

Chapter 4

Linguistic typology

4.1 Introduction

Simply speaking, the study of universals is concerned with what human languages have in common, while the study of typology deals with ways in which languages differ from each other. This contrast, however, is not sharp. When languages differ from each other, the variation is not random, but subject to limitations. Linguistic typology is not only concerned with variation, but also with the limitations on the degree of variation found in the languages of the world. It is due to these limitations that languages may be meaningfully divided into various types.

For instance, typologists often divide languages into types according to so-called **basic word order**, often understood as the order of subject (S), object (O) and verb (V) in a typical declarative sentence. The vast majority of the languages of the world fall into one of three groups:

- SOV (Japanese, Tamil, Turkish etc.)
- SVO (Fula, Chinese, English etc.)
- VSO (Arabic, Tongan, Welsh etc.)

Logically speaking, there should be nothing wrong with the three other possibilities: VOS, OVS and OSV. As mentioned above, however, they are exceedingly rare and typically occur in areas that have been relatively isolated. The three main groups have one thing in common, that the subject precedes the object. It is a small step, therefore, from basic word order typology to the formulation of the statistical universal we became acquainted with in the previous chapter:

Subjects tend strongly to precede objects.

The study of typology and the study of universals, therefore, go hand in hand.

In this chapter, we will have a look at morphological typology, word order typology, the typology of motion verbs, and the typological distinction between tone languages and stress languages. These are only a few examples of the large amount of phenomena that may be studied from a typological viewpoint.

First, however, we shall discuss a little further what typology is, and what it is not.

4.1.1 Partial vs. holistic typology

The scope of typological comparison is not languages in their entirety, but specific phenomena in the languages compared. When we say that Turkish is an SOV language and English an SVO language, this represents no more than a comparison of a very small part of the grammars of Turkish and English, the part that dictates the ordering of subject, object and verb. In other words, typological comparison is partial rather than holistic.

In the 19th century, it was widely believed that one could reach the goal of a holistic typology. Languages were likened to biological organisms, and just as one sought to reconstruct the entire skeleton of an animal on the basis of a fossil jaw, so one sought to derive insight into an entire language based on the knowledge of a small part of it. Since it was widely believed that language was an expression of the "spirit" of a nation or a culture, many thought that typological knowledge could provide insight into this "spirit".

In non-scholarly circles, it is still quite common to believe that there is a connection between language and "spirit". For instance, the relatively strict and complex rules of German grammar are often seen as an expression of German discipline and rule of law, while the comparative lack of strict grammatical rules in Chinese is seen as an expression of Chinese flexibility and pragmatism. This kind of "folk typology" enjoys little support among scholars.

4.1.2 Power of generalization

When told that Turkish is an SOV language, we might yawn and ask: "So what?" If typological comparison is partial rather than holistic, what makes the fact that Turkish is an SOV language any more interesting than, say, the fact that the Turkish word for 'house' is *ev*?

The answer is threefold:

First, basic word order has to do with structure, not just individual lexical items. Therefore, once you know that Turkish is an SOV language, you know something that will help you understand (and possibly produce) a large proportion of all Turkish sentences. The knowledge of *ev*, on the other hand, only helps you understand (or produce) the very small minority of sentences that contains the word for 'house'.

Second, a typology based on basic word order divides the vast majority of the world's languages into only three types. In contrast, a typology based on the word for 'house' would be meaningless, since all languages would probably have different words for 'house', unless they are related or have influenced each other or are similar by pure coincidence.

Third, it has been shown that languages with an SOV structure also tend to share a number of other properties. For instance, they tend to have postpositions (similar to English *ward* in *home-ward*) rather than prepositions (like English *toward* in *toward home*). Thus, by saying that Turkish is an SOV language, we have also said that it probably has postpositions rather than prepositions, and that it shares many other characteristics typical of SOV languages, such as auxiliary verbs that follow the main verb, and adjectives, genitives and relative clauses that precede the noun. In

contrast, saying that the Turkish word for 'house' is *ev* has no implications for any other part of the language.¹

We may possibly add a fourth point. As we saw in the previous chapter, the ordering of elements in a sentence reflects strong universal tendencies regarding the ordering of information in the speech flow. For instance, since the prototypical subject is an agent, the fact that the subject precedes the object in almost all languages reflects the tendency for agents to precede patients. We know less about what motivates the ordering of verb and object. Does placing the object before the verb (as in SOV languages) reflect a fundamentally different way of ordering information in the speech flow than placing the verb before the object (as in SVO and VSO languages)? In other words, do differences in basic word order reflect - and stimulate - different ways of thinking? We do not know, but it is at least more likely that the Turkish SOV word order is linked to fundamental ways of thinking or processing information than the fact that the Turkish word for 'house' is *ev*.

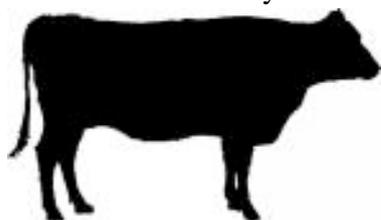
These three or possibly four points show us that the fact of Turkish being an SOV language is a piece of information with a much higher power of generalization than the fact of Turkish using the form *ev* to denote 'house'. In linguistic typology, we are primarily looking for linguistic variation with a high power of generalization. The fact that Turkish uses the form *ev* where English uses the form *house* does not make Turkish into a language of the *ev* type and English a language of the *house* type. It is quite common, however, to refer to Turkish as a language of the SOV type, and English as a language of the SVO type. The SOV status of Turkish is not an isolated fact, but is closely connected with a number of other characteristics of Turkish grammar.

