

Chapter 3

Language universals

3.1 Introduction

What do the languages of the world have in common? And how do they differ from each other?

At first glance, languages in different parts of the world are extremely different. When Japanese is compared to Arabic¹ and to the West-African language Fula², the similarities are not immediately striking—as illustrated by sentences (1a-c), all of which mean ‘The servant gave the horse water’:³

(1) *‘The servant gave the horse water’ in Japanese, Arabic, and Fula*

(1a) Japanese: *Shiyooni ga uma ni mizu wo ageta*
servant NOM horse DAT water ACC gave

(1b) Arabic: *ʿaṭā l-kh ādimu l-ḥiṣāna māʿan*
gave the-servant-NOM the-horse- ACC water-ACC

(1c) Fula: *Suka hokkii puccu ndiyam.*
servant gave horse water

The differences between the three languages are many. The pronunciation of each word differs from one language to another, and especially Arabic has many sounds that the other two languages lack, such as the velarized consonants **ṭ** and **ṣ**. The word order also differs, with the verb coming last in the Japanese sentence, first in the Arabic sentence, and between the subject and the objects in the Fula sentence. Furthermore, while Japanese uses the case particles *ga*, *ni* and *wo* to indicate what is subject and indirect and direct object, Arabic does something similar with case forms of the noun, while Fula has neither case particles nor case forms. There are also many differences that are not immediately clear from the presentation above. For instance, the various words for ‘servant’ have different connotations in different languages. And finally, the Arabic sentence is actually slightly unidiomatic, since Arabic has a separate word meaning ‘to give water’: *ʿarwā* or *rawwā*.

In spite of all the differences, however, these languages still have a lot in common—one may even claim that the similarities are more striking than the differences. Most obviously, all three languages have sentences that consist of words with a pronunciation and a meaning. In all three languages, the pronunciation may be

¹ When nothing else is said, *Arabic* refers to modern literary Arabic.

² When nothing else is said, *Fula* refers to the Adamawa dialect of Cameroon and eastern Nigeria.

³ Each sentence is followed by word-by-word translations. Grammatical elements are rendered with SMALL CAPS: NOM = nominative, ACC = accusative, DAT = dative.

analyzed into vowels and consonants that combine into syllables. Furthermore, there is agreement about what are the central components of the event: there is an action of giving with three “participants”: the servant, the horse, and the water. In all three languages, the action of giving is referred to with a verb, while the servant, the horse and the water are referred to with nouns. These four components of the event are assembled into a sentence with a subject (‘servant’), two objects (‘horse’, ‘water’), and a verb (‘give’). Most or all languages in the world share these and many other features.⁴

In the present chapter, we shall first be concerned with what human languages have in common, with **language universals**. Then, in the next chapter, we shall go on to discuss ways in which languages differ from each other in often surprisingly systematic ways. More specifically, we shall discuss how languages can be divided into types based on such differences. In other words, we shall look into the field of **linguistic typology**.

3.2 Universals

One important aim of most linguistic theories is to pin down what the languages of the world have in common. In chapter 2, we looked at some basic notions and tools used in the analysis of languages, and many of these capture generalizations that are valid for most or all languages. For instance, the distinction between vowels and consonants are useful in the description of all languages of the world, and so is the case with, for instance, the distinction between front and back vowels, as well as the distinction between obstruent and sonorant consonants. In the realm of grammar, most or all languages distinguish between nouns and verbs, most or all languages have pronouns, and the majority of languages make a distinction between subject and object.

To a large extent, therefore, chapter 2 already gave us much material for the study of language universals. In the present chapter, we shall go a few steps further in the study of what languages have in common.

3.2.1 Kinds of universals

First, we must make a basic distinction between **absolute universals** and **statistical universals**. Absolute universals refer to properties found in all languages, while

AN ABSOLUTE UNIVERSAL
All languages have vowels
and consonants.

statistical universals reflect important trends that are found in a predominant part of the languages of the world, but not necessarily in all. It is often difficult to ascertain what constitutes absolute universals, since we do not have access to

A STATISTICAL UNIVERSAL
Subjects tend strongly
to precede objects.

reliable information about all languages in the world.

For instance, while it is very likely that all languages of the world make a distinction between vowels and consonants, we cannot a priori rule out the possibility

of a language with only vowels or only consonants. On the other hand, we know for certain that some universals are only statistical. For instance, in the vast majority of languages, the subject usually precedes the object, but there are also languages where

⁴ In some languages, though, sentences may not be readily analyzable into syntactic functions like subject and object.

this is not the case, and even languages where the distinction between subject and object does not apply.

Language universals may also be generalizations about properties of just a small selection of languages, so-called **implicational universals**, which state that if a

AN IMPLICATIONAL UNIVERSAL
If a language has voiced fricatives, it also has unvoiced fricatives, but not necessarily the other way round.

language has property A, then it also has property B, but not necessarily the other way round. For instance, if a language has voiced fricatives like [v] and [z] (property A), it also has unvoiced fricatives like [f] and [s] (property B). The reverse is not true, since many languages have unvoiced fricatives, but not voiced fricatives. For an implicational

universal to make sense, there must also exist languages that have neither property A nor property B. Indeed, some languages lack both voiced and unvoiced fricatives.

