جامعة بيرزيت

BIRZEIT UNIVERSITY

Introduction to Linguistics

ENGL236

By: Linda Hamdan

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Chapter 3. The sounds of language - Phonetics

Linguistics has to do with things like:

1. how the brain processes the sounds.

2. how to produce the sounds.

3. how to put sounds together to create words and sentences, to create a language.

(A spoken one, the written is just a translation to the speech).

Phonetics: the general study of the characteristics of speech sounds ⇨ Sounds that are productively used in words to give a meaning "The sound itself is meaningless".

How can I describe how the sound is produced?

A: we have 3 different levels:

1. Articulatory phonetics: It's the study of how speech sounds are made, produced, or articulated. To do so, we have to look at how the air is pushed from the lungs and how the sound is going to be manipulated into different sounds.

2. Acoustic phonetics: Deals with the physical properties of speech as sound waves in the air.

3. Auditory phonetics: Deals with the perception via the ear of speech sounds.

"We will focus on articulatory phonetics".

To be able to tell sounds apart (distinguish between them), we need to produce a new set of symbols that represent sounds (one symbol = one sound), and such thing is called **International Phonetic Alphabet, IPA.**

IPA (Consonants)

In IPA, we use either brackets [ ] or slashes / /, and the symbol has to be a small letter if we are using English letters to sounds that exist in English language.

/p/	/b/	/m/	/w/	/f/	/v/	/θ/	/ð/	/t/	/d/	/s/	/z/
pa	ba	ma	wa	fa	va	ث	ذ	ta	da	sa	za
play	book	man	were	face	van	think	the	table	did	saw	zoo
				physics ⇨							

A symbol of IPA could be resembling one or more letters (multiple letters can be a single sound).

/n/	/l/	/r/	/ʃ/	/ʒ/	/ʧ/	/ʤ/	/j/	/k/	/g/	/ŋ/	/h/
na	la	ra	sha	ʒ	cha	ja	ya	ka	ga	ng	ha
now	linda	right	shame	measure	chase	judge	yes	kite	gate	king	home
know		write	sure					cat		crank	

In words: n + k / n + g

Major Class/Distinctive/General Features

Producing sounds start with an air wave that travels from the lungs (muscular tissues) that do two things, contracting and relaxing. The air is pushed outside the lungs and creates sounds that are used to create words.

To distinguish between these sounds, there are two major class features that apply on both consonants and vowels. One happens within the larynx, and another happens within the pharynx.

1. Voicing (Phonation)

When air is pushed out by the lungs up through the trachea (the windpipe), it goes to the larynx. Inside the larynx, we have the vocal folds/cords. They are some kind of muscles that contract and relax:

a) When they are contracted (drawn together), the air from the lungs pushes them apart as it passes through, and this would create a vibration effect. Sounds produced this way are called voiced sounds [+v].

b) When they are relaxed (spread apart), the air from the lungs passes between them unimpeded and with no tangible vibration. Sounds produced this way are called voiceless sounds [-v].

Voiceless sounds [-v]: /p , f , θ , t , s , ʃ , k , ʧ , h/ "/h/ is the most voiceless sound in English"

"All vowels in English are voiced, and there are different degrees of contraction and vibration".

2. Nasalization

Within the pharynx, there is a process that decides whether air is allowed into the nasal cavity or not. Here we have a tissue muscle that plays a big role, which is the velum (soft palate), that can contract and relax:

a) If the velum is contracted, it's going to be pushed upwards/expanded backwards, and close the way to the nasal cavity (air is not allowed to go through it). Therefore, the only area to go through is the vocal tract. Sounds produced this way are called oral sounds [-nasal].

b) If the velum is relaxed, it's going to dangle and be lowered. Hence, the passageway before it is going to be open and air is allowed into the nasal cavity. Sounds produced this way are called nasal sounds [+nasal].

Nasal sounds [+nasal]: /m , n , ŋ/ ⇨ These are the only sounds in English that are nasal. Other sounds, including vowels, are oral.

* Sounds can share features together, but there should be at least one feature that makes a sound distinguished from the rest. /p , b/ are both oral, but one is voiceless, while the other is voiced.

Moving on to the vocal tract, something different happens to consonants than the way it happens to vowels. Difference has to do with articulators.

Articulators: are parts of the vocal tract. The most common one is the tongue, is a tissue of muscle, and different parts of the tongue are used to create different sounds.

Articulation: everything that happens in the vocal tract and the nasal cavity.

The tongue can be divided into: Front (tip + blade), center, back.

"Articulators are capable of modifying air to create sounds (cause the process of articulation)".

What happens inside the vocal tract to consonants is different to what happens to vowels, and the difference is established using one particular keyword, **obstruction**.

Obstruction: the process of one articulator coming in contact with another articulator.

"If there is no contact between articulators, there is no obstruction". Consonants have obstruction, vowels don't.

We discussed major features that apply on both consonants and vowels, now we have **features that apply only on consonants**, and **features that apply only on vowels**.

Features that apply on consonants (consonantal features)

When describing a consonant, we can describe:

1. Which articulator contacts another (where the obstruction happens: **place of articulation**).
2. How much contact is there (how much obstruction there is: **manner of articulation**).

1. Place of articulation

Most consonant sounds are produced by using the tongue and other parts of the mouth to constrict the shape of the oral cavity through which the air passes.

a) Bilabial [p , b , m , w*]

These are sounds formed using both upper and lower lips. [+bilabial]

b) Labiodental [f , v]

These are sounds formed using the upper teeth and the lower lip. [+labiodental]

c) Interdental [θ , ð]

These are sounds formed using the upper set of teeth and the tip of the tongue. [+interdental]

d) Alveolars [t , d , s , z , n , l , r]

These are sounds formed using the tip of the tongue against the alveolar ridge. [+alveolar]

e) Palatals [ʃ , ʒ , ʧ , ʤ , j]

These are sounds formed using the blade of the tongue against the hard palate. [+palatal]

f) Velars [k , g , ŋ]

These are sounds formed using the back of the tongue against the velum. [+velar]

g) Glottal [h]

There is only one sound that is produced without using the tongue and other parts of the mouth, which is [h], it's formed using the glottis (a space between the vocal folds in the larynx), and air passes. [+glottal]

In consonants, we don't use the center part of the tongue to create them.

* Every feature is called a natural class, which means a group of sounds that share features together.

2. Manner of articulation

a) Stops

Happens due to a full obstruction where we have full closure between the articulators.

We have 2 types of stops:

1. Oral stops (plosives) [p , b , t , d , k , g]

To produce oral stops (plosives), first we're going to push air behind the articulators, then hold it for a very short time, then release it suddenly (the nasal cavity here is closed).

2. Nasal stops [m , n , ŋ]

To produce nasal stops, first we're going to push air behind the articulators, with that, the velum is lowered, which means that the nasal cavity is open, and the air is going to push against articulators and exit through the nasal cavity (they have continuous release of air, not sudden).

Oral stops: [p , b , t , d , k , g].

Nasal stops: [m , n , ŋ].

Bilabial alveolar velar "We don't have any other places of articulation for stops".

b) Fricatives [f , v , θ , ð , s , z , ʃ , ʒ , h]

It involves most blocking the air stream/partially stop the airflow, and having the air push through a very narrow and small opening/passage. With this, the air creates friction with the articulator.

c) Affricates [ʧ , ʤ]

They are sounds that begin like stops and end like fricatives, meaning that the air is going to be pushed behind the articulators and be held, then it's going to be released constantly.

d) Approximants

We have two categories:

1. Liquids [l , r]

Liquid sounds are sounds that have obstruction, but it's irregular.

(When can an obstruction be regular?)

A: a. Air has to pass through the center of the vocal tract, particularly the center of the tongue (central release).

b. When creating sounds, 2 articulators must be used.

Both [l , r] are irregular; because when we release air to produce [l], air is going to be pushed through the sides, not the center, and this is called natural release. As for the sound [r], 4 articulators are used to create it, not 2: The tip and the blade, pushed against the back of the alveolar ridge and the front of the hard palate. Both sounds are exceptions to what we usually know as normal.

Other names for:

[l] ⇨ lateral

[r] ⇨ retroflex "called like that because of the movement of the muscle".

2. Glides [w , j]

These sounds can also be called semi-vowels, meaning that they're almost vowels but are not, and they're produced with the tongue in motion (gliding), or from the position of a vowel.

(Why are they not vowels then?)

A: Although there's no obstruction when producing these sounds, we can't consider them vowels because phonologically they occupy positions in words that are normally occupied by consonants (as we will see in the next chapter). Therefore, we call them semi-vowels as how phonetically they behave like vowels, but phonologically they behave like consonants.

What do liquids and glides have in common? ⇨ Both are sounds that have irregular obstructions.

Features that apply on vowels

Unlike consonants, vowels have no obstruction, and they are produced with a relatively free flow of air, meaning that the vocal tract is open, and the air passage in the vocal tract with the way in which the tongue influences the shape through which the airflow must pass – are things we consider when describing vowel sounds.

When producing vowels, we'll mostly focus on the tongue with its different parts: front, center, and back.