Although typological comparison is not holistic in the sense of 19th-century linguists, therefore, it still makes sense to say that it moves from the more partial towards the more holistic.

4.1.3 Anthropological vs. typological significance

We have all heard about the incredible number of words for 'snow' in the language of the Eskimos. Some say 20, others 100, still others more than 200. It would have been a nice way to illustrate how fine distinctions within a certain semantic domain reflects the interests and the environment of those who speak a language—if it were only true! Unfortunately, it is just a rumour, though the rumour was widely believed even among linguists until Geoffrey Pullum called the bluff in an article called "The Great Eskimo Vocabulary Hoax". In fact, Pullum tentatively concludes, Eskimo seems to have only two distinct word roots for 'snow'. Even if it were true that Eskimo had so many words for 'snow', this would hardly matter much to students of linguistic typology. Let us use a real example to explain why.

The Fula language of West Africa has an incredible number of words for cattle. One small dictionary lists no less than 82 words, including *guddiri* 'bull without a tail',



wudde 'cow without a tail', *jaabuye* 'cow with a large navel', *lelwaaye* 'cattle with eyes like a gazelle', *gerlaaye* 'cattle that is like a bush-fowl', *happuye* 'cow in milk after her calf has died', *mbutuye* 'cow whose calf has been killed so that she may be fattened', and other useful terms. A number of different types of

¹ Though see 3.2.2 for some implications concerning phonotactical structure.

cattle are distinguished by their horns: *elliinge* 'cattle with upright horns', *gajje* 'cattle with horns twisted back' (also called *mooro*), *hippe* 'cattle with horns drooping forward', *hogole* 'cattle with horns almost meeting', *lettooye* 'cattle with one horn up and the other drooping', *wijaaye* 'cattle with horns drooping towards the ears', *tolle* 'cow with one horn', and *wumale* 'cow without horns'.

The high number of words for 'cattle' in Fula is of great **anthropological significance**, since it reflects the central position of herdsmanship as a way of living in many Fula societies. Fula herdsmen possess a highly specialized knowledge for which they need a highly specialized terminology similar to the **technical terms** found in any profession.

However, the **typological significance** of the many fine distinctions between different kinds of cattle is very limited, since they scarcely affect the underlying structure of the language. A Fula person who lives in the city without any contact with traditional herdsmanship may grow up speaking the language perfectly, but with very scant knowledge of its vast vocabulary for cattle. The situation is similar to that of technical terminology in any society.

Another type of specialized vocabulary that is of high anthropological interest, but of limited typological interest is the field of **kinship terms**. They reflect the social organization of the family and the clan. For instance, the English word *cousin* corresponds to eight different words in Chinese:

tánggē 'elder male paternal cousin'
tángdì 'younger male paternal cousin'
tángjiě 'elder female paternal cousin'
tángmèi 'younger female paternal cousin'
biǎogē 'elder male maternal cousin'
biǎodì 'younger male maternal cousin'
biǎojiě 'elder female maternal cousin'
biǎomèi 'younger female maternal cousin'

Thus, Chinese divides the semantic domain represented by the single English word *cousin* into eight based on gender (male vs. female), relative age (elder vs. younger), and whether or not there is at least one female link between the cousins (paternal vs. maternal). The distinctions are important. In some Chinese societies, for instance, maternal cousins can marry (because they have different family names), while any sexual relation between paternal cousins would be condemned as incestuous (because they have the same family name). Just as English has no word for the eight concepts involved in the Chinese terminology, Chinese has no word for the general concept 'cousin'.

Again, however, this is of little typological interest, since the presence or absence of certain kinship terms has little to do with the underlying structure of the language. Like technical vocabulary, kinship terms may come and go without affecting the language as a whole. A young and modern Chinese city dweller will be much less likely than an old and traditional country woman to know such specialized vocabulary as, for instance, *chóngsūnxí* 'great-granddaughter-in-law'.

In general, therefore, the existence of specialized vocabulary, whether technical terminology or, for instance, kinship terms, has great anthropological significance, but little typological significance.

4.2 Morphological typology

Grammatical expression of meaning may happen in a number of different ways, as exemplified by the various methods of expressing the distinction between singular and plural in the nouns of different languages:²

1. No expression: Japanese *hito* 'person', pl. *hito*
2. Function word: Tagalog *bato* 'stone', pl. *mga bato*
3. Affixation: Turkish *ev* 'house', pl. *ev-ler*; Swahili *m-toto* 'child', pl. *wa-toto*
4. Sound change: English *man*, pl. *men*; Arabic *rajulun* 'man', pl. *rijālun*
5. Reduplication: Malay *anak* 'child', pl. *anak-anak*

The most important typological distinction is between the types 1-2, where each word consists of only one morpheme, and types 3-5, where a word often consists of more than one morpheme.

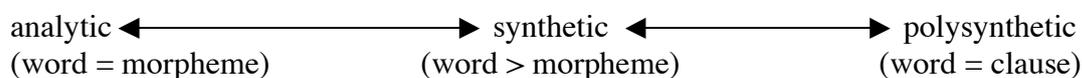
4.2.1 Analytic vs. synthetic languages

Languages in which a word tends to consist of only one morpheme are called **analytic** (or isolating). Highly analytic languages are primarily found in East and Southeast Asia (e.g. Chinese, Vietnamese), as well as West Africa (e.g. Yoruba) and South Africa (e.g. !Kung [also known as Kung-ekoka or !Xū]). These languages have no inflection, and the most extreme ones make limited use of processes of word-formation.

