Language

What is it good for?
Where did it come from?

Why Have Language?

communication?

thought?

Thought and Language

Complex thoughts are built of simpler parts in structured compositions

Could you have a thought like this without language?

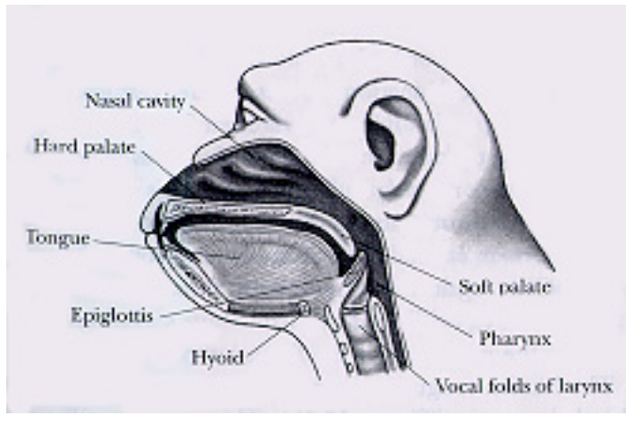
Mentalese

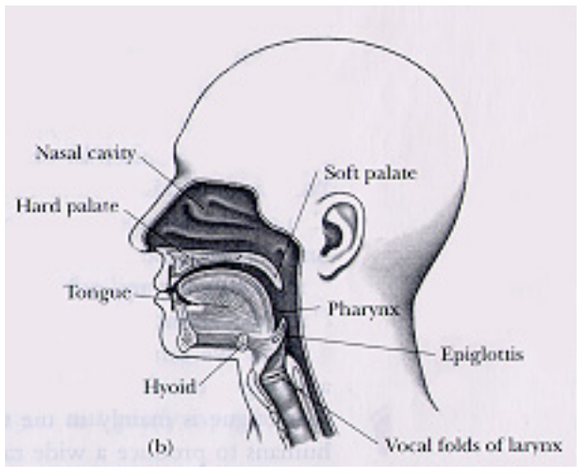
If three of us sneak in the back, we can steal at least a bag of apples without getting caught

Language is a tool for solving problems

Even the simple use of labels can radically change a problem

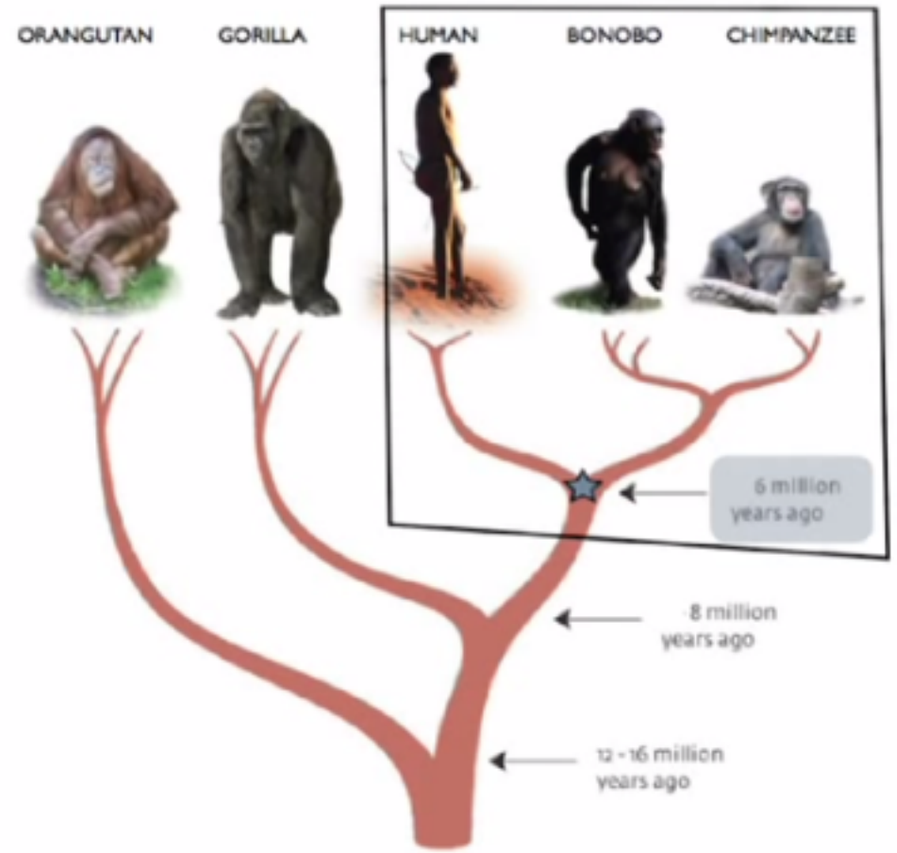
Evolution of Language: Why? When? How?