The tongue can do 2 types of movement:

1. Horizontal movement

2. Vertical movement

Based on this, we have 2 features:

1. Position feature

Position feature is a feature that indicates the movement of the tongue, which is a sideways movement (front versus back area). And in this feature, we have smaller features:

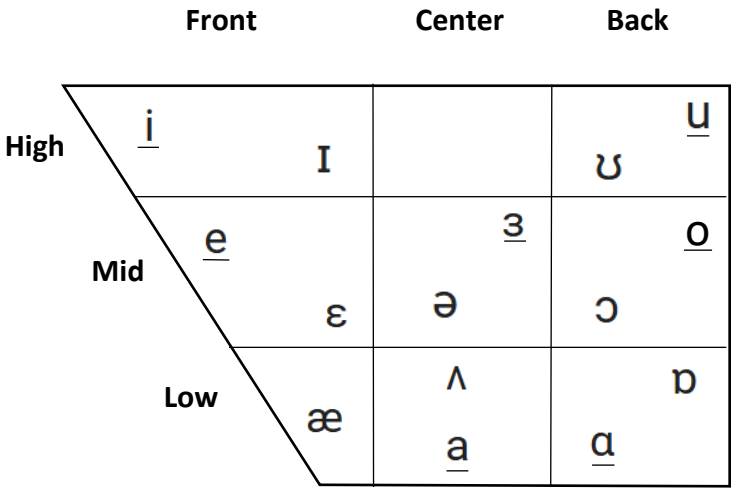
a) front [+front] b) central [+center] c) back [+back]

2. Height feature

Height feature is a feature that indicates the vertical movement of the tongue (high versus low area). And in this feature, we have smaller features:

a) high [+high] b) mid [+mid] c) low [+low]

Different vowels can be put in different positions and heights. To make it simple, see the chart below.



As you can see, vowels are listed according to the position and height of the tongue, but we still have an issue. Each vowel has to be different from the other. But if I say that a vowel is front high, for example, we find two vowels [i , ɪ], not one. So, to distinguish between them, **we need two other features**.

3. Roundedness

Roundedness is a feature that has to do with the shape of the lips, and different vowels have different degrees of roundedness, with the [u] being the most rounded vowel, and the [æ] being the less rounded vowel. The concept of roundedness is influenced by the position and height of the tongue. "The more back and high the tongue is, the more rounded the lips are".

According to that, rounded vowels [+R] are: [u , ʊ , o , ɔ , ɒ]

All rounded vowels are back, but not all back vowels are rounded: [ɑ] = [-R]

4. Tension

Tension is a feature in which it indicates the state of the muscle of the tongue. This muscle can contract and relax:

a) If it's contracted, the vowel is described as a **tense vowel**.

b) If it's relaxed, the vowel is described as a **lax vowel**.

"In the chart above, vowels that **have a line** under them are **tense** vowels. The ones that **do not have a line** are **lax**".

Normally, tense vowels tend to be long, with the exception of **[ɑ]**, and lax vowels tend to be short, with the exception of **[æ].**

Let's see how every vowel is pronounced:

[i]: Tree [tri]/ Keep [kip]/ Seat [sit]/ Beat [bit]

[ɪ]: Bit [bɪt]/ Sit [sɪt]/ Hid [hɪd]

[e*]: We don't actually have this as a true vowel in English. The only time it's pronounced is when pronouncing the diphthong **[eɪ]**, as it will be discussed in the next section.

[ɛ]: Dead [dɛd]/ Set [sɛt]/ Head [hɛd]/ Bet [bɛt]

[æ]: Rat [ræt]/ Bat [bæt]/ can [kæn] "more common than [ɑ]"

[a]: father [faðər]/ Can't (UK) [kant]

[ʌ] (called wedge): Blood [blʌd]/ Judge [ʤʌʤ]

[ə] (called schwa): Father [faðər]/ Yes [jəs]/ Beating [bitəŋ]/ Acted [æktəd]/ Teacher [tiʧər]

[ɜ]: Bird [bɜrd]

[ɑ]: Hot [hɑt]/ Cot [kɑt]

[ɒ]: Hot [hɒt]/ Cot [kɒt]

Both [ɑ] and [ɒ] are correct and can be used with the same words. The only difference is the accent (US/UK), which is not an issue.

[o*]: Same as [e] "[oʊ]".

[u]: True [tru]/ Boo! [bu]/ Sue [su]

[ʊ]: Book [bʊk]/ Took [tʊk]/ Put [pʊt] "more common than [ɔ]"

[ɔ]: Bought [bɔ:t]/ Caught [kɔ:t]

"(:) is a diacritic put to indicate that the vowel is long"

Issues that <u>must</u> be noted regarding the schwa [ə]

The schwa sound is actually the most used vowel, and that is because it is a reduced vowel, which means that it's very short to the point that it can change depending on which sounds follow or precede it.

When can I use the schwa?

a) if it ends with a short vowel followed by [r]: Teacher [tiʧər] ⇨ Note that the [r] can be included or excluded when doing the transcription.

b) If a word ends with (ing): Acting [æktəŋ].

c) If a word ends with (ed) and the vowel is short: Acted [æktəd].

Note that some exceptions might occur. For instance, some words may end with (ed), but when pronouncing them, a short vowel doesn't appear. So, to put a [ə] in this case, (ed) has to appear as two sounds.

d) If a lexical word (N, V, Adj, Adv) has only one vowel, this vowel **cannot** be a [ə]:

- Bet [bət] ✗ [bɛt] ✓

- A functional word like (and) in (you 'n I), can have a schwa.

- Took ⇨ This is one vowel, and the word is lexical ⇨ cannot be a schwa.

Diphthongs

In addition to single/true vowels, there are sounds that consist of a combination of hundreds of vowels, but when we transcribe, we only show it as a combination of two vowels, the one I begin with and the one I end with.

Note that the shift between the two vowels is a gradual shift, not sudden.

For phonological reasons, a diphthong is considered 1 single vowel since it occupies a position where one vowel normally occupies.

Some phoneticians say that these vowels are not true vowels; because we can't really describe them since the features change when pronouncing them. That's why we call them diphthongs. (Diphthongs = multiple tongue positions).

We need to know 5 diphthongs:

1. [eɪ] as in Play [pleɪ]

2. [aɪ] as in Try [traɪ]

3. [ɔɪ] as in Boy [bɔɪ] ⇨ Note that (y) at the end of the word is mostly transcripted to a diphthong.

4. [aʊ] as in How [haʊ]

5. [oʊ] as in Boat [boʊt] ⇨ The only diphthong that starts rounded and ends rounded.

Chapter 4. The sound patterns of language - Phonology

Phonology is the description of the systems and patterns of speech sounds in a language that analyzes how sounds are used, and how sounds are put together in an actual connected speech. Because of that, phonology is concerned with the abstract or mental aspect of the sounds in language rather than the physical articulation of speech sounds.

Phonemes, Phones, and Allophones

A **phoneme** is a word taken from the word **phone**, which means "sound", and a phoneme is **the origin of the sound and the place in the brain where sounds can be stored and replaced with each other without changing the meaning**. Seeing how the phoneme is not a sound but rather the place where sounds are, we can say that a phoneme is **abstract**.

Abstract: Not a sound/ not a physical produced segment (it's in the brain).

In addition, phonemes are also **contrastive**, meaning that if I change the place where I take the sound from (the phoneme itself), the meaning will change.

Contrastive: Make something different.

To indicate phonemes, we use slash marks "/ /".

While the phoneme is abstract unit or sound-type, there are many versions of that sound type regularly produced in actual speech. We can describe those different versions as **allophones**.

Allophones: Sound transformation that is used to make words in a language/ the sound itself that is pronounced.

There's a difference between allophones and phones. Allophones are sounds used in everyday speech, while a phone is any sound in general, not necessarily used in speech, like the sound of clapping.

Since allophones are sounds, they are **physical** in the sense that we can hear them. And an allophone can be described as **non-contrastive**, meaning that changing one allophone with another doesn't change the meaning.

Phonemes: Abstract + contrastive.

Allophones: Physical + non-contrastive.

To indicate allophones, we use brackets "[ ]".

To make things more obvious, let's give some examples:

city			**قال**			
city	cidy	ci’ey	چال	ئال	كال	قال

We can pronounce these two words differently depending on the accent, and all of them come from one source.

Even if we talk to a child, the child will understand that all these different pronunciations belong to the same word. That's because all these sounds are stored in the same area in the brain as one thing. Therefore, they can replace each other without changing the meaning.

The different sounds in the same words are: Allophones.

The source where all the sounds come from (the area in the brain): Phonemes.

Although phonemes are not sounds, they still have to be presented in a way. Slashes are used, but we also need symbols. Simply, we see what the most common allophone is and we use it:

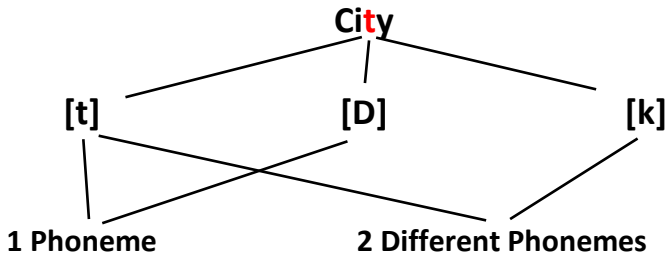
City ⇨ The most used allophone for “t”: [t] ⇨ /t/

“[t] is an actual sound, /t/ is not”.