Languages in which a word tends to consist of more than one morpheme are called **synthetic**. English is a mildly synthetic language, while older Indo-European languages, like Latin, Greek and Sanskrit, are highly synthetic. All of them have plenty of inflection, derivation and compounding.

Extremely synthetic languages, where words are very complex and sometimes constitute entire clauses, with extensive use of inflection, derivation and compounding, are called **polysynthetic**. Polysynthetic languages are primarily found among Eskimo and American Indian languages, as well as a few languages in Sibir, Northern Caucasus and Australia.

Theoretically speaking, languages may locate themselves at any point on the scale from analytic to polysynthetic:



In fact, however, no language is purely analytic or purely polysynthetic. Furthermore, different parts of the grammar may behave in different ways. Japanese, for instance, is analytic in having no noun inflection, but highly synthetic in having a complex system of verb inflection.

Consider the contrast between the following two translations of the English sentence 'If you wait for me, I will go with you':

² In addition, the Number distinction in the noun may be expressed in the form of nearby verbs or adjectives, cf. English *the man goes* vs. *the men go*.

(?) 'If you wait for me, I will go with you' in Chinese and Inuktitut

(?a) Chinese: nǐ děng wǒ, wǒ jiù gēn nǐ qù.
2SG wait 1SG 1SG then with 2SG go

(?b) Eskimo:³ Utaqi-gu-vi- nga, aulla-qati- gi- niaq- pa- git
wait if 2SG 1SG go partner have future assertion 1SG/2SG

The Chinese sentence consists of eight words, each word corresponding to one morpheme. In Eskimo (more properly called Inuktitut), however, the same sentence consists of only two words, *utaqiguinga* and *aullaqatiginiaqpagit*, each corresponding to a full clause with 4-5 morphemes. These example sentences are more extreme than what is common. In Chinese, there are in fact many compound words, as well as words containing derivational affixes. And in Eskimo, a clause often consists of more than one word. The clearest contrast is between the lack of inflection in analytic languages like Chinese vs. the widespread use of inflection in Eskimo.

4.2.2 Agglutinative vs. flective languages

Synthetic and polysynthetic languages may be further divided into **agglutinative** and **flective** languages. In the ideal case, an agglutinative language is a synthetic or a polysynthetic language where there is a one-to-one correspondence between meaning and form. Consider, for instance, the ablative plural of the Turkish word *ev* 'house':

ev- ler-den
house PL ABL

The root *ev* means 'house', the suffix *-ler* marks the plural and the suffix *-den* marks the ablative case.

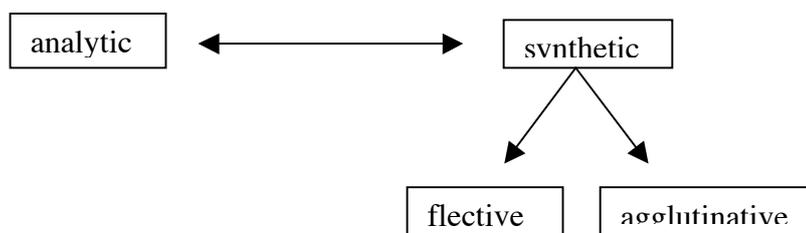
In an almost ideal case like Turkish, agglutinative languages exhibit all of the following three properties (while flective languages exhibit the opposite properties):

1. Each morpheme expresses only one meaning element. This is the opposite of **cumulation**, where each morpheme expresses more than one meaning element, such as in modern Greek *yráfete* 'was being written', where the suffix *-ete* expresses five different meaning elements: 3rd person, singular, passive voice, durative and past tense.
2. There is a clear-cut boundary between each morpheme. The opposite is known as **fusion**, as in East Norwegian past participle [sva:t] 'answered', where the verb root [sva:r] is combined with the suffix [t], but where [r] + [t] becomes [t] by phonological rule, fusing the two morphemes together.
3. Grammatical processes are expressed through prefixes or suffixes and do not affect the form of the individual morphemes. This is the opposite of **introflexion**, as in the English plural *men* of *man*, or the Arabic plural *rijālun* of *rajulun* 'man'.

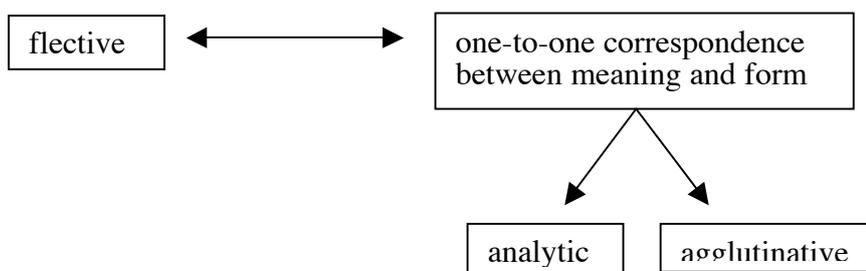
³ See <http://web.hku.hk/~althea/inuktitut.html>.

In principle, these properties are independent of each other, and many languages exhibit only one or two of them. Languages with cumulation, however, also usually have both fusion and intoflection and thus constitute the most typical cases of flective languages.

In many ways, agglutinative languages constitute an in-between case between flective and analytic languages. They resemble flective languages in often having more than one morpheme per word, i.e. in being synthetic:



However, they share the one-to-one correspondence between meaning and form with analytic languages:

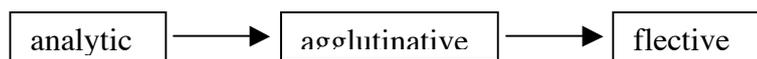


Note also that the affixes of agglutinative languages tend to be more independent than the affixes of flective languages. For instance, the Turkish plural suffix *-lar* (or *-ler*) sometimes applies not only to single words, but to whole phrases:

bayan ve bay-lar
 lady and gentleman-PL
 'ladies and gentlemen'

The distinction between such affixes and separate function words is not always easy to draw.