To our knowledge, the correlation between unvoiced and voiced fricatives is an absolute implicational universal. But there are also examples of statistical implicational universals. For instance, if a language typically places the main verb between the subject and the object, as in English *The cat caught the mouse*, its relative clauses usually follow the noun they modify, as in *the cat that caught the mouse*, but Chinese and a few other languages are exceptions, placing relative clauses before the noun they modify.

3.2.2 Explanations for universals

Why do languages have so many things in common? Why do all languages have consonants and vowels? Why do subjects tend so strongly to precede objects? And why does the existence of voiced fricatives in a language presuppose the existence of unvoiced fricatives, but not the other way around?

One way of trying to account for universals is the **monogenesis** hypothesis: the idea that all languages stem from the same proto-language and have inherited the same universal traits from this proto-language. But this explanation does not take us very far. It may or may not be true that all languages stem from the same proto-language somewhere in the distant past. But even if this should turn out to be true, this cannot explain the existence of many universals. Take, for instance, the fact that subjects tend to precede objects in most languages of the world. Is this because most languages have inherited their word order from a distant proto-language? If so, how come the position of the verb varies so much? As we saw above, Japanese places the verb at the end of the sentence, Arabic at the beginning, while Fula (like English) places it in between the subject and the object(s). Furthermore, as we shall see later in this chapter, many implicational universals depend on the position of the verb. As mentioned above, languages that typically place the verb between (or, it should be added, before) the subject and the object tend strongly to place relative clauses after the noun they modify, as in English, Arabic and Fula. On the other hand, languages that place the verb at the end of the sentence, tend to place relative clauses before the noun they modify, as in Japanese:

(2) *'the cat that caught the mouse' in Japanese*

nezumi o tsukamaeta neko
mouse ACC caught cat

Sometimes languages change from one type to another, so that a language that used to place the verb at the end changes into, for instance, a language that places the verb between subject and object. When this happens, the placement of the relative clause also usually changes. This kind of universal cannot be explained as inheritance from a single proto-language.

Another possible explanation for universals is the **language contact** hypothesis, according to which languages have many things in common because they are constantly influenced by each other. This fits well with the fact that exceptional features are often found in peripheral languages that have developed in relative isolation. For instance, the few languages in which the object usually precedes the subject are mostly located in the geographical periphery and have traditionally had little contact with other languages. This includes the Austronesian island languages Fijian and Malagasy (verb-object-subject) and a number of very small languages along the tributaries of the Amazon River in Brazil (Xavante, Apurinã, Jamamadi, Kayabi and Nadëb all have object-subject-verb, while Hixkaryána and the Mexican language Huarijó have object-verb-subject). Languages learn from each other, and the strong tendency for subjects to precede objects may at least partly be a result of language contact (as may the clustering of all the exceptions in just a few geographical areas). However, while language contact may sometimes explain *how* near-universal features spread across the world, it can hardly explain *why* certain features are allowed to spread this way, while others are not. Why, for instance, do subjects tend to precede objects and not the other way around?

One common explanation for language universals is the **innateness** hypothesis, the idea that our ability to use language is a part of our genetic endowment, and that genetics also determines many details in the form and structure of languages. Under this hypothesis, we may be genetically predisposed to distinguish between vowels and consonants, and to let subjects precede objects. Implicational universals may also be accounted for this way; we may, for instance, be genetically predisposed to let the position of a relative clause depend on the position of the verb. This hypothesis seems to fit well with the fact that children learn to speak their first language in various steps according to their general genetic development. As with many genetically determined skills, there is a critical age for language learning. Children tend to learn languages easily and naturally simply by interacting with others who speak the language, while teenagers and adults must learn languages the hard way, and usually with less success.

In its strongest version, the innateness hypothesis explains our ability to learn and use language as an effect of an **innate grammar**, a genetic programme specifically designed to determine the development of our language ability. A weaker version of the innateness hypothesis focuses instead on more general anatomic and cognitive features that are helpful in language learning, but that also have other language-independent functions. For instance, our so-called speech organs are shaped in a unique way that enable us to speak the way we do (as opposed to apes, who would not be able to pronounce the sounds of human language even if they wanted to), but the shape of our mouth, teeth, tongue, nasal cavity and throat is also important for other purposes, like eating and drinking human food and drink, as well as breathing the way we do. Similar things can be said about our cognitive abilities. The human brain differs significantly from the brain of other mammals. We have a larger frontal lobe, more complex insula on each side of the cerebral cortex, more numerous spool cells etc. Some of these characteristics are undoubtedly important in the development and use of language, but they are also important for other purposes, such as our general capacity for abstract thinking, creative imagination and emotional complexity.

Language universals may be partly explained by our genetic endowment, but this does not necessarily (at least not always) presuppose a language-specific innate grammar, but may just as well be linked with more general anatomic and cognitive features.