To distinguish between allophones and see which ones belong to the same phoneme. We do a **commutation test**.

Commutation test: Replace allophones and see if the meaning changes.

This can use minimal pairs to identify allophones and their phonemes (will be discussed after this).



We can see that [t] and [D] belong to the phoneme /t/ but [k] doesn't, so it belongs to a different phoneme “/k/”.

In English, we'll notice a few results to the concept of commutation test.

Allophonic variations/ Alternation of sounds.

1. Unreleased sound feature

Happens to plosives (oral stops) when they are located at the end of the word. What normally happens to plosives is: push air towards the articulator, hold it, and release it. But what happens here is that we are at the beginning of the process of pronouncing the plosive, but we don't release the air unless we try to emphasize the word.

In this case, the sound is called an unreleased sound **[-release]**, and is indicated using the superscripted diacritic " ˺ ".

Diacritic: A symbol used to indicate features in IPA and is not a sound.

E.g. Rap [ræp˺], Mate [meɪt˺].

2. Aspiration

applies to voiceless plosives [t/k/p] at the beginning of the word. What happens is that the sound (unlike the previous phone "unreleased") has a full release of airflow **[+aspirated]**.

The sound is indicated using the superscript " ʰ ".

E.g. Pay [pʰeɪ], Key [kʰi]

3. Assimilation "have a change in features of certain sounds"

We can have alternations or changes that take place in actual sounds when replacing one sound with another due to certain phonetic environments. This is called assimilation, which is an example of **coarticulation effects** "the other example is elision", and it means that an allophone is replaced by another allophone that is more similar to the sound that precedes it or follows it.

There are some examples that show this:

a) Dentalization

Happens when a sound, mostly alveolar, is changed to an interdental sound because it is followed by an interdental. This happens because the pronunciation becomes easier this way.

E.g. Eighths [eɪtθ] ⇨ [t] is alveolar. [θ] is interdental.

When pronouncing "eighth", we push the tip of the tongue against the alveolar ridge, then forward against the upper set of teeth. So, to make it easier, we skip the alveolar ridge and push against the teeth immediately.

Dentalization is indicated using the diacritic " ̪ " ⇨ Dental alveolar symbol. ⇨ [eɪt̪θ]

b) Nasalization

Happens when a vowel is followed by a nasal sound. As said before, all vowels are oral [-nasal], but in cases where it is followed by a nasal, the nasal sound influences the vowel to change from oral to nasal (the allophone is changed).

The sound is indicated using the diacritic tilde " ˜ ".

E.g. Seen [sĩn], and [æñd].

Vowels: Phonemically: Oral.

Allophonically: if it's before oral sounds, it's oral. If it's before nasal sounds, it's nasal.

c) New IPA symbols (Phonetic transcription)

1) The flap [D]

When the sound [t] is preceded or followed by vowels, it becomes the flap [D]. We flap the tongue against the alveolar ridge to create the sound [D] "يعني الصّوت يخف شوي ويميل لحرف الدّال مخلوط مع راء مدري"

E.g. Bitter [bɪDər], City [sɪDi].

2) The glottal stop [ʔ]

In the same way, instead of the [t] sound or [D] sound, the glottal stop [ʔ] can be put.

E.g. Bitter [bɪʔər], City [sɪʔi].

Minimal pairs and sets

Sometimes we may have words that are identical in form/phonological structure, except for a contrast in one phoneme occurring in the same position, which makes a change in meaning.

If we have two words like that, they can be described as a minimal pair.

E.g. Pat/Bat, Sight/Side, Fit/Fat.

If we have a group of words that can be differentiated, each one from the other, by changing one phoneme in the same position of the word, it's called a minimal set.

E.g. Fat/Fit/Feet/Fought/Foot/Fate, Pig/Big/Rig/Dig/Wig.

Phonotactics

The concept of phonotactics discusses the idea that when we speak, we speak in sequence. So, if I say "lig", it's going to be l ⇨ i ⇨ g, so it's a sequence of 3 sounds.

Phoneticians noticed that the pattern we have in a language is not random. So, something like [rnɪg] is not a word that could normally occur/happen in English. We have certain systems/ constraints/ limitations as what arrangements or sequences of sounds are possible. To know all of that, we have to move to a larger phonological unit called **syllables**.

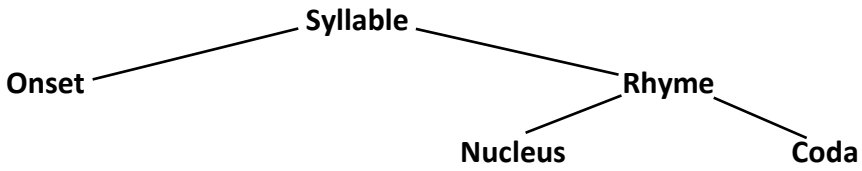
Syllables

As we mentioned before, we create an air stream by pushing air in or out the lungs. When the muscles of the lungs contract, air is going to be pushed out and create sounds. These sounds are not necessarily a single sound. We can create multiple sounds using one push/ contraction.

These sounds are a unit called syllable.

A syllable must contain a **vowel** or a **diphthong**. This is the most important part of a syllable. And it may or may not contain consonants.

In general, the basic elements of a syllable can be shown as follows:



"A syllable is like CVC".

Let's give an example to all of this:

- Figly [fɪgli] ⇨ **It's a made-up word btw :D**

When pronouncing this word, I can create one push and say (fig), pause, and then another push/ contraction, and say (ly). Therefore, this word has 2 contractions that give me 2 syllables.

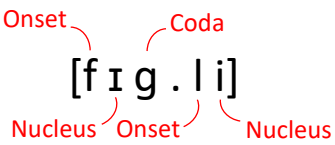


fig ⇨ syllable "1"/ ly ⇨ syllable "2"

We can have syllables that have only a V, syllables that have CV, VC, or syllables that have CVC.

We have 2 kinds of syllables:

1. Open syllable: A syllable that has no coda (Coda is empty), like [li] in [fɪgli]/ [aɪ]

2. Closed syllable: A syllable that has a coda, like [fɪg] in [fɪgli]/ [ɛgz]

The smallest syllable in English would be just a V, while the longest syllable can go up to 3C in onset, a V, and 4C in coda (not all accents allow for this variation).

E.g. Strengths ⇨ [$\underset{3C}{str}\overset{V}{\text{ɛ}}\underset{4C}{\text{ŋgθs}}$]

Strangers ⇨ [streɪndʒərz]

1 syllable — another syllable

"Using CV is part of the typological analysis".

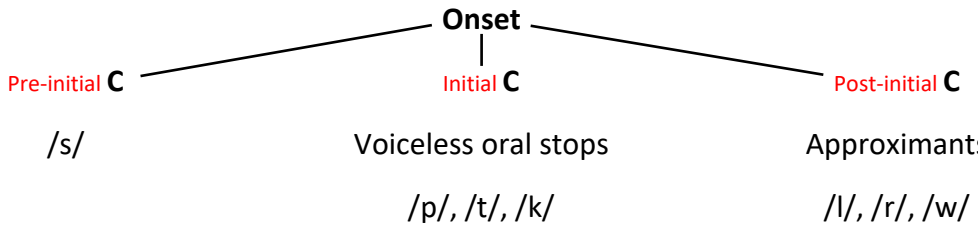
"More syllables = more contraction of lungs = more difficult to pronounce".

Consonant clusters (the core of phonotactics)

In a syllable, we may have a sequence of consonants that are not interrupted by a vowel. This is called a **consonant cluster**. Since we have it, then it means that every language allows for a certain consonant cluster:

In the **onset**, if it has 2 consonants, the second one has to be one of the liquids /l/, /r/, or the glide /w/: black, bread, twin.

If the **onset** has 3 consonants, it's going to be like this:



E.g. Spring, strong, stream, square.

Since onset and coda only exist in the form of C, /j/ and /w/ are considered consonants, although they articulate like vowels. That's because they appear in the onset and coda, but they cannot appear in the nucleus like vowels do.

Elision

Elision is one of the coarticulation effects*.

* **Remember: coarticulation**: the process of making one sound almost at the same time as the next sound/ articulating sounds in a way that makes them blend together "influence each other".

Elision is **the process of not pronouncing a sound segment that might be present in the deliberately careful pronunciation of a word in isolation**. Meaning it's deleted because it's hard to pronounce it due to the influence of another sound preceding or following it.

E.g. Friendship ⇨ [frɛnʃɪp] "the [d] is removed"

Prisoner ⇨ [prɪznər]

Cabinet ⇨ [kæbnət]

Camera ⇨ [kæmrə]

Notice that the schwa [ə] is more likely to be removed in such cases.

Chapter 6, 5. Morphology and Word Formation

Morphology: The study of forms*, used to describe the type of investigation that analyzes all basic "elements" used in a language. These elements are **morphemes**.