Historically, flective morphology is usually derived from agglutinative morphology, which in turn is derived from the analytic use of function words:



This does not mean, however, that analytic languages are more "primitive" than flective languages. In fact, many Indo-European languages, including English, have long been in the process of becoming more analytic, discarding most of the complex flective morphology of earlier historical stages.

4.2.3 Typical features of analytic languages

As mentioned above, analytic languages are found in three separate parts of the world: East and Southeast Asia, West Africa, and South Africa. Although comparisons of the languages of these three areas have hardly ever been conducted, it seems that they tend to share a number of linguistic features:

1. Predominantly monosyllabic morphemes (and sometimes words)
2. Extensive use of tonemes
3. Extensive use of function words
4. Relatively fixed word order
5. Less rigid grammatical rules

Although each of these features may occur in synthetic languages as well, the fact that analytic languages tend to share all five features may be explained functionally:

1. When one word represents only one meaning element, complex meanings require a larger number of words, so polysyllabic words or morphemes would reduce efficiency dramatically. This may explain why morphemes, and sometimes words, are predominantly monosyllabic.
2. When words or morphemes are monosyllabic, they are less easily distinguished by means of segmental phonemes alone. This may explain why tonemes are used.
- 3 and 4. In a language without inflection, function words and fixed word order carry some of the information that is taken care of by inflection in synthetic languages.
5. The rigidity of inflectional paradigms in synthetic languages (especially those of the flective type) creates a much more tightly woven grammatical structure than the (often optional) use of function words in analytic languages.

Point 2 tells us that the **functional load** carried by word length in many synthetic languages tends to be carried by tonemes in analytic languages. Points 3 and 4 tell us that the functional load carried by inflection in synthetic languages tends to be carried by function words and fixed word order in analytic languages.

As an example of a language with less rigid grammatical rules, consider the following facts about Chinese:

1. It has no inflection.
2. Subject and object are often optional.
3. Function words are often optional.
4. Word boundaries and sentence boundaries are fuzzy.
5. Apart from the noun-verb distinction, word class distinctions are fuzzy.

Together this makes for a comparatively fluid and flexible system. Rigid rules have their place in Chinese grammar as well, but are much less dominant. This kind of flexibility is found in other East and Southeast Asian languages as well. Whether it is also found in the analytic languages of West Africa and South Africa is uncertain.

As an example of the kind of flexibility present in Chinese grammar, consider the following sentence:

Nǐ bù lái, wǒ bú qù.
you not come I not go

This sentence may have at least four different meanings:

1. 'If you don't come, I won't go.'
2. 'When you don't come, I won't go.'
3. 'Since you don't come, I won't go.'
4. 'You won't come, and I won't go.'

It is fully possible to include function words that make these distinctions clear, but if the meaning can be inferred from the context, or if the distinctions are deemed unimportant, such function words may just as well be left out.

A linguist from Taiwan gave his Chinese-speaking students one unpunctuated text in English and one in Chinese and asked them to add punctuation marks in both texts. It turned out that the students agreed almost completely about the punctuation of the English text, but had widely different proposals concerning the punctuation of the Chinese text. Paradoxically, they seemed more certain about sentence boundaries in English than in their own mother tongue.

Thus, even a mildly synthetic language like English is much more rigid than Chinese. As already noted, a speaker of English is constantly forced to decide whether he wants to talk about objects in the singular or the plural, and whether he wants to talk about events in the present or the past.

The same type of rigidity lies behind the obligatory presence in many modern European languages of a subject. Even in sentences with no logical subject, a formal subject is required, such as in the English sentence *It rains*. The only function of the pronoun *it* is to fill the obligatory subject slot. In other European languages, such as Spanish, the subject is not obligatory. Not only is there no formal subject corresponding to English *it* in the sentence *Llueve* 'It rains', but it is also very common to drop the subject in cases where it does have a concrete reference, such as in the sentence *Fuma* 'He smokes'. In Spanish, however, the categories of person and number are more unambiguously expressed in the inflectional form of the verb, such as *fumo* 'I smoke' vs *fumas* 'you smoke' vs *fuma* 'he/she smokes'. Even if the subject itself is left out, therefore, important information about the subject is obligatorily present in the verb form. This is different from Chinese, which has neither obligatory subject nor verb inflection.

4.3 Word order typology

As mentioned above, typologists often divide languages into types according to so-called **basic word order**, understood as the order of elements in a typical declarative sentence with a transitive verb. This is one of the most commonly discussed typological distinctions in modern linguistics.

4.3.1 SOV vs. SVO vs. VSO

We have already mentioned that the vast majority of languages can be divided into three types according to the dominant order of subject (S), object (O) and verb (V):

SOV (Japanese)

Watashitachi wa Nihongo o hanasu.
 we TOP Japanese OBJ speak
 'We speak Japanese.'

SVO (English)

He ate the pudding.

VSO (Arabic)

Qatala l- malik-u l- malikat-a
 kill DEF king NOM+DEF DEF queen ACC
 'The king killed the queen.'

Less than five percent of the world's languages belong to one of the three remaining possible types: VOS, OVS and OSV. In other words, the subject precedes the object in more than 95 percent of all languages. In fact, the subject tends very strongly to precede both verb and object, and according to one study, SOV and SVO together are found in more than 85 percent of all languages, while VSO is only found in around nine percent. Other studies give different figures, but the tendency is the same.