This leads us to the large variety of **functional** explanations for language universals. Some language features are universal because they make linguistic utterances easier both to produce and to interpret—for cognitive, anatomic or other reasons. The fact that all languages have both consonants and vowels is an obvious example. A language with only consonants would be more difficult to hear, since consonants are generally less sonorant than vowels. A language with only vowels, on the other hand, would be unsatisfactory because we are only able to distinguish a very limited number of vowel qualities. As for the tendency for the subject to precede the object, several functional explanations have been proposed. Many of them imply that linguistic structure to some extent reflects our way of thinking. For instance, the prototypical subject is the agent, who initiates the action and therefore comes early in the sentence, while the prototypical object is the patient, who (or which) is directly affected by the action and therefore comes later in the sentence (cf. chapter 2). In the sentence *Tom hit John*, the hitting starts with Tom and ends up having consequences for John, and this is reflected in the fact that Tom occurs earlier in the sentence than John. Other functional explanations for the order of subject and object are given later in this chapter.

3.3 Lexical universals

Learning another language often implies learning new concepts. As noted in chapter 2, an English speaker learning Chinese will have to learn eight new concepts for cousin, while a Chinese speaker learning English will have to learn the general concept represented by the English word *cousin*. Chinese has lexicalized the distinction

LEXICALIZATION

A language has lexicalized a concept when it uses a word (or some other lexical item) to represent this concept.

between eight different types of cousin, but not the general concept that covers all these types. English, on the other hand, has only lexicalized the general concept, which is **unmarked** (or neutral) with respect to the distinctions involved in the Chinese terms.

But languages may be widely different and still lexicalize many of the same concepts. At the

beginning of the present chapter, we saw how the English sentence *The servant gave the horse water* involves roughly the same concepts when translated into Japanese, Arabic and Fula. It makes sense to ask, therefore, which concepts are lexicalized by all languages across the world, which is what we shall do in the present section.

Most lexical universals are **approximate** rather than **precise**. For instance, it has often been said that all languages have the concepts of 'black' and 'white', but this is only true in an approximate sense. In languages with few colour terms, such as the Indonesian language Lani, which only has two, the word for 'black' also covers dark and cool colours like green and blue, while the word for 'white' also covers light and warm colours like red and yellow. Thus, English *black* and Lani *mili* are only approximate equivalents, and the same is true of English *white* and Lani *laambu*.

Furthermore, most lexical universals are **statistical** rather than **absolute**. The concept of 'water', for instance, is probably found in most languages, but not in all. The closest equivalent in Japanese is *mizu*, which, however, is only used about cold water; another word *o-yu* is used for hot water. The Yimas language of New Guinea has no word for 'water' at all and instead uses the word *arm* 'liquid', which may also

refer to other liquids like petrol and kerosene. Thus, 'water' is at best a statistical universal.

The question is, therefore, to what extent there exist absolute and precise lexical universals. Let us begin with two of the most obvious candidates, the concepts of 'I' and 'you', which seem to be lexicalized in all languages. Even in such seemingly clear cases, questions remain. The English word *you*, for instance, covers both singular and plural and thereby corresponds to two different concepts in other languages. Are English *you* and, say, French *tu* or German *du* different concepts? Not necessarily. The distinction between the reflexive forms *yourself* and *yourselves* shows that even English makes a conceptual distinction between 'you (singular)' and 'you (plural)', and that the word *you* is polysemous, representing two separate (though related) concepts. As far as we can tell, all living languages have the concept 'you (singular)'.⁵

Another example is the concept of '(biological) mother', which seems to be found in all living languages around the world. This does not mean that the word for mother covers exactly the same range of meaning in all languages; it simply means that all languages have a word with '(biological) mother' as one of its core meanings. The English word *mother* is highly polysemous and has many meaning variants that are not necessarily found in other languages, such as 'a disc with grooves that is made from the plating of an electrotyped master matrix and is used to make a stamper for gramophone records, compact discs, etc.' (*Oxford English Dictionary*). In the Australian language Yankunyatjara, the word *ngunytju* 'mother' is also polysemous and may be used to refer to one's mother's sister or her female cousin, but again these are extended meanings, and the expression *ngunytju mula* 'true mother' refers exclusively to one's biological mother. Both English and Yankunyatjara, therefore, share the concept '(biological) mother', as do the rest of the languages of the world.

Since we do not have reliable information about all languages of the world, we can never be certain of the existence of absolute and precise lexical universals. There are many possible candidates, but some of them may turn out to be statistical rather than absolute (like 'water'), while others may turn out to be approximate rather than precise (like 'black' and 'white').

The question of whether or not a concept is lexicalized in a given language is not always an either-or question. As noted in chapter 2, it has been proposed that all languages lexicalize the concepts of 'man' and 'woman'. In most languages this is done by means of simple words like English *man* and *woman*. The corresponding Chinese words, however, are complex terms consisting of the word *nán* 'masculine' or *nǚ* 'feminine' plus the word *rén* 'person':

nán-rén 'man'
nǚ-rén 'woman'

Japanese goes one step further and adds the grammatical particle *no* (marking subordination) between *otoko* 'masculine' or *onna* 'feminine' and *hito* 'person', marking them clearly as separate words:

otoko no hito 'man'
onna no hito 'woman'

⁵ Classical Chinese, which does not really count as a living language today, may not have made the distinction between 'you (sg.)' and 'you (pl.)'.

Even in the Japanese case, however, one may still argue that *otoko no hito* and *onna no hito* are fixed expressions, and that the concepts of 'man' and 'woman' are lexicalized, although they are represented by fixed, idiomatic phrases rather than single words. The degree of lexicalization, however, is much weaker than in English.

