

## LECTURE 6: LANGUAGE CHANGE

- “Universal Grammar”: General aspects of design which are found in all human languages.

This has been the subject of the past three weeks’ lectures. A few examples ...

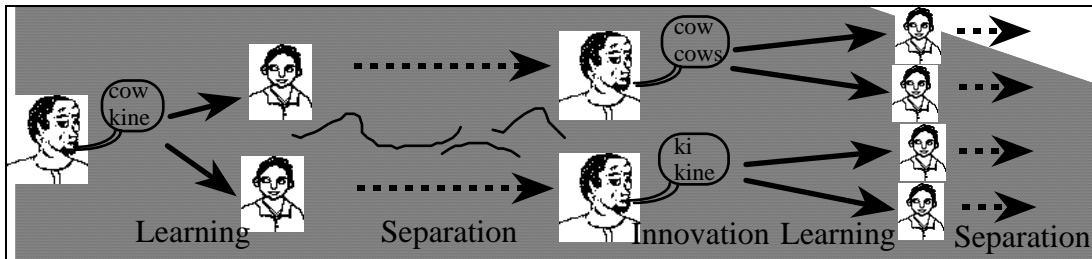
|                   |   |
|-------------------|---|
| <b>Syntax</b>     | <ul style="list-style-type: none"> <li>• Hierarchical structure to the elements of a sentence</li> <li>• Distinctions between grammatical categories</li> <li>• Recursiveness</li> </ul>  |
| <b>Morphology</b> | <ul style="list-style-type: none"> <li>• Ability of learn a huge number of arbitrary lexical symbols (words)</li> <li>• Unlimited capacity to create and assign meaning to new words</li> <li>• Innate notion of what words are most like to signify</li> </ul>       |
| <b>Phonology</b>  | <ul style="list-style-type: none"> <li>• Hearing a continuous speech sound stream as discrete sound units</li> <li>• Ability to produce such a stream at a high rate of speed</li> <li>• Hearing different sounds as “the same” by considering environment</li> </ul> |

But if there is such a thing as “Universal Grammar” then →

### WHY DO LANGUAGES APPEAR TO BE SO DIVERSE?!

- A natural and never ending process of ...

**Language:** Innovation → Learning → Separation → ...  
**Biological evolution:** Variation → Inheritance → Isolation → ...



We return to *Innovation* below. We consider first *learning*.

- What part of language is *learning* and what part is *innate*?

|                   | Examples of INNATE properties   | Examples of LEARNED properties   |
|-------------------|---|--|
| <b>Vocabulary</b> | <ul style="list-style-type: none"> <li>• Words break the world down into concepts such as things (<i>nouns</i>), actions (<i>verbs</i>), properties (<i>adjectives</i>), etc.</li> <li>• What words might mean follows patterns (the “Whole Object Principle”, etc.)</li> </ul> | <ul style="list-style-type: none"> <li>• The words for particular concepts—Spanish children have to learn that a domestic bovine is <i>vaca</i> whereas English children have to learn that it is <i>cow</i>.</li> </ul> |

|                  |   |   |
|------------------|---|---|
| <b>Grammar</b>   | <ul style="list-style-type: none"> <li>• Sentences are not just strings of words; they are composed of groups of phrases (they have <i>hierarchical structure</i>)</li> <li>• Words and phrases have particular functions in a sentence (they fall into <i>grammatical categories</i>)</li> </ul> | <ul style="list-style-type: none"> <li>• The ordering of words in phrases and phrases in sentences—Korean children must learn that the verb goes at the end of a sentence, English children that it is in the middle</li> <li>• Whether or not words require endings to show meaning—Latin speaking children had to learn to say <i>puer</i> ‘boy’ if the boy was doing the action but <i>puerum</i> if the action was being done to him</li> </ul> |
| <b>Phonetics</b> | <ul style="list-style-type: none"> <li>• A stream of speech is perceived as a sequence of discrete sounds</li> <li>• All languages use a specific small set of organs to produce speech</li> </ul>  | <ul style="list-style-type: none"> <li>• The particular sounds that a language uses—English children have to learn to distinguish [a] from [æ], Spanish children do not</li> <li>• Variants of sounds taken to be “the same”—English children must learn different pronunciations for “l” in words like <i>lip</i> vs. <i>pill</i>, Spanish children do not</li> </ul>  |

It is in the *learned* parts of language that languages can change—variation can be introduced into a community as some speakers “imperfectly” learn parts of the language or learn (or fail to learn) different things from other speakers.