* **Form:** How we pronounce and spell a word.

Morphemes: The smallest/ minimal units of meaning (grammatical function).

E.g. Students ⇨ 3 morphemes (study + ent + s)

Reopened ⇨ 3 morphemes (re + open + ed)

Tourists ⇨ 3 morphemes (tour + ist + s)

Free and bound morphemes

There is a broad distinction between 2 types of morphemes:

1. Free morphemes: Morphemes that can stand by themselves as single words. These can be generally identified as the set of separate English word forms, such as basic nouns, verbs, conjunctions...etc.

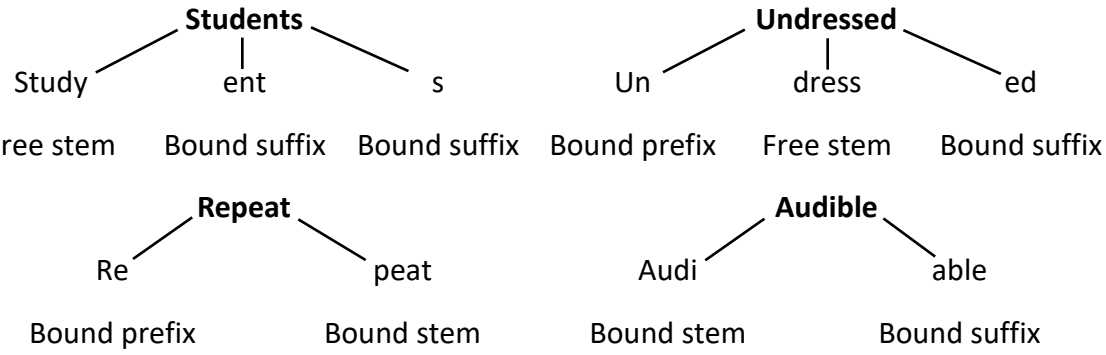
The basic word forms are called **stems**.

2. Bound morphemes: Morphemes that cannot normally stand alone and are typically attached to another form. (most common bound stems are Latin).

The forms that appear as bounds are called **affixes**. Affixes cannot appear on their own since their job is to modify. Also, sometimes a stem can be bound because they need an affix.

"All affixes (prefixes/ suffixes) are bound morphemes".

E.g.



Every word has to have at least 1 stem: Cupboard ⇨ 2 stems.

Lexical and functional morphemes

In general, we can think of meaning as 2 things: **lexical**, which is the one we find in the dictionary, and **grammatical**, which only has grammatical information about a word.

When it comes to free morphemes, they fall into 2 categories:

1. Lexical morphemes: Morphemes that have a meaning in the dictionary. They carry the "content" of the messages we convey.

Lexical morphemes (free stems) are **nouns, verbs, adjectives, adverbs**.

Lexical morphemes can be added to the language easily, so they are treated as an **open class of words**.

2. Functional morphemes: Morphemes that can't attach to affixes (morphemes), nor do they have a meaning in the dictionary, meaning that they are grammatical.

Functional morphemes (free stems) are **conjunctions, prepositions, articles, pronouns, proper nouns**.

Functional morphemes are almost never added to the language, so they are treated as a **closed class of words**.

E.g.	**Yellow**	**And**
	free lexical stem	free functional stem

Derivational and inflectional morphemes

When it comes to bound morphemes (affixes), they fall into 2 categories:

1. Derivational morphemes: Morphemes that are used to make new words or different meaning in the same category or make words of different grammatical category from the stem.

A word always has a base form, which is the word with its last morpheme being removed:

Student ⇨ study = base form. Any affix that changes the lexical meaning of the base form that is attached to is derivational.

2. Inflectional morphemes: Morphemes that are not used to produce new words or different lexical meaning, but rather to indicate aspects of the grammatical function of the word (changes grammatical meaning).

The inflectional morphemes are 8:

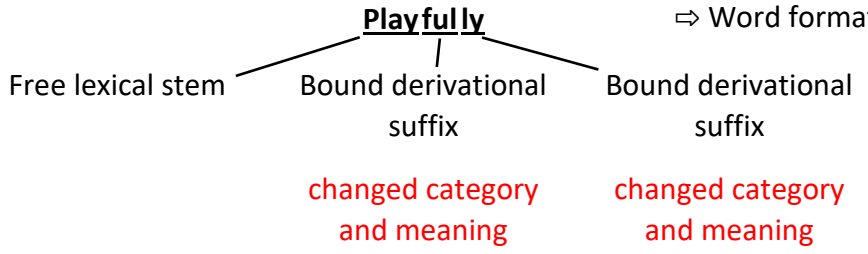
1. **Possessive 's:** Linda's book
2. **Plural s:** Books
3. **Third person singular -s:** He likes it
4. **Present participle -ing:** I'm studying
5. **Past tense -ed:** I studied
6. **Past participle -ed:** I have studied
7. **Comparative -er:** Faster
8. **Superlative -est:** Fastest

All inflectional morphemes are suffixes.

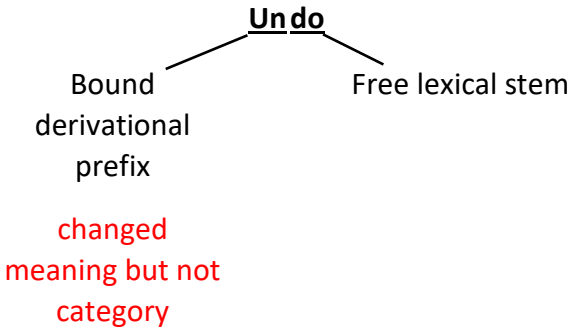
Morphological Description

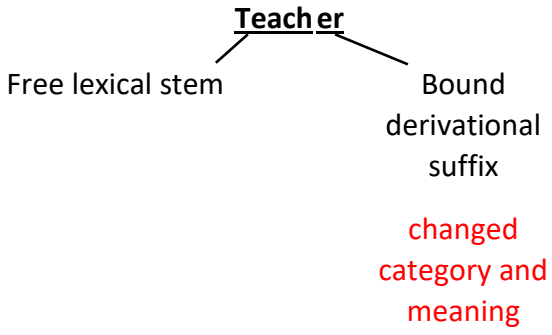
Morphemes can be described by seeing whether they are free or bound. If free, they will be either lexical or functional. If bound, they will be either derivational or inflectional. If we have 2 bound affixes, one derivational and one inflectional, the derivational will appear first, then it will be followed by the inflectional.

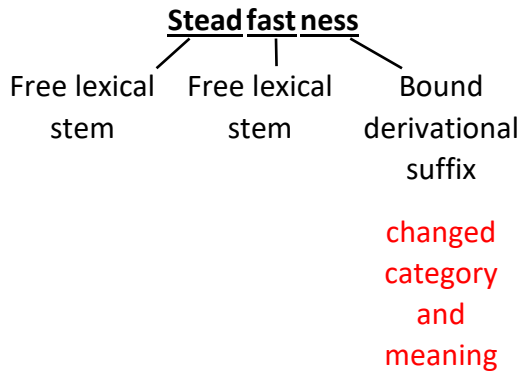
E.g.

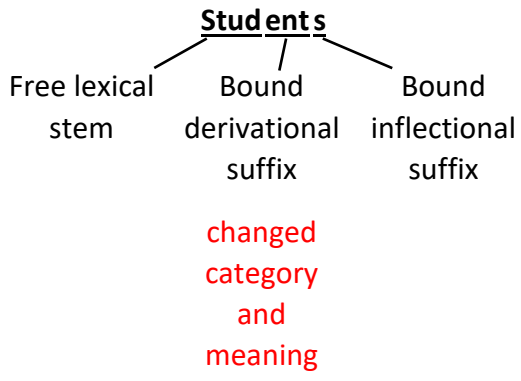


⇨ Word formation process: Derivation*









* We'll soon get to word formation processes.

Problems in Morphological Description

An extremely large number of English words owe their morphological patterning to languages like Latin and Greek. Consequently, a full description of English morphology will have to take account of both historical influences and the effect of borrowed elements since a derivational relationship might not exist, such as "law – legal".

Morphs and Allomorphs

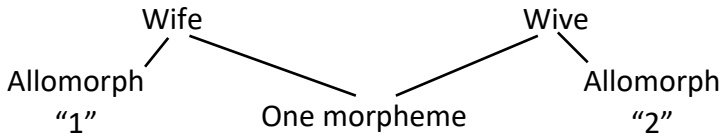
Morphs are the actual forms used to realize morphemes (the same as when we talked about phones in phonology).

E.g. Cats ⇨ 2 morphs: **Cat** + **s**

lexical morpheme inflectional morpheme

Sometimes, a morpheme can have allomorphs. That is when we find a group of different morphs "forms", all versions of one morpheme. "Different forms of morphs result from the same morpheme".

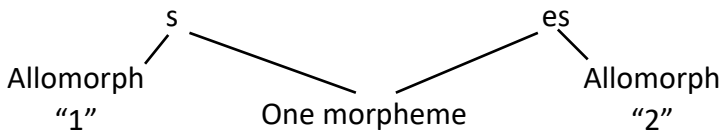
E.g. Wife – Wives ⇨ same meaning in the dictionary, but 2 different forms, and they belong to the same morpheme:



Wife/ Wive as a morpheme: free stem.