3.4 Basic colour terms



What is the colour of the carrots to the left? The Norwegian word for carrot is *gulrot*, which translates as 'yellow root', while one of the Chinese terms is *hóng luóbo*, which translates as 'red turnip'.⁶ Are carrots red or yellow? You would probably insist that they are somewhere in between and that a more proper colour term would be *orange*.

At first sight, the colour terms of different languages vary enormously. Some languages make do with only two basic colour terms, while other languages have at least eleven. The same shade of colour may be classified differently in different languages, as in the case of the colour of the carrot. For a long time, it was believed that different languages classify colours in a more or less random way.

It turns out, however, that although speakers of different languages may disagree on whether carrots are yellow or red, they seldom disagree on what constitutes the most typical examples of yellow and red. When they are given chips with different shades of yellow, they tend to agree on which of the chips is the most typical example of yellow, and the same holds for red and many other colours. It is clear, therefore, that although more peripheral examples of a given colour may be classified differently in different languages, the **focal colours** are basically the same across languages. Focal colours are, it seems, determined not by language, but by the physiology of colour perception. Across the world, people tend to see colour in much the same way.

When comparing focal colours across languages, it turns out that although the variety in colour terms is huge, the variation follows a systematic pattern. A language with only two colour terms has a word for 'black' and a word for 'white', a language with three colour terms has, in addition, a word for 'red', a language with four colour terms has, in addition, either 'green' or 'yellow', while a language with five colour terms has both 'green' and 'yellow', and so on:

Number of terms	2 terms	3 terms	4 terms	5 terms	6 terms	7 terms	10 terms
Colour term	white black	red	green or yellow	green and yellow	blue	brown	purple pink orange

The facts of this table may be formulated as a series of universals. The first of these is non-implicational:

⁶ Another Chinese term is *hú luóbo* 'barbarian turnip'.

All languages have terms for white and black.

The remaining universals are all implicational:

A language with colour terms for purple, pink or orange also has terms for brown, blue, green, yellow and red.

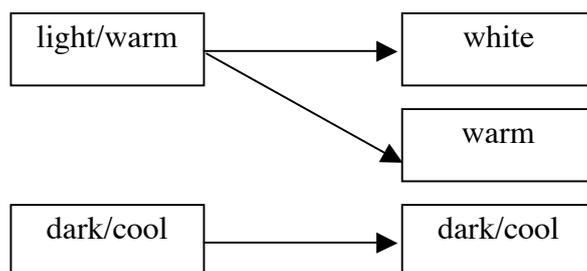
A language with a colour term for brown also has terms for blue, green, yellow, and red.

A language with a colour term for blue also has terms for green, yellow, and red.

A language with colour terms for green or yellow also has a term for red.

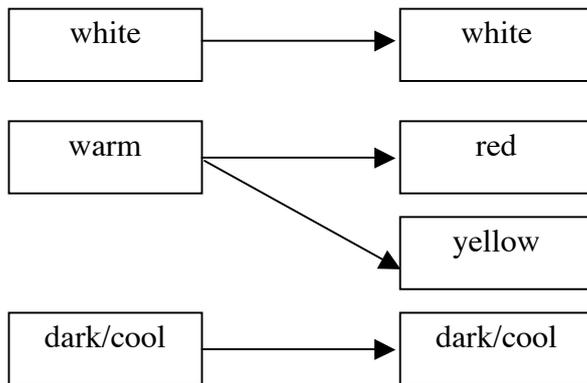
Note that all the terms above are so-called **basic colour terms**: simple terms that speakers easily recall and make use of and that do not cover colours that are within the range of other colour terms, unlike, for instance, *carmine* (a red with purplish or blueish tones in it) and *turquoise* (a blue with greenish tones in it). In addition to the terms in the table above, the term for 'grey' may occur as an additional term at any stage. Altogether, therefore, a language may have from two to eleven basic colour terms.

The table above is based on focal colours and tell us little about the actual range of each colour term in a given language. But we have already seen above that the terms for 'white' and 'black' include a wider range of colours in languages with few colour terms than in languages with many. Typically, in languages with two colour terms, such as the Indonesian language Lani, the word for 'white' covers all light and warm colours, including red and yellow, while the word for 'black' covers all dark and cool colours, including green and blue. What happens when a language acquires a third colour term is that 'warm' (i.e. 'red/yellow') is singled out as a separate meaning instead of being included in 'white':

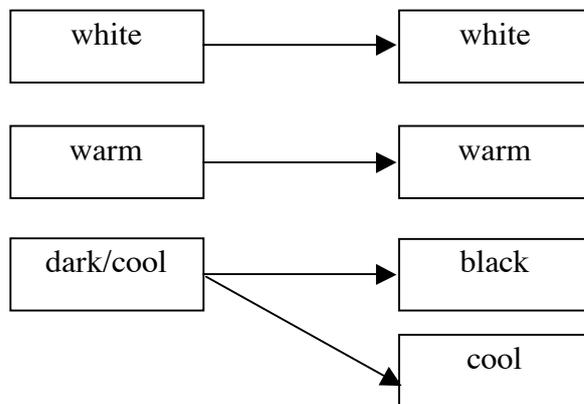


With a fourth colour term, one of two things may happen: either 'warm' is further divided into 'red' and 'yellow', or 'cool' (i.e. 'green/blue') is singled out as a separate meaning instead of being included in 'black':

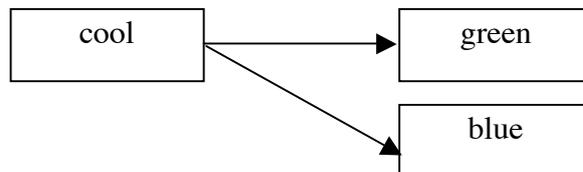
EITHER:



OR:



With a fifth colour term, both these things happen. And with a sixth colour term, 'cool' is further divided into 'green' and 'blue'.