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### • Innovation as a source of language diversity

One generation, or even one speaker may innovate by changing some aspect of language. If that innovation catches on and is *learned* by the next generation, it becomes part of the language and the language has thus changed from that of previous generations. (Skim examples in Pinker, pp. 245-248—we will focus on the examples below.)

#### Syntactic innovation

Latin

- |     |         |         |         |
|-----|---------|---------|---------|
| (1) | puer    | amat    | puellam |
|     | S       | V       | O       |
| (2) | puellam | amat    | puer    |
|     | O       | V       | S       |
| (3) | puer    | puellam | amat    |
|     | S       | O       | V       |

'The boy loves the girl'



• *The Great English Vowel Shift* (Pinker 252-253)

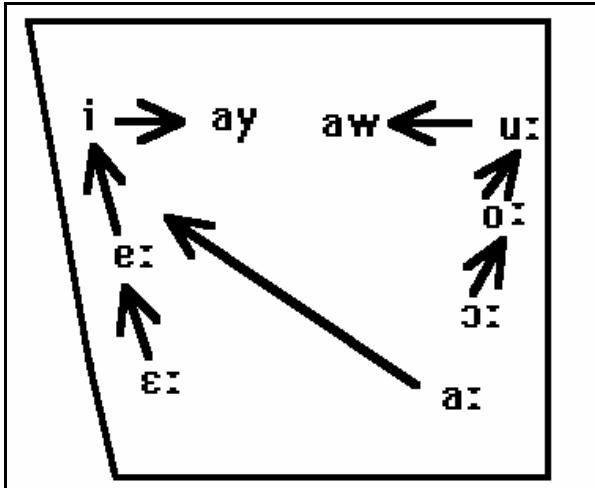
In the 15th Century began a set of innovations called *The Great English Vowel Shift*. This set of innovations affected ONLY LONG VOWELS. It is the Great English Vowel Shift which accounts for at least (1) the fact that the written vowels of English signal different pronunciations from what those letters signal in other European languages, e.g. English “long *i*” is pronounced [ay] whereas the symbol *i* is pronounced [i] in all other European languages and (2) the fact that the so-called “long” and “short” vowels of English are not phonetically long and short variants of the *same* vowel sound.

**The Great English Vowel Shift** (words with “shifted” vowels are paired with words containing the same roots but with the vowel shortened by *Early Middle English Vowel Shortening*, hence not affected by the Vowel Shift)

| Old English vowels    |        | Modern shifted vowel | Modern short (=unshifted) vowel | word with shifted vowel in Modern English | same root with vowel shortened by Early Middle English Vowel Shortening (and hence unshifted by the Great Vowel Shift) |
|-----------------------|--------|----------------------|---------------------------------|---|--|
| $\bar{i}$<br>i        | →<br>— | ay                   | ɪ                               | wise<br>hide<br>divine                    | wisdom<br>hidden<br>divinity   |
| $\bar{u}$<br>u        | →<br>— | aw                   | ʊ or ʌ <sup>1</sup>             | house<br>out<br>profound                  | husband (“band” meant “dweller”)<br>utter (“utter” meant “outer”)<br>profundity  |
| $\bar{e}$<br>e        | →<br>— | i                    | ɛ                               | weave<br>keep<br>serene                   | Webster (“weave-ster” = “weaver”)<br>kept<br>serenity  |
| $\bar{o}$<br>o        | →<br>— | u                    | a <sup>2</sup>                  | fool<br>goose<br>poor                     | folly<br>gosling<br>poverty  |
| $\bar{a}$<br>a        | →<br>— | e                    | æ                               | bake<br>crane<br>sane                     | Baxter (“bake-ster” = “baker”)<br>cranberry<br>sanity  |
| $\bar{\epsilon}$<br>ε | →<br>— | e or i               |                                 | break, beak                               |  |
| $\bar{o}$<br>o        | →<br>— | o                    | æ                               | stone<br>toad                             | Stanford<br>tadpole (“pole” meant “head”)  |