Wife/ Wive as an allomorph: Wife = free, Wive = bound (can't exist without the plural S).

Other E.g. Cats – Houses ⇨ same grammatical meaning "plural S", but two different forms when pronounced (/s/, /əz/), and they belong to the same morpheme:



Another allomorph of plural can be **zero-morph**: the plural form of (sheep) is (sheep + **Ø**).

Other languages

1. Kanuri (Nigeria)

	Adj	N	
"Excellent"	Karite	Namkarite	"Excellence"
"Big"	Kura	Namkura	"Bigness"
	Free stems that can stand on their own.	Bound derivational affixes used to derive nouns from adjectives.	

2. Ganda (Uganda)

	Singular	Plural	
"Doctor"	Omusawo	Abasawo	"Doctors"
"Woman"	Omukazi	Abakazi	"Women"
	Sawo and Kazi are bound stems because they need an inflectional prefix to indicate whether they're singular (omu) or plural (aba).		

3. Ilocano (Philippines)

	Singular	Plural	
"Head"	Ulo	Ululo	"Heads"
"Road"	Dalan	Daldalan	"Roads"
	Free stems	In plural, a prefix is added, but it has a different form with each word. What happens is that the 1st syllable is copied and added to plural form.	

The process is called **reduplication**.

Words formation

1. Etymology

The study of the origin and history of a word, how it used to be and how it changed to what it's like now. Many of our technical words come through Latin and Greek.

2. Coinage

The invention of totally new words, and nowadays it's one of the least common processes of word formation because we have most of the words we need.

E.g. of recent coinage processes: Aspirin, Vaseline, Kleenex, Google.

Sometimes a proper noun (name of a person or place) can be used as a common noun. New words based on proper noun are called **eponyms**. This isn't exactly a coinage process because the word wasn't invented from scratch.

E.g. Sandwich (from the 18th century, Earl of Sandwich)

Fahrenheit (from the German Gabriel Fahrenheit)

Jeans (from the Italian city of Genoa)

3. Borrowing

Taking over of words from other languages, using it in a local language, and maybe modify it phonologically.

E.g. Alcohol (الكحول), スーパーマーケット "Supamaketto" (Supermarket)

A special type of borrowing is **loan translation/ calque**. In this process, there's a direct translation of the elements of a word into the borrowing language.

E.g. Feedback ⇨ تغذية راجعة

Hot dogs ⇨ Perros calientes

4. Compounding

The process of joining two separate words (stems) to produce a single new form with a different meaning. (We don't think of the literal meaning of stems).

E.g. Steadfast, fingerprint, sunburned, doorknob.

5. Blending

The combination of two separate forms (beginning of one word with the end of another word). "We don't use full forms of stems".

E.g. Smog (smoke + fog), Smurk (smoke + murk), Bits (binary + digits).

6. Clipping

Reducing a word that has more than one syllable to a shorter form with 1 or 2 syllables.

E.g. Fax (facsimile), Gas (gasoline), Ad (advertisement).

A type of reduction favored in Australian and British language English produces forms known as **hypocorisms**.

Hypocorisms: Longer word reduced to 1 syllable, then -y or -ie is added to the end.

E.g. Telly (television), Movie (moving pictures), Barbie (barbecue💀).

7. Backformation

A word of one word that is reduced to form a word of another type (remove the derivation of affix that already exists in a word).

E.g. Liaise (from liaison), Donate (from donation), Babysit (from babysitter).

"Backformation is the opposite of derivation".

8. Conversion

Having a word that maintains its form without any addition or reduction, but picks new meaning (a change in the function of a word "category change/functional shift").

E.g. Chair (N) ⇨ (V), Vacation (N) ⇨ (V), Guess (V) ⇨ (N), Must (V) ⇨ (N), To print out (Phrasal verb) ⇨ (N), See through (V) ⇨ (Adj), Dirty (Adj) ⇨ (V).

9. Acronyms

New words formed from the initial letters of a set of other words.

E.g. CD, NATO, laser, scuba, snafu, MADD, WAR, ATM, PIN.

10. Derivation

The most common word formation (check page 21).

Chapter 7, 8. Grammar and Syntax

Grammar: The process of describing the structure of phrases and sentences in a way that we account for all the grammatical sequences in a language and rule out all the ungrammatical sequences.

The parts of speech (word classes)

1. Nouns: Refer to people, objects, creatures, places, qualities, phenomena, and abstract ideas.

2. Articles: (A, An, The). Used to define a noun or describe it grammatically, and they cannot be stacked.

3. Adjectives: Used to describe a noun lexically, and they can be stacked.

4. Verbs: Refer to actions and states.

5. Adverbs: Used to describe a verb. Some adverbs, called **intensifiers**, precede adverbs and adjectives to modify and describe them.

6. Prepositions: Used with nominal phrases to provide information about time, place, and other connections involving actions and things.

7. Pronouns: Used in place of nouns to refer to people and things already known.

8. Conjunctions: Used to make connections and indicate relationships.

Traditional grammar

These word classes/ categories come from traditional grammar, which has its origins in the description of languages such as **Latin** and **Greek**. Since they were well-established grammatical descriptions, it seemed appropriate to adopt their categories and apply them in the analysis of new languages.

The best-known terms from that tradition are those used in describing the parts of speech.

Traditional analysis

There is a difference between Latin and English when it comes to analyzing. In Latin, for example, the verb changes its form depending on who is performing the action (person), and whether it's singular or plural.

E.g. I love ⇨ amo, we love ⇨ amamus

In English, it's different. Verb forms don't change much and usually stay the same, so instead of focusing on it, we focus on the pronouns, which indicate who is performing the action.

Although some grammatical categories in English are influenced by Latin, these categories don't work the same way since the verb system is different.

The prescriptive and descriptive approach.

There is an approach that says that the structure of English sentences should be like the structure of sentences in Latin, meaning that there are proper rules that should be followed.

This is characterized as prescriptive approach (compare what's grammatical or not in relation to formal language).

1. I want to quickly finish the book. ⇨ According to the rules of proper use of language, it is ungrammatical to split an infinitive, meaning having an adverb between inf to and a verb. That's because in Latin, an inf to and a verb used to be one word unlike in English (verb used to be a bound stem).

2. He's the man I talked to. ⇨ This sentence could be seen ungrammatical since - according to the rules of proper language -, a preposition cannot occur at the end of a sentence and has to be followed by a nominal phrase. Such preposition at the end is called **dangling preposition**.

Formal: I want to finish the book quickly.

He is the man to whom I talked.

Just because some forms can seem ungrammatical, it doesn't mean that the English forms are bad because of breaking the rule of Latin grammar. Instead, we note that there are structures in English that differ from those found in Latin.

This leads us to an approach called descriptive approach.

Descriptive Approach: Description of regular structures of the language as it was used, not according to some view of how it should be used.

According to the definition, forms such as split infinitive and dangling preposition can be considered grammatical in some dialects since native speakers use them.

- Prescriptively: Ungrammatical

- Descriptively: Grammatical.

Structure Analysis

One type of descriptive approach is called structural analysis, which investigates the distribution of forms in language. The method involves **the use of test-frames that can be sentences with empty slots in them:**

- The _____ bit the boy.

- _____ makes a lot of noise.

A lot of forms can fit into these slots. So, they fit in the same test-frames and are likely to be examples of the same grammatical category, which is nominal phrase (NP).

- The angry dog bit the boy.

- It makes a lot of noise.

Even though some forms are from the same category, not all can fit the same way: The ~~it~~ bit the dog. This allows to improve on the Latin analysis that says a pronoun replaces a noun. In English, it's more accurate to say that a phrase replaces a phrase (NP with NP).

Constituent analysis

An approach with the same descriptive aims is constituent analysis. It shows how different small parts, also known as components, go together to form larger constituents. First, constituents merge together to create phrases.

Phrase: One word or more combined together to create one meaning or function within the sentences.

Each phrase has to have specific categories (constituents) within it, and not random, as it will be demonstrated in the phrase structure rules.

Phrase Structure Rules

Syntactic and phrase structural rules are rules that state that the structure of a phrase of a specific type will consist of one constituent or more in a particular order, and are used to present the information of a tree diagram (discussed later) in another format. This enables us to generate a very large number of sentences with what looks like a very small number of rules.

Syntactic structural rules are expressed below:

1. S ⟶ NP VP	**7.** VP ⟶ { V (AdvP) / V NP (AdvP) / V NP NP (AdvP) / V NP PP (AdvP) / V AdjP (AdvP) / V PP (AdvP) / V CP (AdvP) }
2. NP ⟶ { Pro / PN / (Art) (AdjP) N (PP) }	
3. PP ⟶ P NP	
4. AdjP ⟶ (Int) Adj	
5. AdvP ⟶ (Int) Adv	
6. CP ⟶ C S	

Symbols used in syntactic analysis (structure rules)

S = Sentence (Clause)	**Adj** = Adjective	***** = Ungrammatical sentence
NP = Nominal phrase	**AdjP** = Adjective Phrase	**( )** = Optional constituents
N = Noun	**Adv** = Adverb	⟶ = Consists of/ Rewrites of
Pro = Pronoun	**AdvP** = Adverb Phrase	**{ }** = Only one of these constituents must be selected (either/ or)
PN = Proper noun	**Prep (P)** = Preposition	
C = Complementizer	**PP** = Prepositional Phrase	
CP = Complementizer Phrase	**V** = Verb	
Art = Article	**VP** = Verb Phrase	

Lexical Rules

As Phrase Structure Rules generate structure, lexical rules that specify which words can be used when rewriting constituents are needed to turn those structures into recognizable English. (See page 27, The Parts of Speech.