Thus, the number of colour terms in a given language influences the range of colours referred to by each term.

3.5 Universal word classes

We have seen above how concepts may be expressed by means of words and other lexical units; they are lexicalized. But concepts may also be expressed by means of grammatical constructions; they are given **grammatical**

GRAMMATICAL EXPRESSION
 A language has given grammatical expression to a concept when it uses syntactic or morphological constructions to represent this concept.

expression (or grammaticalized, though that term is more often used in another meaning). Different languages given grammatical expression to different concepts, but there are also many similarities across the languages of the world. As an example, let us look at how different languages make distinctions between different word classes.

It may be surprising, but the word class which is most unequivocally universal is that of **interjections**. All languages appear to have a separate class of words resembling English words like *wow*, *psst*, *mhm* and *wham*. It may also be a universal aspect of interjections that they often do not abide by the same phonotactical rules as other words. In other word classes, the phonological make-up of English words like *psst* and *mhm* would have been impossible. Interjections may be divided into four basic subclasses: expressive (*ouch*, *oh*, *wow*, *aha*), directive (*hush*, *psst*, *hey*), phatic (*mhm*, *yes*, *no*, *huh*) and descriptive ideophones (*wham*, *thud*, *bang*).

All (or at least nearly all) languages of the world also make a distinction between **nouns** and **verbs**. As we saw in chapter 2, the prototypical noun refers to an entity (a substance or an object), while the prototypical verb refers to an (dynamic or stative) process. But word classes are flexible. The mass noun *love* is not a concrete substance, the count noun *year* is not a concrete object, and the verb *to be* does not in itself refer to process. Different languages assign different words to different classes. In Chinese, for instance, the class of verbs also includes words resembling English prepositions, so that *cut with a knife* is rendered as *using a knife [to] cut*. In Samoan, the class of verbs also includes words resembling English numerals, so that *two men* is rendered as *man being-two*.

The distinction between nouns and verbs has both syntactic and morphological consequences. Syntactically, an event is typically expressed by a verb, while participants of the event (and syntactic functions like subject and object) are typically expressed by nouns (or noun phrases). Morphologically, nouns and verbs are often inflected for different categories. In English, nouns are inflected for number, while verbs enter into a complex system of inflections and the use of auxiliary forms to express a number of categories such as tense, aspect, mood, person and number. In Japanese, nouns are uninflected, while the verb system is at least as complex as the English system, although Japanese verbs are not inflected for person and number. In Chinese, both nouns and verbs are uninflected, but they are still distinguished by the syntactic environments in which they occur.

The distinction between noun and verb is not always clearcut. In English, for instance, participles like *giving* are verbs with nounlike features, while derived nominals like *belief* are nouns with verblike features. Languages with much inflection tend to make a more clearcut distinction between noun and verb than languages with little or no inflection.

A few languages have been reported to lack the distinction between noun and verb. It has been claimed, for instance, that some American Indian languages have no nouns meaning 'x', only verbs meaning 'to be x', which are sometimes used as headless relative clauses meaning 'the one who is x', which is after all not so different from 'x'. Such reports have often been shown to be based on an incomplete understanding of the language in question. Even if such cases exist, they are clearly exceptional. Nouns and verbs are basic building blocks in the vast majority of languages around the world.

In contrast to nouns and verbs, **adjectives** are far from universal. For instance, Chinese and most languages of Southeast Asia make no formal distinction between adjectives and verbs. This contrasts sharply with most Indo-European languages, in

which adjectives constitute a separate word class that has more in common with nouns than with verbs. In Japanese, there are two types of adjectives, one with nounlike features, another with verblike features.

The fact that adjectives sometimes resemble nouns and sometimes verbs reflects two basic functions of adjectives: to denote properties and to denote states. Indo-European languages emphasize the property aspect, which brings adjectives close to the nouns they modify. Chinese and Southeast Asian languages emphasize the state aspect, and since states are a type of event (stative events), it is only natural that they belong to the same class as verbs. This difference is also reflected in the fact that many Indo-European languages require the copular *to be* between a subject and a descriptive adjective (*The man is tall*), while this is never the case in Chinese and Southeast Asian languages.

3.6 Universals of speech sounds

The number of speech sounds or **segmental phonemes** varies from language to language. The language Rotokas, spoken by 4000 inhabitants of Papua New Guinea, has only 11 phonemes, while the language !kung, with 5000 speakers in Namibia and Angola, has 141 phonemes. Most languages have between 20 and 35 phonemes.

Some segmental phonemes are universal, while others are found in some languages and not in others. More importantly, some **distinctive features** are universal, while others are only utilized by some languages and not by others. The following is an absolute universal:

All languages distinguish between vowels and consonants.