The following are three possible reasons why the subject tends to occur early in the sentence:

1. The thematic role of agent tends to precede the thematic role of patient, and the prototypical subject is an agent. In other words, the closer a participant is to the energy source, the earlier it tends to appear (cf. chapter 2).
2. The element which is more animate tends to precede elements which are less animate; very often the subject is human, and humans are conceived of as being highest in the animacy hierarchy.
3. Information that is more thematic tends to precede information that is less thematic, and very often the subject is also a theme during discourse. (Indeed, if other elements are more thematic than the subject, they are often lifted out of their original position and placed before the subject, as in Chinese *Zhè běn shū wǒ bù xǐhuān* 'This book I don't like'.)

The order of object and verb seems to be more random, though all studies show that there are more SOV languages than SVO languages in the world.

The interesting thing about the distinction between SOV, SVO and VSO is that it tends to correlate with a number of other word order properties. Few of these correlations are absolute, but the tendency is clear. For instance, SOV languages tend to have the following word order properties:

noun+postposition
 genitive+noun

verb+auxiliary
relative clause+noun
standard of comparison+adjective

VSO languages, on the other hand, tend to have exactly the opposite word order properties:

preposition+noun
noun+genitive
auxiliary+verb
noun+relative clause
adjective+standard of comparison

It has sometimes been claimed that SVO languages like English constitute an intermediate type, so that they sometimes go with SOV languages and sometimes with VSO. In fact, however, English has the following properties:

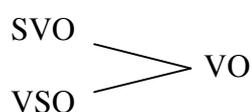
preposition+noun (*in the house*)
genitive+noun (*Tom's house*) or noun+genitive (*the house of Tom*)
auxiliary+verb (*will come*)
noun+relative clause (*the cat that ate the rat*)
adjective+standard of comparison (*better than Tom*)

Thus, it is only in the ordering of genitive and noun that English behaves as an intermediate type, vacillating between genitive+noun and noun+genitive. In all other respects, it behaves like VSO languages. And this has been shown to be typical not only of English, but of SVO languages in general. Basically, SVO languages behave in the same way as VSO languages with regard to word order properties. Only in a few specific cases, such as the ordering of genitive and noun, do SVO languages constitute an intermediate type between SOV and VSO.

Note that the terminology used in typological comparison is often less precise than in other branches of linguistics. For instance, the term 'genitive' usually denotes a specific form of the noun in languages with case inflection, similar to English *Tom's*. When discussing typology, however, *of Tom* is also called a genitive, because it is more or less functionally equivalent to *Tom's*. Many languages do not, strictly speaking, have pre- or postpositions (they use verbs or nouns instead), adjectives (they use verbs instead), relative clauses or even subjects and objects. In typology, however, these terms are still used for whatever functional equivalent is found.

4.3.2 OV vs. VO

If SVO languages and VSO languages behave more or less the same way, there is in most cases no need to distinguish between them. The important property shared by both is that the verb precedes the object, in contrast to SOV languages. Where the subject is placed is of less importance:



SOV ——— OV

In the few cases where the position of the subject does seem to matter, such as in the ordering of genitive and noun, the OV vs. VO distinction may be supplemented by an additional distinction between SV and VS languages:

SVO
 SOV \ / SV
 VSO ——— VS

As we have seen, SV languages are much more common than VS languages.

4.3.3 Modifier+head vs. head+modifier

What is the explanation for the correlations between OV vs. VO order and other word order features? One of the more daring suggestions has been that all elements that occupy the same relative position as the verb are **heads**, while all elements that occupy the same relative position as the object are **modifiers**.⁴ Thus, in OV languages, the modifier tends to precede the head, while in VO languages, the head tends to precede the modifier. The elements discussed so far, therefore, can be classified as heads and modifiers according to the following list:

<u>Modifier</u>	<u>Head</u>
object	verb
noun	adposition (post- or preposition)
genitive	noun
verb	auxiliary
relative clause	noun
standard of comparison	adjective

Other pairs of alleged modifier-head elements are:

<u>Modifier</u>	<u>Head</u>
adverbial	verb
adjective	noun
numeral	noun
determiner	noun
adjective	comparison marker

This looks neat and nice—but is it true? One study looked at the correlation between verb and object, adposition and noun, noun and genitive, and noun and adjective. In theory, only two types should exist:

<u>Type 1</u>	<u>Type 2</u>
verb+object	object+verb

⁴ In the original proposal, by Theo Vennemann, the terms operand and operator are used instead of head and modifier.

preposition+noun	noun+postposition
noun+genitive	genitive+noun
noun+adjective	adjective+noun

In fact, however, only 68 of the 142 languages examined belong to either type 1 or type 2. More than half of the languages, therefore, deviate from the pattern. On the other hand, 50 of these deviate in only one of the four criteria, and 24 deviate in two of the four criteria. To judge from these results, though more than half of the world's languages do not consistently adhere to either the modifier+head or the head+modifier order, the vast majority of them (118 of 142) do so in the majority of cases.