<sup>1</sup>In normal American English pronunciation, the “short *u*” is usually pronounced [ʌ], as in *but* [bʌt]. There are British dialects that have [ʊ] in such words, and some words have [u] even in American English, such as *put* [pʊt], *bush* [bʊʃ].

<sup>2</sup>In American English, the “short *o*” from Old English has become [a] in all words, as in *not* [nat]. There are British dialects which pronounce the more expected [o], i.e. they would pronounce *not* as [not]. Compare this to the pronunciations of “short *u*” mentioned in the preceding footnote.



| Middle English |   | Modern English |         |
|----------------|---|----------------|---------|
| [mi:s]         | ⇒ | [mays]         | 'mice'  |
| [mu:s]         | ⇒ | [maws]         | 'mouse' |
| [ge:s]         | ⇒ | [gi:s]         | 'geese' |
| [go:s]         | ⇒ | [gu:s]         | 'goose' |
| [brɔ:kən]      | ⇒ | [brɔ:k]        | 'broke' |
| [na:mə]        | ⇒ | [ne:m]         | 'name'  |

• Separation as a cause of linguistic diversity

When people speaking the same language become separated, they continue to undergo innovations from generation to generation, but because of the separation, those innovations will probably not be the same. *Separation* may be ...

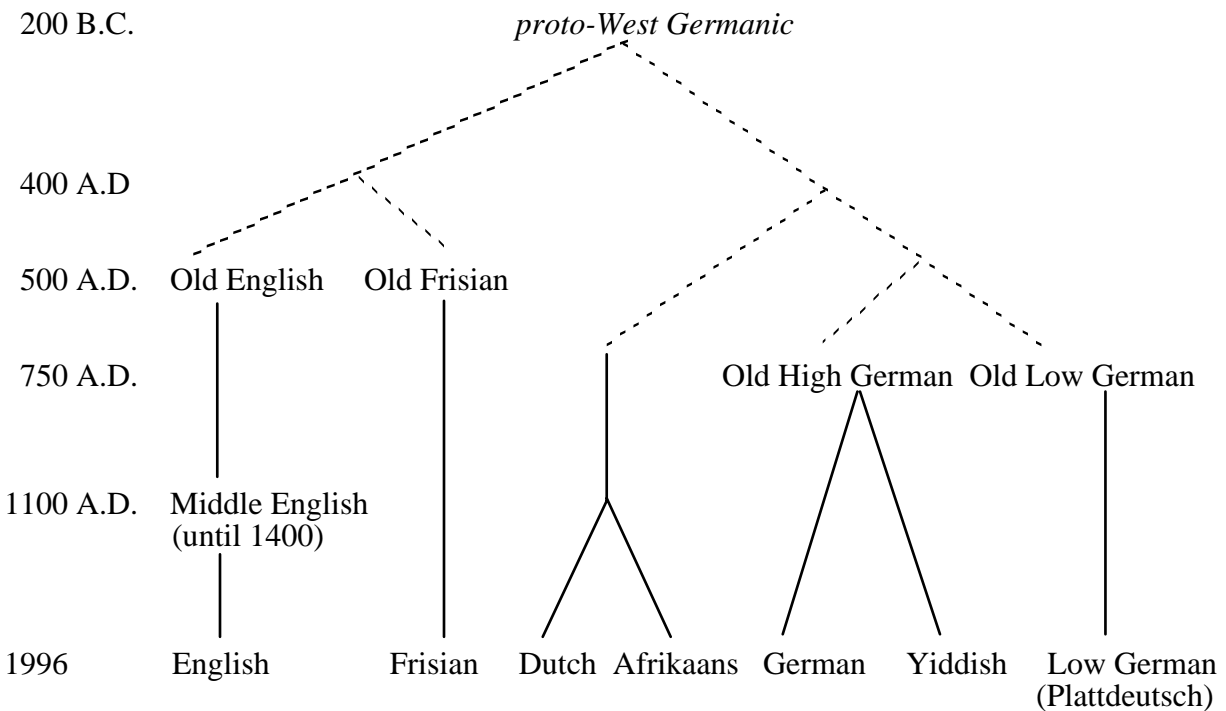
- *Geographical*, e.g. movement of English speakers to North America, Australia, etc. separating them from their homeland
- *Social*, e.g. communities which are isolated by their own choice or by imposed social reasons into ethnic, racial, socio-economic, etc. groups