A Lexical Rule can be shown like this: V ⟶ {follow, help, see…}

Labeled and Bracketed Sentences

Labeled brackets: A type of diagram to show how constituents in sentence structure can be marked off. Brackets are put around each constituent, and more brackets around each combination of constituents.

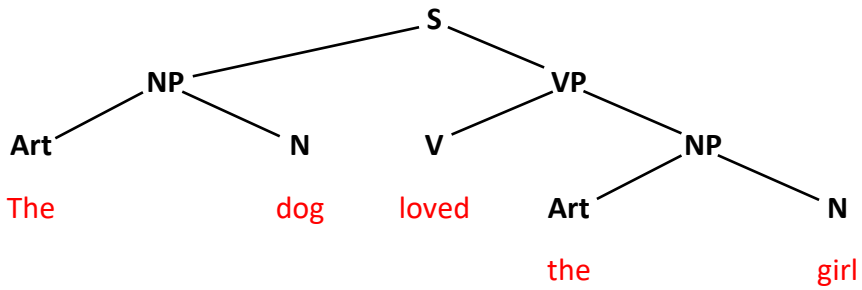
S NP Art N VP V NP Art N

[[[The] [dog]] [[loved] [[the] [girl]]]]

By performing this type of analysis, we reveal the hierarchical organization of those constituents. In this hierarchy, S is higher and contains NP, which is higher and contains N, same with the others.

Tree Diagram

They are one of the most common ways to create visual representation of syntactic structure. Here we try to capture the hierarchical organization of the constituents and explicitly show the different levels of the analysis:



Nominal and Verbal Grammatical Features

1. Nominal Features

a) Person: 1st, 2nd, 3rd ⇨ Pro can be 1st , 2nd, and 3rd person. N and PN can only be 3rd person.

b) Number: Singular/ Plural.

c) Case: Nominative (He), Accusative (Him), Genitive (His)

d) Masculine and Feminine: Grammatical gender that is based on the type of noun, not the sex.

2. Verbal Features "Apply to lexical and functional verbs"

a) Tense: Present/ Past (A point in time "when") *

* Will: Semantically = Future. Grammatically = Present

b) Aspect: Progressive/ Perfect (Length "how long") *

* I studied
  I have studied

Same form, but one is past (tense), and one is perfect (aspect). So, the features, morphemes, and meaning grammatically are different.

c) Subject-Verb Agreement: This is partially based on the category of number, person, tense, voice (active, passive), and gender. The subject forces the verb to have certain grammatical features.

Syntax

The analysis of the syntax of a language must account for all the grammatically correct phrases and sentences. So, the rules applied for the creation of well-formed structures have to be logical. An effective rule, for example: PP ⟶ P NP, can produce a large number of English phrases. This reflects another goal of syntactic analysis, which is to have a small and finite/ limited set of rules that will be capable of producing a large and infinite/ unlimited number of well-formed structures.

The small and finite set of rules is described as **generative grammar** because it is used to "generate" or produce structures, not just describe them.

Syntax: Putting words within sentences in an appropriate sequence.

Deep and Surface Structure

When creating sentences in the brain, we create declarative statements (sentences where we give information to new people), and other types of statements are originally declarative but have been modified:

1. Charlie broke the window.

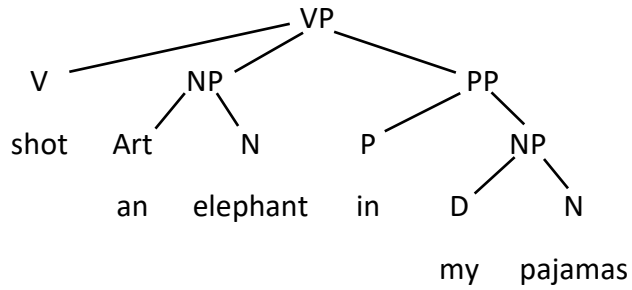
2. The window was broken by Charlie.

The 2 superficially different sentences (different syntactic forms) used to be one sentence in the brain. We refer to it as the **deep structure**, which is an abstract level of structural organization that is the source of the **surface structures**, the sentence we hear, which are the different syntactic forms/ production/ modification of sentences that are very related since they share the same information. So, the previous example, we have **1 deep structure** and **2 surface structures**, and all the surface structures are derived from a declarative statement that has a subject and predicate.

Structural ambiguity

Unlike what was explained before, sometimes we can have 1 surface structure and multiple deep structures that give different meanings without it being clear. This could cause a **structural ambiguity**. This can be observed when we have more than one possible tree diagram in one surface structure:

I once shot an elephant in my pajamas.



This could mean either that the elephant was wearing my pajamas, or that I shot the elephant while I was wearing my pajamas.

Movement rules

The phrase structure rules can be treated as representation of the underlying or deep structures of sentences in English. A feature of them is that they'll generate sentences with a fixed order which works fine for declarative forms. **(What about other forms like interrogative?)**

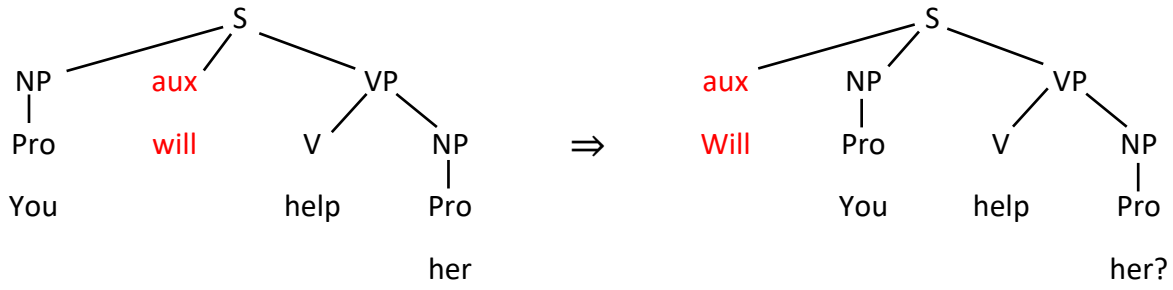
In declarative form, sometimes we can find a rule that includes auxiliaries, such as:

S ⟶ NP aux VP. When changing from it to a yes-no interrogative, we move one part of the structure (in this case the auxiliary) to another position.

This process is based on a **movement structure** (aux inversion).

NP aux VP ⇒ aux NP VP

You will help her ⇒ Will you help her?



These are surface structure variations of a single underlying deep structure.

Recursion

Rules of the grammar will need the crucial property of recursion, and recursive rules have the capacity to **be applied more than once in generating a structure (adding more than one phrase of the same type in a sentence):**

E.g. The gun was on the table.

The gun was on the table near the window.

The gun was on the table near the window in the bedroom.

As you can see, the prepositional phrase was repeated.

We must also be able to put sentences inside other sentences. In traditional grammar, they were described as **clauses**, containing a topic (subject), and a new information (predicate). This is not just a feature of grammar. It can also be an essential part of a theory of cosmic structure.

E.g. [Mary helped George].

[Cathy knew that [Mary helped George]].

[John believed that [Cathy knew that [Mary helped George]]].

3 clauses (2 embedded clauses/ 1 main clause).

You may notice that each time we add a clause, the word "that" is included, this word introduces the **complement phrase**. The word that is called a **complementizer**.