4.3.4 Left-branching vs. right-branching

Some of the exceptions to the general principle of uniform ordering of modifiers and heads are systematic. For instance, it turns out that the ordering of adjectives and nouns do not follow this principle at all. In theory, VO languages should let the adjective follow the noun, since the adjective is a modifier and the noun a head, while OV languages should let the adjective precede the noun, for the same reason. In fact, however, the adjective turns out to precede the noun somewhat more often in VO languages than in OV languages, though in both types, it is more common to let the adjective follow the noun. One possible explanation is that modifiers need to be full-fledged phrases that may be expanded at will in order for the principle to apply. Note the difference between the following two English expressions:

an old man
a man as old as the mountains

In the first case, where the adjective precedes the noun (although English modifiers usually follow their heads), the possibilities for expansion of the adjective phrase are very limited. One might add an intensifying adverb like *very*, but not much more. In the second case, however, where the adjective follows the noun, the adjective phrase may be expanded at will:

a man as old as the mountains I knew when I was a child in the country that I later left behind in order to search for the holy grail

The same fact may explain why intensifying adverbs do not conform to the principle of uniform ordering of modifiers and heads. In English, for instance, intensifiers precede the adverb:

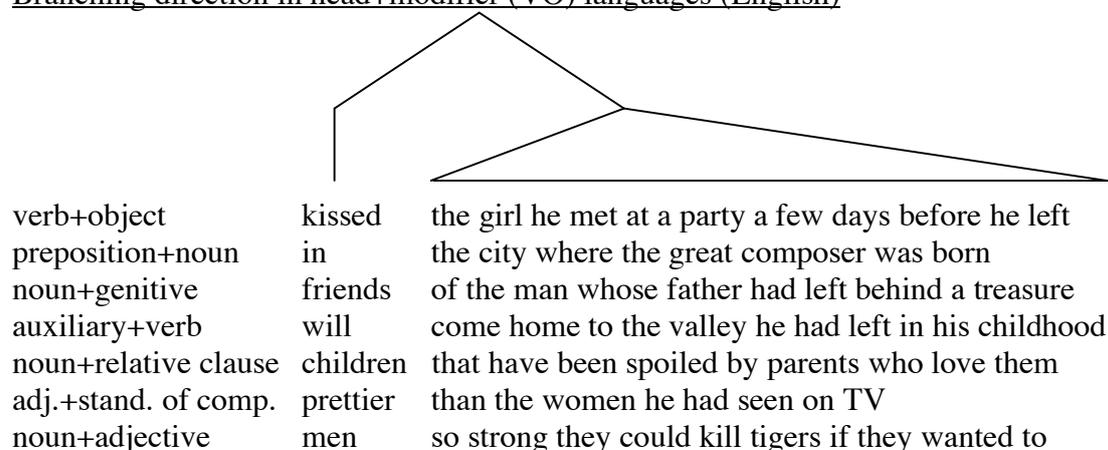
very good

Again, this violates the usual English word order of head+modifier. The adverb, however, is not a freely expandable full-fledged phrase, and this explains the deviation.

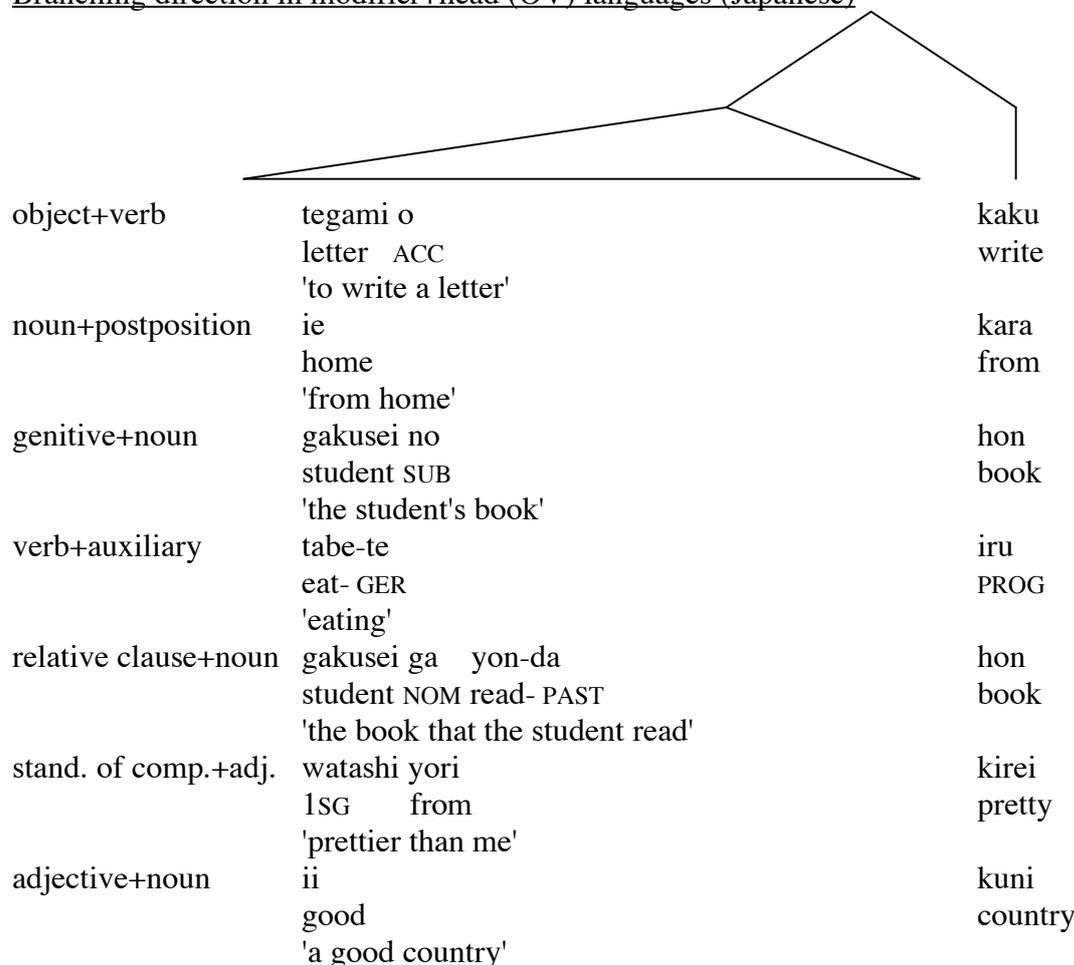
While the modifier must be a freely expandable full-fledged phrase, the head is never expandable in this way. This means that in modifier+head languages, extensive expansion always occurs to the left of the non-expandable element, while in head+modifier languages, extensive expansion always occurs to the right of the non-expandable element. Based on the drawing of syntactic "trees" with "branches", such

extension is called "branching", and languages tend to have consistent **branching direction**:

Branching direction in head+modifier (VO) languages (English)



Branching direction in modifier+head (OV) languages (Japanese)



Modifier+head languages are **left-branching**, while head+modifier languages are **right-branching**.

Behind the fact that languages tend to consistently branch to one side lies the need for simplicity in producing and perceiving the structure of sentences. A language with less branching consistency would be less easy to master both for the speaker and

the hearer. This may explain many of the puzzling facts pertaining to word order typology.

4.4 Typology of motion verbs

While word order typology is strictly syntactic, the typology of motion verbs is a much more complex phenomenon, involving syntax, semantics and the lexicalisation of meaning. It also has a bearing on the question discussed in chapter 1 concerning the influence of language on thought.

Motion is expressed differently in different languages, and the differences turn out to be highly significant. There are two large types, **verb-framed** and **satellite-framed** languages.

One of the differences between the two regards what kind of information is typically lexicalized by a verb of motion. One piece of information is, of course, the fact that something is moving, the motion itself. In addition to that, however, most languages tend to follow one of two strategies.

In satellite-framed languages like English, the motion verb typically also expresses **manner** or **cause**:

The bottle *floated* out of the cave. (Manner)

The napkin *blew* off the table. (Cause)

The languages that follow this strategy include Indo-European languages (except Romance), Finno-Ugric languages, Chinese, and others. In the following Chinese example, the main motion verb *piāo* 'float' also expresses manner:

Píngzi cóng shāndòng piāo chū lái.
bottle from cave float exit come

Although *chū* 'to exit' and *lái* 'to come' are also motion verbs, their function is secondary, *chū* corresponding in function to the English adverb *out*, while *lái* marks movement in the direction of the speaker.

In verb-framed languages like Spanish, the motion verb typically does not convey information about manner or cause, but expresses instead the **path** of motion: direction, arrival, departure, traversing and many others:

La botella *salió* de la cueva. (Departure)

'The bottle moved out from the cave.'

La botella *cruzó* el canal. (Traversing)

'The bottle moved across the canal.'

The languages that follow this strategy include Romance languages, Semitic languages, Polynesian languages, Japanese, Korean, and others. In the following Japanese example, the motion verb *deta* 'moved out' also expresses path:

Bin -ga dookutsu-kara de -ta
bottle-NOM cave -from exit-PAST

The verb *deta* is not only the main verb, but the only verb in the sentence.

English has a number of verbs that include information about path rather than manner/cause, but most of them are borrowed from French or other Romance languages: *enter, exit, ascend, descend, cross, pass, circle, advance, proceed, approach, arrive, depart, return, join, separate, part*. Only a few are indigenous words of Germanic origin: *rise, leave, near, follow*.

Verb-framed languages also have a number of verbs that include information about manner, such as words for 'run', 'walk', 'fly' and so on. Even when they have such manner verbs, however, they tend to prefer path verbs.

Satellite-framed languages usually also express path, only it is not expressed in the verb, but in what is called the **satellite** to the verb, in English usually an adverb like *out*, in Chinese usually a non-main verb like *chū*:

The bottle floated *out*.

Píngzi cóng shāndòng piāo chū lái.
bottle from cave float exit come

Thus, both verb-framed and satellite-framed languages usually give expression to the path of motion, but while verb-framed languages do so in the main verb, satellite-framed languages do so in the satellite.

Verb-framed languages are also fully able to express manner and cause, only they are not expressed in the verb, but in a more peripheral element like the Spanish gerund *flotando* 'floating' or the Japanese gerund *nagarete* 'floating':

La botella salió de la cueva *flotando*.
'The bottle floated out of the cave.'

Bin -ga dookutsu-kara nagara-te de -ta
bottle-NOM cave -from float -GER exit-PAST

In this case, however, it is much more common to leave the peripheral element out and rely on the context to make clear that the motion is one of floating, especially in Spanish.

If both verb-framed and satellite-framed languages are able to express both manner/cause and path, the question arises: What is the significance of this distinction?

Part of the answer has to do with the notions of **foregrounding** and **backgrounding**. If verb-framed languages include information about manner/cause (such as in the sentences with Spanish *flotando* and Japanese *nagarete* above), this information is strongly highlighted—it is foregrounded. When satellite-framed languages include information about path, however, this information can still remain backgrounded. Since the inclusion of foregrounded elements in a sentence is more energy-demanding than the inclusion of backgrounded elements, the speaker is less prone to do so. And in fact, while verb-framed languages like Spanish and Japanese seldom include information about manner/cause, satellite-framed languages like English and Chinese very often include information about both manner/cause and path.