| English | Frisian | Dutch  | German      |
|---------|---------|--------|-------------|
| pepper  | Peeper  | peper  | Pfeffer     |
| ten     | tiin    | tien   | zehn [tsēn] |
| king    | König   | koning | König       |
| blood   | Blör    | bloed  | Blut        |
| day     | Dai     | dag    | Tag         |
| good    | gur     | goed   | gut         |

- Genetically related languages: what does it mean to say that languages are “related”?

LANGUAGES ARE SAID TO BE (GENETICALLY) “RELATED” IF THEIR HISTORY COULD BE TRACED BACK TO A SINGLE ANCESTRAL LANGUAGE.

Thus ... the *West Germanic languages* English, Frisian, Dutch, German (and a few others) are “genetically related” in that they all have their origin in a single language community which must have existed around 2000 years ago, though we have no historical records from that community. We could go back yet further to the larger family of all *Germanic languages*, which would also include the *North Germanic* languages such as Swedish, Danish, Norwegian, and Icelandic and *East Germanic*, represented only by Gothic, which died out over 1000 years ago.



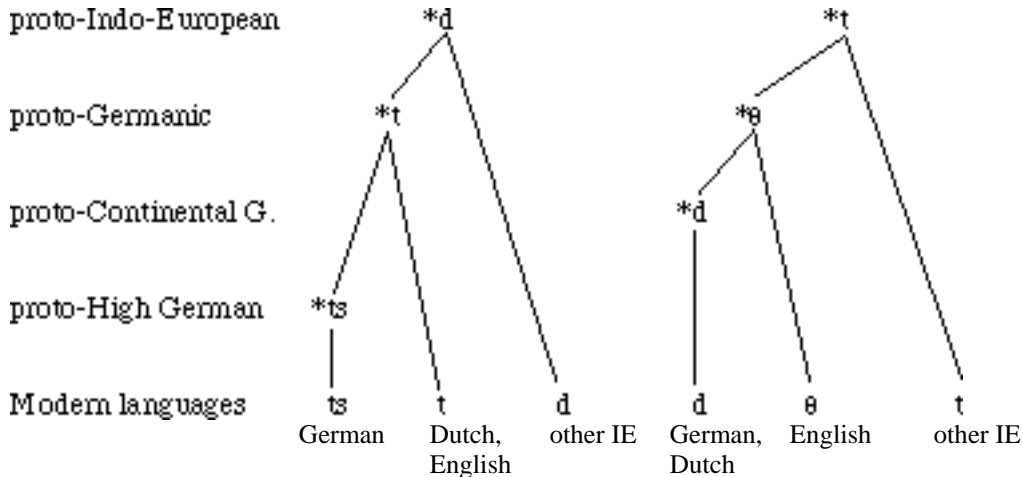
- Dates are approximate; italicized names and dashed lines represent periods for which there are no historical records.
- All the languages are today differentiated into regional and social dialects, of course.