What data? How might we study this?

Tomasello et al: The Cooperative Eye Hypothesis (2007)



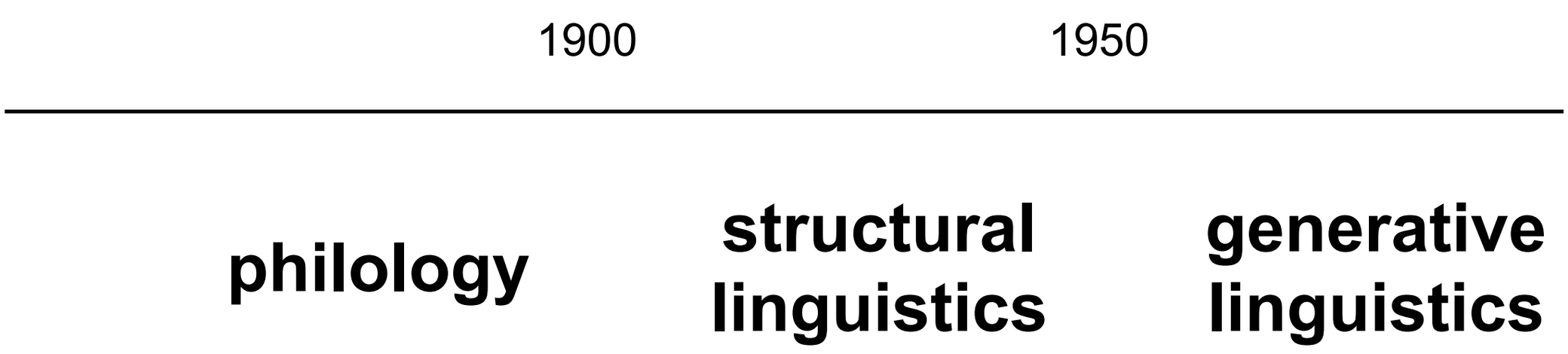
One small biological change facilitating **joint attention** leads to massively increased dynamic entanglement

Language and Linguistics

1. Pragmatics
2. Semantics
3. Syntax
4. Morphology
5. Phonology
6. Phonetics

Speech and Language encompass a vast array of phenomena without which the human world would not exist.

Any “science of language” can only address some aspects, and the boundaries of “language” are always under revision



Philology

Before ca. 1800, language was studied for a variety of reasons, including

* interpretation of religious texts
* teaching of “grammar” to learners
* teaching of foreign languages
* study of highly respected authors

None of these is strictly scientific

Philology is the scholarly study of languages & texts, including deciphering, interpretation and history.

Structural Linguistics

From about 1916, and with the work of Ferdinand De Saussure, (some aspects of) language became the object of scientific inquiry

Language was seen to be *systematic*, and a new scientific goal arose: characterising the abstract system which underlies the slightly messy business of everyday language use

Although overtaken by modern linguistics, many of the basic elements of structural linguistics are still taken for granted by linguists.