When speakers of different languages are given a series of pictures indicating that an owl exits from its hole in a tree, speakers of verb-framed languages almost

always use the single path verb meaning 'exit', while speakers of satellite-framed languages often use a manner verb combined with a path satellite:

Verb-framed languages:

Spanish: *Sale un buho* 'Exits an owl'

Turkish: *Oradan bir baykus çıkıyor* 'From there an owl exits'

Hebrew: *Yaca mitox haxor yanšuf* 'Exits from-inside the-hole owl'

Satellite-framed languages:

English: An owl *popped out*

German: ... weil da eine Eule plötzlich *raus-flattert* 'because there an owl suddenly out-flaps'

Chinese: *Fēi chū yī zhī māotóuyīng* 'Fly out one piece owl'

There now exists a huge amount of material confirming this difference in actual language use.

Some satellite-framed languages, including English, allow information about path to appear in up to two satellites and one prepositional phrase. This makes it possible to produce sentences where both manner/cause and three types of path are expressed at the same time:

The man ran back down into the cellar.

The verb *ran* includes information about manner, while the adverbs *back* and *down* and the prepositional phrase *into the cellar* all provide different information about path. This sentence is not directly translatable into a verb-framed language like Spanish, which usually requires path to be expressed in the verb, and which does not have satellites. The following three sentences are all half-good near-translations:

El hombre volvió al sótano corriendo. (leaving out the 'down' and 'into' meanings)
'The man returned to the cellar running.'

El hombre bajó al sótano corriendo. (leaving out the 'back' and 'into' meanings)
'The man descended to the cellar running.'

El hombre entró al sótano corriendo. (leaving out the 'down' and 'back' meanings)
'The man entered the cellar running.'

While it is possible to explain in Spanish what the English sentence means, this requires a wordiness that would make it highly unlikely that a Spanish speaker would ever think of uttering the resulting sentence(s).

It turns out, therefore, that satellite-framed languages allow for more detailed description of paths and tend towards greater specification of manner than verb-framed languages. On the other hand, for reasons that are not entirely clear, verb-framed languages tend to describe more elaborately locations of people or objects and endstates of motion. Thus, the importance of the typological distinction between verb-framed and satellite-framed languages extends far beyond the confines of language structure. At the very least, it seems to have consequences for our ways of describing (or narrating) actual situations and most probably also influences our ways of perceiving these situations.

4.5 Tone languages vs. stress languages

Phonological typology often does not have the same power of generalisation as the examples of typology discussed above. For instance, while knowing that a language has SOV as its basic word order also tells us that this language probably has postpositions and preposed relative clauses, knowing that a language has click consonants basically tells us nothing more than simply that.

In the following, we shall confine ourselves to a brief look at the typological distinction between **tone languages** (languages with tonemes) and **stress languages** (languages where stress and/or accent play a vital role). Languages with an extensive tonal system tend to make less use of stress and accent and vice versa. This is in itself important and may have to do with the fact that whatever functional load is carried by tonemes in one language may be carried by stress/accent in another.

However, the functions of tonemes and stress/accent are by no means entirely the same. Tonemes give **paradigmatic prominence** to a syllable, while stress/accent mainly gives **syntagmatic prominence**. The main function of tonemes is to distinguish each syllable from any other possible syllable with the same segmental phonemes. In Chinese, for instance, the syllable *ma* represents different words if pronounced with a high even tone, a rising tone, a low falling-rising tone, or a falling tone:

mā ‘mother’
má ‘hemp’
mǎ ‘horse’
mà ‘to scold’

The comparison is between an abstract set of words or syllables. In comparison, the main function of stress/accent is to give prominence to one or more syllables in a word over other unstressed or unaccentuated syllables in the same word. For instance, the English word *lackadaisical* has its main stress on the third syllable, not on the first, second or fourth:

*lack-a-**dai**-si-cal*

In other words, tonemes imply comparisons between different words that do not belong within the same stretch of speech, while stress/accent implies comparisons within the same word or stretch of speech. This being said, it should also be noted, however, that the placement of stress may have paradigmatic functions as well, as when the noun *permit* has its main stress on the first syllable and the verb *permit* on the second.

The distinction between tone languages and stress languages is not absolute. Norwegian is a stress language with tonemes, and Chinese is a tone language with stress/accent. In both cases, however, there is no doubt which type each language belongs to. Tonemes play only a marginal role in Norwegian, and stress/accent plays only a marginal role in Chinese.

Tone languages may be further divided into those with **contour tones** and those with **level tones**. Contour tones are mainly distinguished by shape: rising,

falling, rising-falling etc. Level tones are basically distinguished by pitch level: high, mid, low etc. Contour tones seem to be most widespread in Asia, while level tones seem to be more widespread in Africa. But the distinction is much more complex. In tone-rich languages like Cantonese, tones will often be distinguished by both contour and level: high rising vs. low rising, high falling vs. low falling etc. In many African languages, sequences of different level tones have often combined to produce new contour tones.

Stress languages may be further divided into those with so-called **free** (or unpredictable) **stress** and those with **fixed** (or predictable) **stress**. Like other Germanic languages, English has free stress, as the contrast between the noun *permit* and the verb *permit* shows. In such languages, stress may serve to distinguish one word for another.

In languages with fixed stress, stress does not serve to distinguish one word from another. The following subtypes are common:

1. The main stress falls on the last syllable (French, Turkish)
2. The main stress falls on the first syllable (Czech, Hungarian, Latvian)
3. The main stress falls on the penultimate (second-last) syllable (Swahili)

In addition come languages in which the heaviness of a syllable (for instance, whether or not it contains a long vowel) plays a role for stress placement, such as the Finno-Ugric languages Selkup and Meadow-Mari, in which the main stress falls on the rightmost heavy syllable if there is one, otherwise on the first syllable.