We can add the following statistical universal:

The vast majority of languages has fewer vowel phonemes than consonant phonemes.

The only known exception is the Brazilian language Xavante, which has 13 vowel phonemes and 13 consonant phonemes.

3.6.1 Vowels

No language is known for sure to have less than three vowel phonemes. In languages with only three vowel phonemes, like Moroccan Arabic, these are always one close front vowel, one close back vowel and one one vowel:

Table 1: Three-vowel system

	Front	Back
Close	/i/	/u/
Open	/a/	

Acoustically, these three vowel phonemes are maximally far removed from each other. Thus, even if they are not clearly pronounced, the hearer will still usually be able to distinguish them. A hypothetical three-vowel system consisting of /i/, /y/ and /e/ would be uneconomical and place a much heavier burden both on the speaker and the hearer.

At the other end, no language is known for sure to have more than 46 vowel phonemes.

The distinctive features involved in the three-vowel system are universal:

All languages make a distinction between close and open vowels.

All languages make a distinction between front and back vowels.

Some other universal tendencies are worth noting:

The number of distinctions tends to be higher in the more close vowels than in the more open vowels.

Thus, the three-vowel system above distinguishes between front and back only in the close vowels. The most common five-vowel system (found in languages like Swahili, Spanish and Japanese) distinguishes front and back in the close and mid vowels, but again not in the open:

Table 2: Five-vowel system

	Front	Back
Close	/i/	/u/ ⁷
Mid	/e/	/o/
Open	/a/	

A similar tendency is observable in the roundedness distinction. Chinese only makes this distinction in close vowels, not in mid and open vowels. Norwegian distinguishes three degrees of roundedness in close vowels, two degrees in mid vowels and makes no distinction in open vowels.

The explanation for this strong tendency is physiological. The more open the mouth is, the more difficult it is to make distinctions along the front-back and rounded-unrounded dimensions.

One exception to this tendency is Turkish, which has the same number of close and open vowel phonemes:

Table 3: Turkish vowel system

	Front		Back	
	Unrounded	Rounded	Unrounded	Rounded
Close	/i/	/y/	/ɯ/	/u/
Open	/e/	/ø/	/ɑ/	/o/

Note that in this system, /e/ and /o/ are open rather than mid. This does not necessarily mean that they are pronounced differently from /e/ and /o/ in languages where they count as mid vowels, only that they fill different slots in the system.

Front vowels tend to be unrounded, while back vowels tend to be rounded, except open back vowels, which tend to be unrounded.

⁷ In Japanese, this slot is filled by an unrounded /ɯ/ rather than a rounded /u/, but since the roundedness distinction is not distinctive in any of these languages, their vowel systems are the same, even if the actual pronunciation of one of the vowels is different.

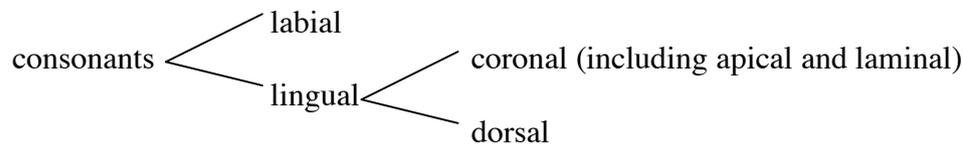
Thus, when the vowel system does not utilize the roundedness distinction, front vowels are mostly realized as unrounded and back vowels as rounded, as in the three-vowel system and the five-vowel system above. Japanese is an exception, in that its only close back vowel is an unrounded /u/.

3.6.2 Consonants

The number of consonant phonemes in a language varies from 6 to 95, the average number being 23.

As we have seen in chapter 2, consonants are characterized by combining place and manner of articulation, sometimes combined with special features relating to the airstream initiation, phonation and nasality.

With regard to place of articulation, all languages make a distinction between **labial** (lip) and **lingual** (tongue) articulation, and all but a very few divide lingual articulation further into **coronal** (front part of the tongue) and **dorsal** (tongue ridge) articulation:



Beyond this, there are various possibilities for further divisions, and they are utilized differently by different languages.

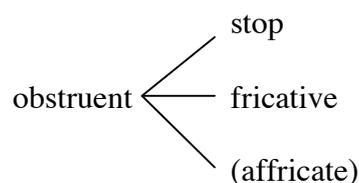
Some universals are worth noting:

While the lower lip may be combined with the upper lip (bilabial) or with the teeth (labiodental), the distinction between bilabial and labiodental is never utilized as a distinctive feature; it is never the only feature distinguishing two phonemes.

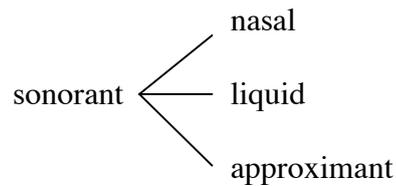
Since the corona is the largest and most flexible of the active (lower) articulators, it provides more room for variation than dorsum and labium.

Many languages distinguish between laminal (tongue blade) and apical (tongue tip) articulations. Some languages divide each of these further into up to three different places of articulation, based on the upper articulator: dental, alveolar and postalveolar.