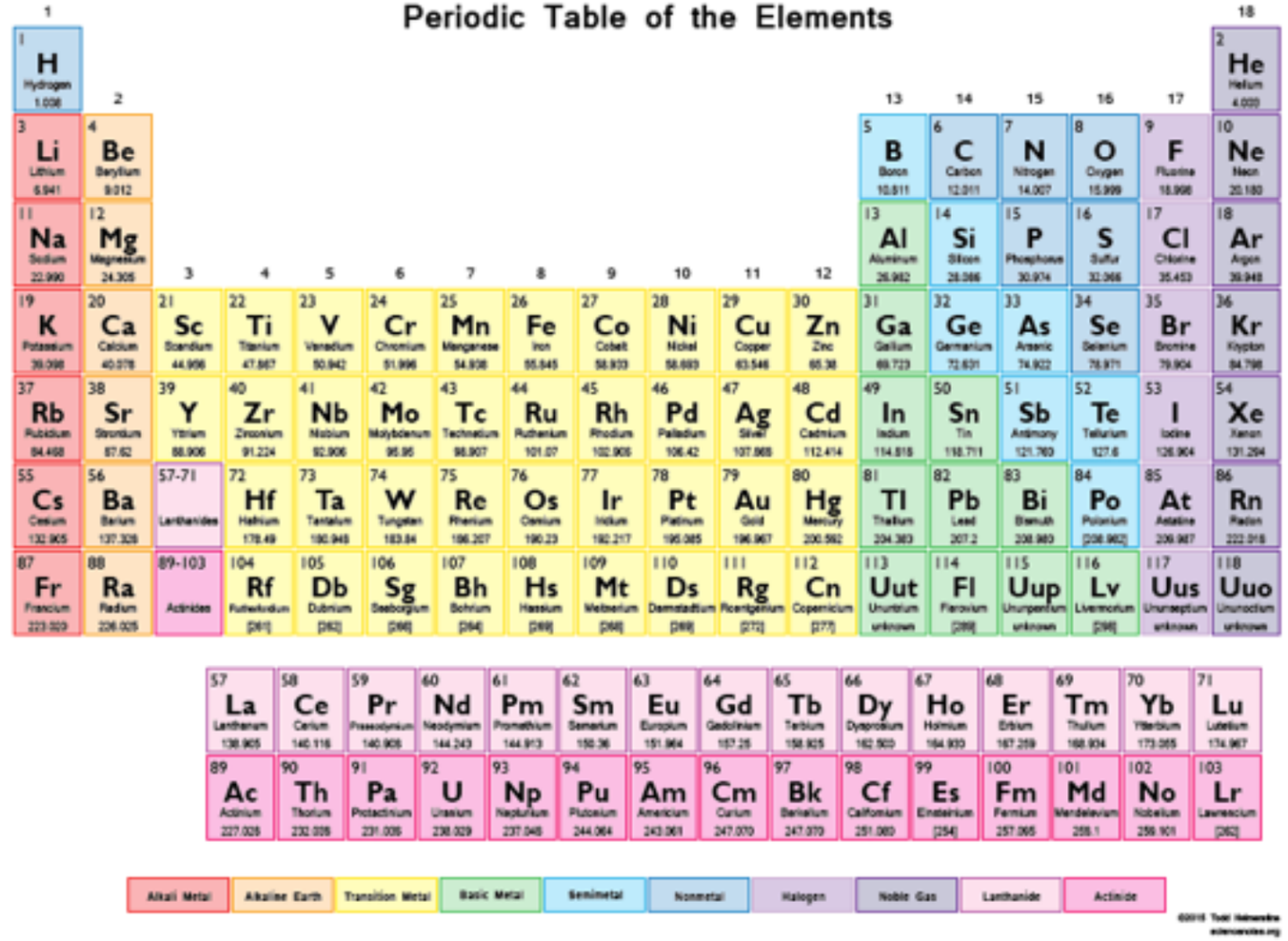
THE INTERNATIONAL PHONETIC ALPHABET (revised to 2005)

CONSONANTS (PULMONIC)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k g	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			r					ʀ		
Tap or Flap		ⱱ		ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

These two tables illustrate the spirit of science about 1890: systematising very many observations



Modern Linguistics

Since about 1957, Linguistics has been dominated by a formal approach known as Generative Linguistics.

At the heart of this is the formal (mathematical) treatment of Syntax (more on that in a moment)

The rise of Generative Linguistics is intimately tied to the origin of Cognitive Psychology and the development of the modern Computer

Although many people have contributed, Noam Chomsky is very central to this development

Modern Generative Linguistics has many sub-fields, each attending to one form of regularity in language

1. Pragmatics
2. Semantics
3. Syntax
4. Morphology
5. Phonology
6. Phonetics

“Language is Use” Ludwig Wittgenstein

1. Pragmatics:

How does the thing someone says relate to what they want?

Do your sentences mean what you want to convey?

“Can you pass the salt?”

Grice’s Conversational Maxims

In linguistic interaction, cooperation is the norm

Even conversational partners who are arguing typically exhibit cooperative behavior in selecting when to speak, how much information to provide, etc.

Grice's Conversational Maxims

***Truth**:* Do not say what you believe to be false
Do not say that for which you lack adequate evidence

***Quantity**:* Make your contribution as informative as is required
Don't make your contribution more informative than is required

***Relevance**:* Be relevant

***Clarity**:* Avoid obscurity of expression
Avoid ambiguity
Be brief
Be orderly

These are assumptions listeners make. They are not prescriptions. If you flout them, it probably means something

2. Semantics: The study of (some aspects of) meaning.

All Dubliners are not dumb vs
Not all Dubliners are dumb

Do *student* and *pupil* refer to the same thing?

