figure 2"), the finite verb phrase (Figure 3"), the adverbial modification (Figure 4") and the postpositional phrase (Figure 5") is the same as the direction in the clause (Figure 1").

In the case of English, the situation is rather complex. In the finite-verb phrase (Figure 3") and the prepositional phrase (Figure 5"), the direction is from right to left. In the noun phrase and the adverbial modification, on the other hand, we find two opposite directions co-existent in the same phrase. While most of the dependents have the direction from right to left (\leftarrow) as in the cases of the finite-verb phrase and the prepositional phrase, other dependents have the opposite direction (\rightarrow).

Thus the dominant or major direction in English is the same as that from O to V in the clause (\leftarrow), while the minor direction is the same as that from S to V: (\rightarrow).

5.2.2. The Ranks of Syntactic Organization

We have seen in sections 5.1.3 that the phrase is lower than the clause in rank, and that various phrases play their syntactic roles by entering into the structures higher in rank. Phrases are essentially there in syntax for the sole and ultimate purpose of forming clauses and sentences by being organized into structures of upper ranks.

This upward syntactic movement is shown by the vertical arrows in Table 7, in contrast to the horizontal arrows, which show the direction of syntactic organization within a structure.

The vertical arrows show the direction in which structures of lower ranks go into those of upper ranks.

5.2.3. The Direction of Syntactic Organization and the Rank

Phrases exist for the sake of forming more complex phrases and clauses. Phrases obtain their syntactic value by being organized into structures of upper ranks. Phrases of upper ranks contain phrases of lower ranks, each of which has its own direction of syntactic organization. Therefore they contain a composite of directions, which may or may not be in the same directions.

The identity or difference of the directions of syntactic organization within a given phrase must have a considerable importance in syntax. There should be a considerable difference in effect between the type of structure where all the directions are the same and the type where the directions are different. The former type would be much easier for the mind to process than the latter, because in the former type the mind can continue to follow the same direction all the way through without switching back and forth. It can be presumed therefore that languages tend to favour the former type.

5.2.4. A Structural Principle

5.2.4.1. Phrase Follows Clause

The structural principle which can be observed in the syntax of English and Japanese, and presumably in all languages, is that the direction of syntactic organization in the phrases tends to take the same as in the clause.

This principle is perfectly observed in Japanese. In all the phrases the direction is from left to right, and this is the same as in the clause, which is the basic sentence. Because the head V of the clause is placed at the end, the direction of syntactic organization in the clause is from left to right, and accordingly the direction in the phrases, which are lower in rank, should also be from left to right. Japanese follows this principle faithfully. Moreover, it carries over the principle to the derived sentences as well. The direction of syntactic organization in the interrogative, imperative, and exclamatory sentences is the same as in the clause. The clause occupies the central position in syntactic organization, and the direction of organization in this structure is copied by the lower ranks (phrases) and by the upper rank (sentences) as well. Phrases follow the clause, and sentences follow the clause. The central unit of syntactic organization is the clause, and therefore it is convenient to have the same direction in the phrases and sentences as in the clause. This is the principle of syntactic organization followed by Japanese.

In English, on the other hand, there are two opposite directions in the central unit clause itself. The one is from O to V ($V \leftarrow O$) and the other from S to V ($S \rightarrow V$). The direction of syntactic organization in the phrases mostly follows the one from O to V. This is from right to left as in: \leftarrow . In other cases, however, the direction follows the one between S and V. This is from left to right as in: \rightarrow .

English is a language which is more inclined to have the direction from right to left. The head V, or rather the finite v, governs a lot of dependents. It does not only take an object. It often takes two objects, or a complement, or an object and a complement, together with various adverbial modifiers. The relation between V and the dependents following it is much heavier than the relation between S and V. This suggests that the direction, or pull, from right to left, is much stronger than the direction from left to right. Therefore, it is more natural for the phrases to follow the stronger right-to-left direction as they enter into the clause structure.

However, the other direction is still at work in the clause, and accordingly some phrases such as the noun phrase and the structures of adverbial modification allow this reverse

direction within their structures when their constituents are simple in structure. This is the structural principle followed by English as an SVO language. Most of the European languages have adopted the same principle, but perhaps to a lesser extent than English.

The major direction of syntactic organization in the clause is from right to left as: \leftarrow , and the minor one is from left to right as: \rightarrow . In the units of lower ranks likewise, major direction is \leftarrow , and the minor one is \rightarrow .

This use of two directions -- the stronger right-to-left direction (\leftarrow) and the weaker left-to-right direction (\rightarrow) -- can be regarded as a structural principle adopted by English and perhaps by other SVO languages as well. The Japanese language, on the other hand, sticks to just one direction.

5.2.4.2. A Common Structural Principle

Although English and Japanese have different word orders and therefore appear to follow different structural principles, they actually follow a common structural principle at its basis. The apparent differences result from the fact that they follow a common principle.

This common principle can perhaps be stated as a general structural principle of language as in the following: "The constituents in the clause are organized in the direction of V. Those in the phrases also are organized in the same direction as in the clause. If there are two opposite directions in the clause because V is between S and O, the one from O to V is stronger, and the constituents in the phrases mostly follow the stronger direction and partly follow the weaker one."

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