With regard to manner of articulation, one basic distinction among consonants, found in all languages, is that between obstruents and sonorants. In some languages, the group of obstruents is not further divided. In most languages, however, it is divided in two (stops and fricatives) or three (adding affricates):



Most or all languages divide sonorants into three: nasals, liquids and approximants:



In addition, it is common (though not universal) to divide obstruents into two groups, usually voiced and voiceless (based on phonation), but sometimes unaspirated and aspirated, or a combination of the two. The voiced-voiceless distinction also occurs in sonorants, but much less commonly. The universal tendency is for obstruents to be voiceless and sonorants to be voiced.

3.6.3 Phonotactic universals

Consider the following two universals:

*All languages have syllables ending in a vowel (**open syllables**), but not necessarily syllables ending in a consonant (**closed syllables**).*

All languages have syllables with an initial consonant, but not necessarily syllables without an initial consonant.

Using the abbreviations C for consonant(s) and V for vowel(s), we can set up the following implicational universal:

All languages that allow VC, also allow CVC and V, as well as the universal CV.

The single monosyllabic Turkish word *ev* 'house' thus shows us that Turkish has all four basic syllable types: CV, V, CVC and VC.

Even languages that do allow closed syllables sometimes place severe restrictions on the type of consonant that may occur in syllable-final position. Japanese, for instance, only allows /n/, while Chinese allows /n/, /ŋ/ and /ʃ/, and Thai allows /m/, /n/, /ŋ/, /p/, /t/ and /k/.

In both syllable-initial and syllable-final position, **consonant clusters**, the juxtaposition of two or more consonants within the same syllable, are quite uncommon. Neither Swahili, Fula, Turkish, Japanese, Chinese nor Korean allow them. Some languages, like Thai, allow the juxtaposition of two consonants. The juxtaposition of three consonants, as in English *sprint*, is quite exceptional. The juxtaposition of five consonants in syllable-final position, as in Norwegian *skjelmskt* 'roguish, waggish' (neutral/adverbial form) and German *Herbsts* 'autumn' (genitive case) is close to unique.

Languages also vary in the extent to which they allow the clustering of vowels into **diphthongs** and **triphthongs**. But there seems to be no connection between the restrictions against consonant clusters and the restrictions against diphthongs and triphthongs. Chinese allows no consonant clusters, but allows a wide variety of diphthongs and triphthongs: /ai/, /əi/, /au/, /əu/ (pronounced [ow]), /ia/, /iə/, /ua/, /uə/ (pronounced [wo]), /uai/, /uəi/, /iai/, /iau/, /iəu/ (pronounced [iou]).

3.6.4 Non-arbitrariness of phonological form

We have mentioned several times that the relation between the meaning and the form of a lexical item is arbitrary. There is no good reason why a tree is called *tree* in English, except that most speakers of English agree that this is the case. It is a matter of convention, and other languages follow other conventions.

There are, however, exceptions, and the exceptions have universal features. Most of them fall into one out of four different groups.

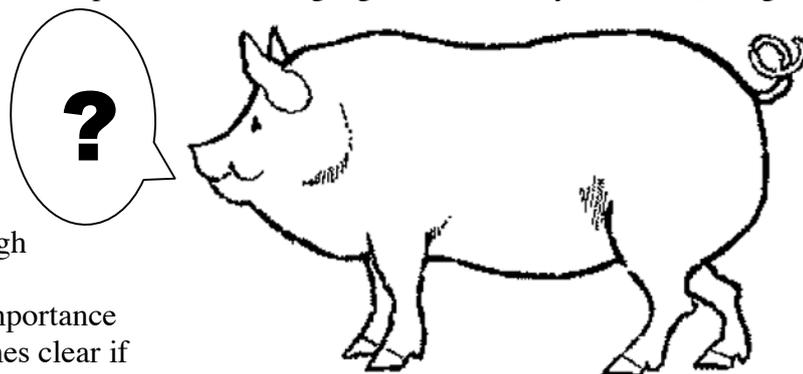
First, **interjections** are often at least partly biologically motivated. The word sometimes written *tut* in English, but pronounced with a single alveolar click (see chapter 2 for an explanation of phonetic terms), is often used in widely different languages to express disapproval, but also, especially when repeated several times, to express a sense of wonder and positive amazement. Depending on the intonation pattern, the word *hm* may be used to express an afterthought, a question, a sense of disapproval (like *hmp*) etc., and a similar syllable (for instance, *hng*) is used in many other languages. While the word *hey* is English, similar words are used in other languages, such as Chinese *ei* and *wei*. Interjections like these are halfway between body language and spoken language. They often contain sounds or



sound combinations that do not belong to the ordinary repertory of the language in which they are used. Unlike most words, their form is not arbitrary. Still, even the form of interjections is at least partly conventional, and despite the cross-linguistic similarities, different languages have different interjections.

Second, the form of **onomatopoeia** (sound-imitating words) is at least partly motivated by the actual sounds they imitate. Some onomatopoeia refer to sounds directly, as in *bang* or *swish*, while others refer to the thing or the activity producing the sound, as in *cuckoo*, *ping-pong* or *murmur*. Unlike interjections, onomatopoeia usually adhere to the sound pattern of the language in which they are used (though there are exceptions,

cf. *bzzzz* referring to the sound of a flying bee). Like interjections, however, their form is not arbitrary, though even more strongly conventional. The importance of convention becomes clear if one compares how different



languages uses widely different onomatopoeia to refer to the sounds produced by animals. A pig, for instance, is conceived of as saying *oink* in English, *nöff* in Swedish, *soch* in Welsh, *kkool-kkool* in Korean, *ut-it* in Vietnamese and *khryu-khryu* in Russian.