Many approaches use *formal logic*

Examples of semantic relations

Synonymy (same meaning), (example: sofa/couch)

Antonymy (opposite meaning), (ex: up/down)

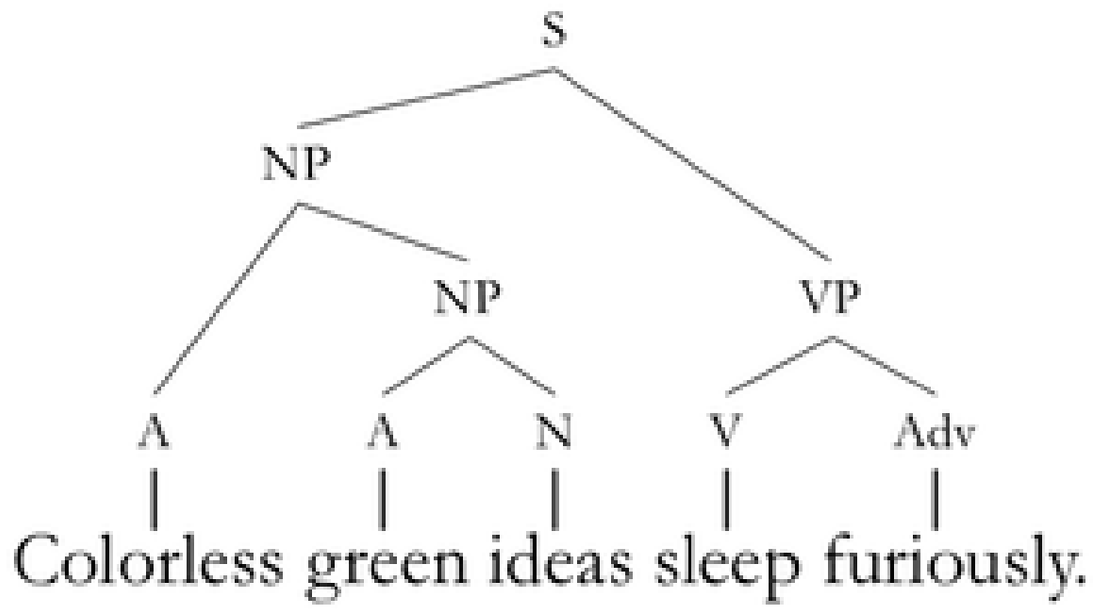
Polysemy (several related meanings), (ex: chip)

Homonymy (several unrelated meanings) (ex: bank)

Hyponymy (ex: triangle is a hyponym of polygon)

3. Syntax:

Sequences of words are highly structured, i.e. there are implicit rules about what can go with what.



Parts of speech
Phrase structure
Grammar

In linguistics, the word “Grammar” describes the regularities that determine what sequences of words can occur and what can not occur in a given language

When we say “rules” or “regularities” we are using the term as *scientists*, not as *teachers*.

The law of gravity is not the same kind of law as a law enacted by politicians.

Likewise a rule of syntax is not the same kind of rule as a rule made up by teachers.

Prescriptive vs Descriptive

Prescriptive: Lays down the law.
Appropriate for language learning texts

Descriptive: Attempts to describe actual use and structure
Scientific agenda
Data: actual sentences/speech
Goal: understand and describe what people do

Linguistics is a science. It is thus *descriptive*, and not *prescriptive*

Many Languages, Few Principles?

Principles: Languages do not vary arbitrarily. It is hard to make up an artificial language (Klingon?). A few *principles* of syntax determine the basic shape of all languages.

Parameters: Each language represents a specific choice among a small number of mutually exclusive options. E.g. most languages, English included, use the order

Subject Verb Object

for simple sentences.

Irish: Ith mé arán (eat - I - bread)

Verb subject object

English: I eat bread

Subject verb object

(Yoda is not entirely consistent)
Yoda: Lost a planet Master Obi-Wan has.

Verb object subject

4. Morphology: Morpheme: the smallest unit of language which has some independent meaning.

dog dogs doubtful cranberry Strassenbahnritzenreinemachefrau

Word formation

Lexicon: mental vocabulary. What is stored (morphemes? sounds? spellings? meanings?)

Expletive infixation

5. Phonology: Systematic organization of sounds within a language.

Which of the following are potentially legal words of English:

scraw stlomp pfiff poink

Phontactics: the rules which determine legal combinations of sounds in a language. (Are all ‘illegal’ combinations equally bad?)

Phonology Example 1

What is the shape(s) of the plural marker(s) in English?

lip, rock, tree, latch, gum, myth, laugh, two, cove, toe, bell, wretch, rib, load, breeze, fudge, hen, law, fez, bar, bat, tea, garage

How do you know which one to use?

Phonology Example 2

Some American dialects pronounce some of these words differently than Irish locals:

pure, cute, tune, abuse, dues,argue, muse, mew, new, lewd, few, view, enthuse, suit, hue, spurious, beauty, bugle, cue

Which ones are subject to variation? Can you predict this for other words? Is the process regular?