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- The Comparative Method: proving language relationships through systematic correspondences

In the film “In Search of the First Language”, James Matisoff of UC Berkeley demonstrated the Comparative Method in establishing relationships among the Sino-Tibetan languages, which include Chinese and some of the languages of south Asia. Below is an example from Germanic languages.

- (1) Compare the first sounds in each of the Germanic languages with each other in the table below (z in German is pronounced [ts]).
- (2) Compare the first sound of the Germanic languages as a group with the first sounds of the other Indo-European languages.

| Germanic |        |         | Other Indo-European |            |         |          | Recon-<br>struction |
|----------|--------|---------|---------------------|------------|---------|----------|---------------------|
| English  | Dutch  | German  | French              | Spanish    | Russian | Greek    |                     |
| two      | twee   | zwei    | deux                | dos        | dva     | duo      | *d                  |
| ten      | tien   | zehn    | dix                 | diez       | des'at' | deka     |                     |
| tooth    | tand   | Zahn    | dent                | diente     | (zub)   | donti    |                     |
| three    | drie   | drei    | trois               | tres       | tri     | treis    | *t                  |
| thin     | dun    | dünn    | ténu                | tenue      | tonkiy  | (leptos) |                     |
| thaw     | dooien | (tauen) | (dégeler)           | (deshelar) | tayat'  | tiksi    |                     |



Regular sound correspondences: Data like that above allows us to set up regular **correspondence sets** between languages that reflect their level of historical connections.

- Correspondence set 1:** German **ts**                      Dutch/English **t**                      other Indo-European **d**
- Correspondence set 2:** German/Dutch **d**                      English **θ**                      other Indo-European **t**

- **Mass Comparison:** using *resemblances in vocabulary items* to establish genetic relationships between remotely related languages and languages for which large quantities of accurate data are unavailable
  - **Basis of Mass Comparison:** The relationship between sound and meaning is *arbitrary*. Repeated resemblances between vocabulary items across languages must therefore result from common inheritance.

- Principles of Mass Comparison:

(1) *Compare many items in many languages*: Minimizes chance as a source of resemblance.

(2) *Compare items of “basic vocabulary” (body parts, small numbers)*: Minimizes borrowing of words between languages as a source of resemblance.

| Indo-European |             |               |                | Finno-Ugric |           | Semitic |         |
|---------------|-------------|---------------|----------------|-------------|-----------|---------|---------|
| English       | Dutch       | Spanish       | Russian        | Finnish     | Hungarian | Arabic  | Hebrew  |
| <u>two</u>    | <u>twee</u> | <u>dos</u>    | <u>dva</u>     | kaksi       | két       | iTna@n  | s'nayim |
| <u>three</u>  | <u>drie</u> | <u>tres</u>   | <u>tri</u>     | kolme       | három     | Tala@T  | s'alos' |
| <u>eye</u>    | <u>oog</u>  | <u>ojo</u>    | glaz           | silmä       | szem      | ?ayn    | ayin    |
| die           | sterven     | <u>morir</u>  | <u>mueret'</u> | kuolla      | meghalni  | ma\t    | met     |
| <u>full</u>   | <u>vol</u>  | lleno         | <u>polnyj</u>  | täysi       | tele      | mali/   | male    |
| <u>name</u>   | <u>naam</u> | <u>nombre</u> | im'a           | nime        | név       | ism     | s'em    |
| sugar         | suiker      | azúcar        | saxar          | sokeri      | cukor     | sukkar  | sukar   |

- Joseph Greenberg has used Mass Comparison to classify the languages of ...