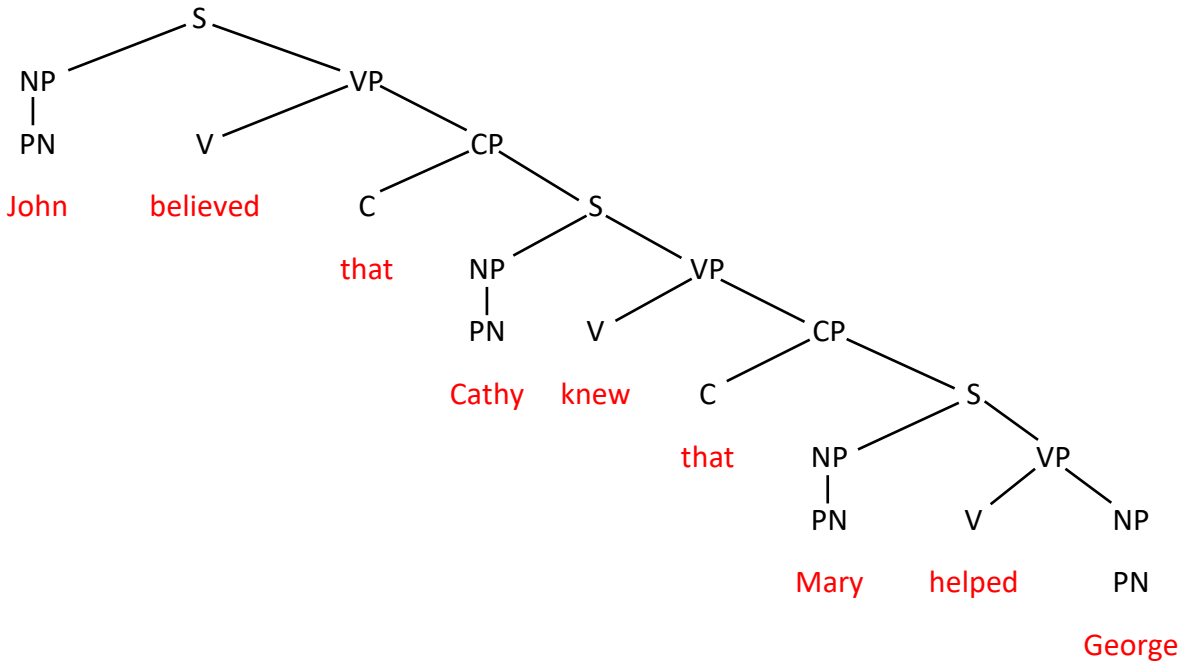
"A complement phrase rewrites as a complementizer and a sentence" CP ⟶ C S

How recursion is built into grammar: S ⟶ NP VP

VP ⟶ V CP

CP ⟶ C S…

John believed that Cathy knew that Mary helped George.



Types of auxiliaries

1. Progressive be ⇨ +ing: I am playing.

2. Perfect have ⇨ +V_3: I have been playing.

3. Model ⇨ +Infinitive/ Bare form: I will have been playing.

Chapter 9. Semantics

Semantics: a field of linguistics/ the study of the meaning of words, phrases, and sentences.

"Semantic analysis focuses on what the words conventionally mean (conceptual meaning)".

There are 2 ways of looking at meaning:

1. Conceptual meaning: covers the basic essential components of meaning that are conveyed by the literal use of a word.

E.g. needle means ⇨ thin, sharp, steel instrument.

2. Associative meaning: includes connotations attached to a word, and can differ from one person to another. Most of the time they are used in literature and advertisements.

E.g. needle means ⇨ pain, illness, blood, drugs, threads, etc.

Semantic features

Some sentences may be grammatically appropriate, but semantically odd: The hamburger ate the boy.

That's because **every noun must have specific properties/features**, so they can be used with certain verbs.

The subject used for the verb "ate" must denote an entity that is capable of performing the verb. The word "hamburger" doesn't have that.

The crucial element/feature used to determine the noun that must be used as the subject of "ate" is **animate being [+animate]**.

Other semantic features:

[+human]: The boy is reading.

The horse is reading. ⇨ [-human] ⇨ semantically odd.

[+female]: The woman is pregnant.

The man is pregnant ⇨ [-female] ⇨ semantically odd.

[+adult]: The woman is pregnant.

The 5y/o girl is pregnant ⇨ [-adult] ⇨ semantically odd.

A noun can have more than one feature:

- Woman ⇨ [+animate, +human, +female, +adult]

- Man ⇨ [+animate, +human, -female, +adult]

- Table ⇨ [-animate, -human, -female, -adult]

By that, we can predict which nouns make a sentence semantically odd or not.

Nouns that carry meaning components/features are described as containers. And a word being a container is not enough to differentiate the features used with some verb. That's why there is more to the meaning of words than these features.

Semantic roles/Thematic roles

Instead of looking at words as just containers of meaning, we look at the roles they fulfill within the situation described by a sentence.

1. Agent

An entity (person/thing) that performs or does the action.

2. Theme

An entity that is involved or affected/influenced by the action.

E.g. The boy kicked the ball. She ran.

Agent Theme Agent

"Some verbs do not require a theme since they are intransitive".

"A role is the kind of meaning that a NP contributes in relation to the verb".

3. Instrument

An entity used by agent in order to perform an action.

E.g. The boy cut the rope with an old razor.

Agent Theme Instrument

4. Experiencer

An entity designated as a person who has a feeling, perception, or state and doesn't involve actual performance to an action.

E.g. She feels sad. Did you hear that noise?

Experiencer Theme Experiencer Theme.

* Note: See/Hear are not the same as Watch/Listen.

NP with them is experiencer NP with them is agent

5. Location

Where an entity is/The static position (no movement) of an entity.

E.g. Mary saw a fly on the wall.

Experiencer Theme Location

6. Source

Where an entity moves from (the position the entity used to be in and is not anymore).

E.g. She borrowed a magazine from George. Linda left the room

Agent Theme Source Agent Source

7. Goal

Where an entity moves to/The destination.

E.g. The magazine was handed back to George by her.

Theme Goal Agent.

* A theme can come first in passive form and the agent experiences it at the end or never exists at all.

* Source and goal can appear in the same sentence.

E.g. Linda went from Ramallah to Birzeit.

Agent Source Goal.

Lexical relations

Words have relations that are used to characterize the meaning of them with other words. This is the analysis of lexical relations.

1. Synonymy

A relation that describes two or more words with very close meanings (not total sameness in the meaning), which are called synonyms.

One should pay attention to the kind of word used even if it has the same meaning as another, to avoid oddness or informality.

E.g. Sandy had only one answer correct in the test.

Sandy had only one reply correct in the test. ⇨ Sounds odd.

My dad purchased a large automobile. ⇨ Sounds formal.

My dad bought a big car. ⇨ Sounds casual or informal.

2. Antonymy

Two forms with opposite meanings are called antonyms.

a) adjective antonyms: They can be divided into two main types:

⇨ **Gradable antonyms:** Opposites along a scale (degrees) and can be used in comparative constructions.

E.g. I am very happy / She is slightly tired / A pony is smaller than a horse.

"The negative of one member of a gradable pair doesn't necessarily imply the other".

E.g. My car isn't old. "doesn't necessarily mean that it's new".

⇨ **Non-gradable antonyms:** Direct opposites (also called complementary pairs), and comparative constructions are not normally used.

E.g. I passed the exam / My grandparent is dead / I got married last week.

"The negative of one member of non-gradable pair does imply the other, but we normally avoid it".

E.g. My grandparent isn't alive. "It surely means that he's dead".

b) Verbal antonyms: Opposites in the form of verbs.

The negative test can be used to identify non-gradable antonyms, but we usually avoid that with verbs.

E.g. Undress ⇨ opposite of dress, but it doesn't mean (not dress), but (do the reverse of dress).

"Antonyms of this type are called **reverses**".

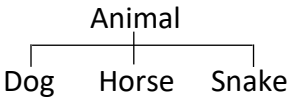
3. Hyponymy

a relationship of having the meaning of one form is included in the meaning of another.

E.g. Living thing / creature / animal / dog.

The concept of "inclusion" involved in this relationship is that if an object is a (dog), then it is necessarily an (animal). So, the dog is a hyponym of animal.

"Hyponymous connection comes in a type of hierarchical relationship". A smaller meaning implies a bigger meaning (not synonyms tho).



Take a look at this diagram. As we said, a dog is a hyponym of animal. A horse is also a hyponym to animal. The same goes to snake.

Since these are small meanings that imply a bigger meaning, we call them **subordinate hyponyms**. The bigger meaning (higher-level), is called **superordinate hyponym**. And since dog, horse, snake share the same superordinate term, they are **co-hyponyms**.

The relation of hyponymy captures the concept of "is a kind of". A dog is a kind of an animal. Sometimes the only thing we know about a word is that it is a hyponym of another term and that's it: Banyan is a kind of a tree.

"Things" are not the only words that are hyponyms. Verbs like "punch, stab…" can be hyponyms for "injury".

4. Prototypes

While some words can be hyponyms to the same meaning, not all of them are considered to be equally good examples of the bigger meaning. This is due to the terms of resemblance to the clearest example that one is normally exposed to. Thus, the first thing that one imagines or thinks of.

When saying the word "furniture", some people think of "chair" or "table" rather than "bench" or "stool". This is **prototype**, and it's clear that there is some general pattern to the categorization process involved in prototypes and that it determines one interpretation of word meaning. However, this is an individual experience, so there are variations in interpretation, and people may disagree over the words used.

There are relationships that may include both meaning and form.

Form: Pronunciation and/or spelling.

5. Homophones

They are words that have the same pronunciation but different spelling and meaning.

E.g. Right/Write, Bear/Bare, Flower/Flour, Sew/So, To/Two/Too.

6. Homonymy

They are words that have the same pronunciation and spelling but carry different meaning.

E.g. Bank (of a river)/ Bank (institution), Mole (on skin)/ Mole (animal).

7. Polysemy

The relatedness of meaning found in it is essentially based on similarity. It is having words that have the same pronunciation and spelling and a related meaning by extension.

E.g. Head (object on top of the body/person on top of the company).

Foot (of a person, of bed, of mountain).

Run (person does, water does, colors do).

Sometimes it is possible to have homonymy and polysemy at the same time.