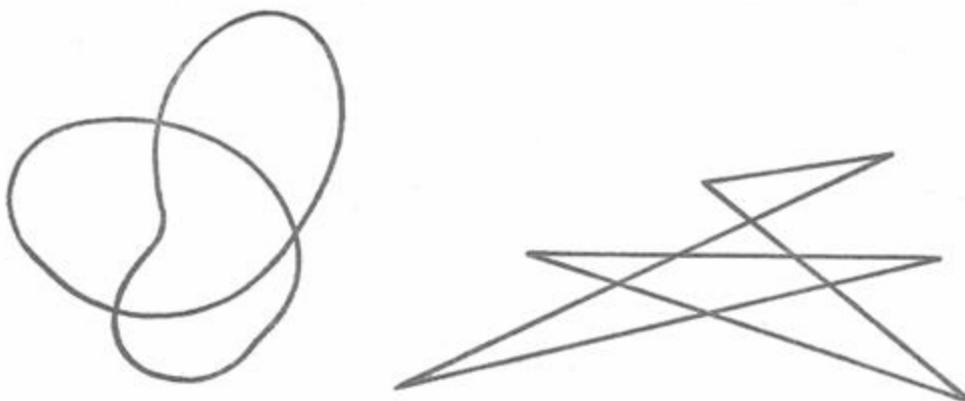
Third, **parental terms** (words for mother and father) are surprisingly similar across the world. The following tendencies seem to be universal:

1. Parental terms contain consonants with full oral closure (like the stops [p] and [d] or the nasals [m] and [n]) much more often than consonants that allow air to flow out of the oral cavity (like the fricatives [f] and [s]).
2. They contain consonants articulated in the front part of the oral cavity (like the labials [p] and [m] or the dentals [d] and [t]) much more often than consonants articulated further back in the oral cavity (like the velars [g] and [k]).
3. They almost always consist of syllables with a single consonant followed by a single vowel, such as [ma] and [pa], excluding both consonant clusters, diphthongs and sequences of vowel plus consonant.
4. They contain open vowels (like [a]) more often than narrow vowels (like [i]).
5. They are often reduplicated, as in [mama] and [papa].

The explanation is that parental terms are built upon nursery forms (intimate terms between parent and child) like *mummy* and *daddy* (or *mama* and *papa*), which in turn are built on some of the early sounds produced by a child before it is able to speak. One related fact is more difficult to explain. Nasals (like [m n ŋ]) occur in well over half the terms for 'mother' (55 percent, according to one estimate) and only in 15 percent (according to the same estimate) of the terms for 'father'. One possible explanation is that terms for mother originate in the child's nasal murmur while breast-feeding.

Fourth, **sound symbolism** is the habitual association between certain sounds and certain elements of meaning. In some cases, sound symbolism is language-specific. In English, for instance, *gl-* is often associated with light and vision, such as *glimmer*, *glisten*, *glitter*, *gleam*, *glow*, *glint* etc. In other cases, sound symbolism is universal. In languages across the world, the narrow front vowel [i] (as opposed to open vowels like [a] and [ɔ]) tends to be associated with small size (as in English *little*, *mini* and *teeny-weeny* as opposed to *large*, *grand* and *vast*; the words *small* and *big* being untypical) and proximity to the speaker (*this* as opposed to *that*). One possible explanation is the small opening of the mouth when [i] is pronounced, as opposed to the bigger opening of the mouth when [a] or [ɔ] is pronounced. Another possible explanation is the fact that the sounds emitted from small objects (for instance, when they fall down) are somehow conceived of as being more *i*-like than the "deeper" sounds emitted from larger objects.

The psychologist Wolfgang Köhler produced two non-sense words *takete* and *maluma* and the following two figures:



When he asked people which word suited which figure, nobody seemed to be in doubt that *maluma* was the more suitable name for the figure to the left, while *takete* was more suitable for the figure to the right. This and similar experiments have been repeated in a wide variety of cultural contexts, such as with Swahili-speaking children in what is now Tanzania, and the result is the same.⁸

In other experiments, monolingual speakers of different languages (such as English and Japanese) were presented orally with a number of word pairs in their own language and the language they did not know and then asked to match the words. For instance, speakers of English might be asked to decide which of the two Japanese words *mikata* and *teki* meant 'enemy' and which meant 'friend'. (The answer is that *mikata* means 'friend', while *teki* means 'enemy'.) In these and a number of similar experiments, the correctness of the answers by far exceeds what could be produced by mere chance. The sound of a word, therefore, often seems to give a hint of its meaning.

While it remains true that the relation between the meaning and the form of a linguistic sign is *basically* arbitrary, there clearly exist tendencies for certain sounds and sound combinations to be associated with certain elements of meaning. As the German poet Morgenstern once said: "All seagulls look as though their name were Emma."

⁸ There are cases, however, where the assignment of the names *takete* and *maluma* to figures similar to the ones used by Köhler have not produced the expected result, for instance, with speakers of the Songe language of Papua New Guinea.