**Africa** with 4 families: *Afroasiatic, Nilo-Saharan, Niger-Kordofanian, Khoisan*

**The Americas** with 3 families: *Eskimo-Aleut, Na-Dene, Amerind*

- Greenberg has been harshly criticized in his application of Mass Comparison

- Pinker (258-259): reliance on “gut feelings” and absence of statistics
- Matisoff and others in film “In Search of ...”: unscientific, no constraints; given the time depths, “resemblances” could be chance, non-resemblances could be related words

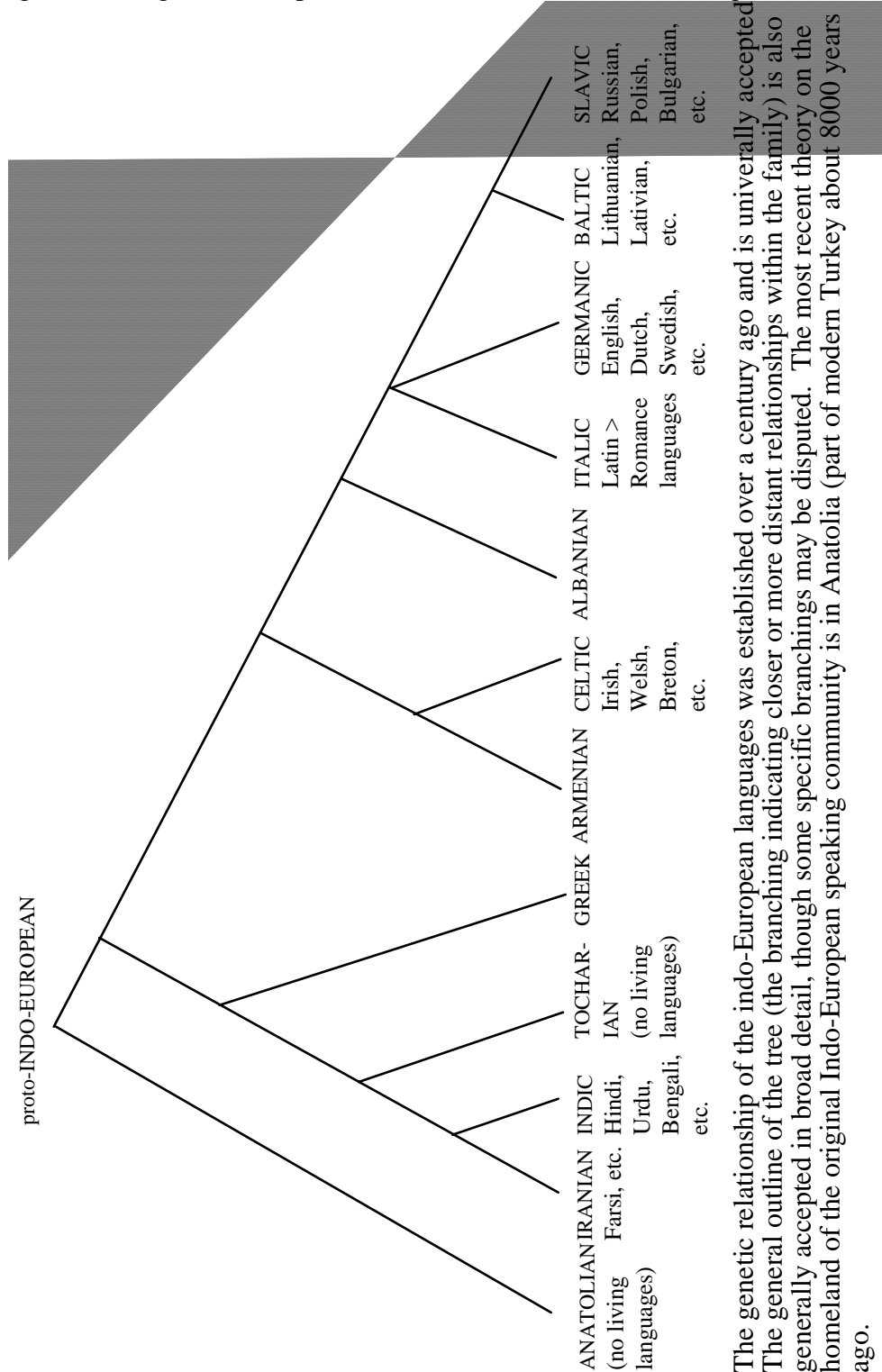
- How far back can we group languages?