E.g. Date (something we can eat), Date (a point in time) ⇨ Homonyms.

Date (a point in time "day / month", Date (arranged meeting "appointment") ⇨ polysemes.

8. Wordplay

Homophones, homonymy and polysemy are the basis of a lot of wordplay, usually for humorous effect.

E.g. Why are trees mistaken for dogs? Because of their bark (لحاء).

Why is six afraid of seven? Because 7 8 (ate) 9.

9. Metonymy

The relatedness of meaning found in it, is based on a close connection in everyday experience. So, we use some words to refer to another.

E.g. He drank the whole bottle ⇨ (not the actual bottle, but the water).

The White House has announced ⇨ (the President).

Answer the door/Give someone a hand…etc.

Many examples of metonymy are highly conventionalized and easy to interpret, but there might be some of them that depend on an ability to infer what the speaker has in mind.

E.g. The strings are too quiet ⇨ You would understand it if you're familiar with orchestral music.

Collocation

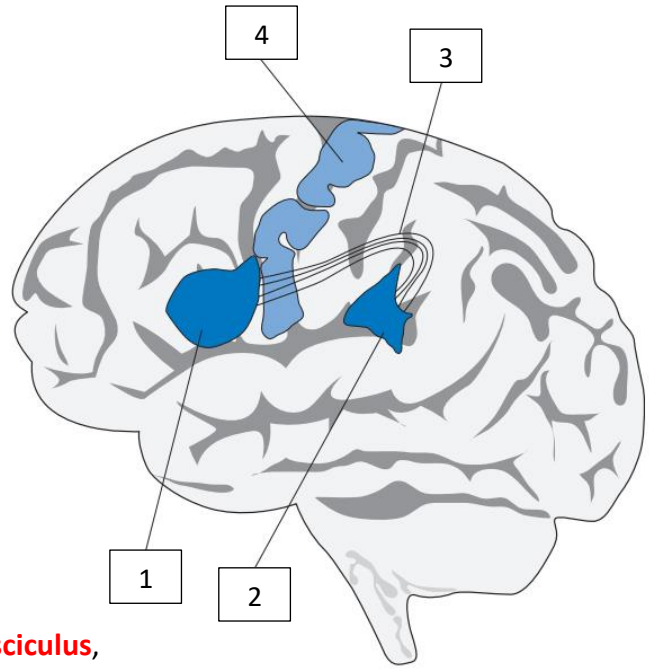
There are some words that normally occur with other words. So, if you ask people what they think when they hear "table", a lot will say it comes with "chair". Same goes with cap ⇨ bottle, true ⇨ feelings, hammer ⇨ nail, salt ⇨ pepper, butter ⇨ bread, needle ⇨ thread.

This kind of study has received a lot of attention in corpus linguistics, which is a large collection of text stored as database in a computer. شدخل هاظ بكلشي ما ادري

Chapter 12. Language and the Brain - Neurolinguistics

Neurolinguistics: The study of the relationship between language and the brain.

If we take a look at the brain, particularly at the left hemisphere, we'll see that there are areas that indicate the general locations of those language functions involved in speaking and listening, meaning that the language ability is located in them.



1. Broca's Area

Number "1" in the drawing is described as **Broca's area (anterior speech cortex)**. Damage to it causes a difficulty in speech production.

2. Wernicke's Area

Number "2" is described as **Wernicke's area (posterior speech cortex)**. Damage to it causes difficulty in speech comprehension, reception, and processing.

3. Arcuate Fasciculus

Number "3" is described as the **arcuate fasciculus**, a bundle of nerve fibers. It connects "1" and "2", and is responsible of transmitting signals between them.

4. Motor Cortex

Number "4" is described as the **motor cortex**, and it controls the movement of the muscles, including the articulatory muscles of the face, jaw, tongue, larynx… etc.

The Localizing View

The specific aspects of language ability can be accorded in specific locations in the brain. The brain activity in hearing, understanding, and seeing follows a definite pattern.

1. Word is heard and comprehended in Wernicke's area.

2. Signals are transferred via the arcuate fasciculus.

3. Broca's area receives signals and is ready to produce.

4. Signals are sent to the motor cortex to articulate the words.

Tongue Tips and Slips

1. Tip of the tongue phenomenon

It's when we feel that a word is eluding us, we know it, but it just won't come to the surface. This occurs when uncommon words and names, but we still know what they are and their phonological outline.

There are some mistakes that are referred to as malapropisms, which are mistakes due to the mispronunciation of certain words that have strong phonological similarities in the target word and mistake occurred. Like saying “medication” instead of “meditation”.

2. Slips of the tongue

There's a type of speech error called spoonerism, which results of switching onsets of words or interchanging of word initial/final sounds. It's a phenomenon that happens with everyone.

E.g. Make a long shory stort (instead of “story short”).

Use the door to open the key.

Black bloxes (black boxes) ⇨ resulted of a sound being carried over from one word to another.

Some argue that these slips are not random and do not produce a phonologically unacceptable sequence. Instead, they indicate the existence of different stages in the articulation of linguistic expressions. “They result from (slips of the brain)”.

3. Slips of the ear

It may provide some clues to how the brain tries to make sense of the auditory signal it receives.

E.g. great ape ⇨ The speaker actually meant “grey tape”, but it was misheard.

Aphasia

It is an impairment of language function due to the localized brain damage that leads to difficulty in understanding and/or producing linguistic forms.

The most common cause of aphasia is a stroke (blood vessel in the brain is blocked or it bursts).

1. Broca's aphasia (also called motor aphasia)

It's characterized by:

a) Substantially reduced amount of speech.

b) Distorted articulation.

c) Slow, effortful speech.

d) "agrammatic" speech ⇨ Almost everything said is of lexical morphemes, and the grammatical markers (functional morphemes, inflections..) are missing.

e) Lots of hesitation and long pauses.

f) Difficulties in articulating single words.

In Broca's aphasia, reception is better than producing.

E.g. I eggs and eat and drink coffee breakfast.

2. Wernicke's aphasia (also called sensory aphasia)

It's characterized by:

a) Difficulties in auditory comprehension.

b) Produce very fluent speech, which is, however, often difficult to make sense of.

c) Very general terms are used.

d) Difficulties in finding the correct word, which is referred to as anomia. To avoid it, speakers try to describe the word.

e) Hesitation.

3. Conduction aphasia

Less common than the others, and is associated with damage to the arcuate fasciculus.

It's characterized by:

a) Sometimes mispronunciation of words with no articulation problems.

b) Pauses in hesitation (disrupted rhythm). They're still fluent either way.

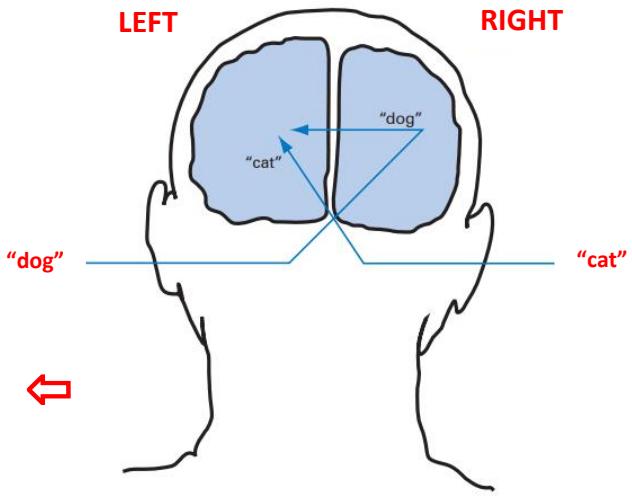
c) Difficulties in repeating a word or phrase said by others.

d) What's heard and understood cannot be transferred very successfully to the speech production area.

"Difficulties in speaking/auditory comprehension can be accompanied by difficulties in writing/reading".

Dichotic listening

Dichotic listening test is a technique that explains that everything experienced on the right-hand side of the body is processed in the left hemisphere, and everything on the left-hand side is processed in the right hemisphere.



When hearing both sounds at the same time, one normally recognizes the word that got through the right ear first.

That's because the language signal received through the right ear is directly sent to the left hemisphere (Right Ear Advantage), while the one received through the left ear is first sent to the right hemisphere, then sent to the left for processing, which takes longer time.

The right hemisphere mainly processes non-linguistic signals like music, birds singing, traffic noise… etc. In this case, they are processed faster via the left ear (right hemisphere).

According to all of that, we have two types of processing:

1. Analytic processing: Recognizing the smaller details and sounds in rapid sequence (done with the “left brain”).

2. Holistic processing: Identifying more general structures in language and experience (done with the “right brain”).

The critical period

Lateralization: The apparent specialization of the left hemisphere for language.

It is thought that the lateralization process begins in early childhood. It coincides with the critical period during which language acquisition takes place. It lasts from birth until puberty, according to the general view (if more specific, it could be from 0 to 5 years old).

If a child doesn't acquire language during this period, it will be almost impossible to learn a language later on. That's what happened with a girl called **Genie**. She couldn't produce any speech since she never received any in that period.

“Read page 166 for the whole story of what happened to her and what specialists found regarding her case”.