- Nostratic** (see film notes, page 66): Essentially puts all the major linguistic groups of the Eurasian land mass into one “Super Family” (see attached chart); most linguists are skeptical about Nostratic being a unified family, at least in the detail claimed by Nostraticists
- proto-Human** (see film notes, page 66): A few individuals claim to have identified a few word roots that descend from the original human language, which was probably spoken in Africa as long as 200,000 years ago. While most linguists accept the hypothesis that human language had a single origin in Africa, few linguists believe that we can identify any *specific* aspects of that language, such as the form and meaning of any particular word. What we *can* identify as being part



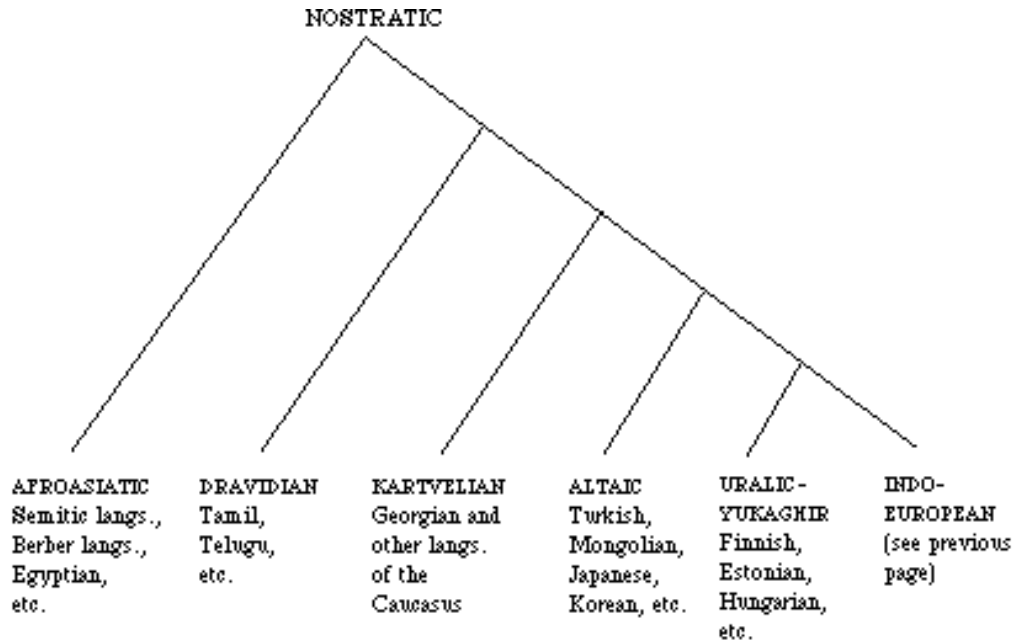
of the original human language are the principles of organization in syntax, words, and sounds that are universal to all languages today.

The “family trees” on the next two pages show two families: INDO-EUROPEAN, a grouping that all linguists accept, and NOSTRATIC, which most linguists doubt.



The genetic relationship of the Indo-European languages was established over a century ago and is universally accepted. The general outline of the tree (the branching indicating closer or more distant relationships within the family) is also generally accepted in broad detail, though some specific branchings may be disputed. The most recent theory on the homeland of the original Indo-European speaking community is in Anatolia (part of modern Turkey) about 8000 years ago.





The Nostratic family was proposed by Soviet linguists in the 1960's. Many linguists do not believe that a linguistic genetic relationship has been demonstrated among the groups claimed to make up this family. If these groups *are* related, Afroasiatic would be the first group to have branched off. The rest of the tree here merely joins the groups, starting in the southeast and working toward the northwest of the "Nostratic area". The original Nostratic speaking community would probably have existed more than 15,000 years ago. No speculation on homeland is proposed here.