The scope of linguistics

John Goldsmith

Origins of linguistics

- In several cases, the roots of linguistics lies in the wish to maintain sacred texts.
    - Most notably in the preservation of the Vedas, and the tradition in India of which Panini's work (c. 6th century BC) is the pinnacle.
    - Islamic tradition began a century after the writing of the Koran, to counter the evolution of Arabic dialects. (Sibawayhi)
    - Medieval Hebrew grammarians (heavily influenced by Arabic tradition).

Linguistics in the classical world

- Dionysius Thrax (2nd century BC) Greek linguist of great influence. Provides an analysis of Greek parts of speech (categories of words).

Linguistics?

- Systematic (or, scientific) treatment of the structure of language.

- The search for an *explanation* of aspects of language.

- Ah – but *what is an explanation*? In the late Middle Ages, it involved the study of the writings of the scholars from the Classical period (Roman, Greek)…

19th century

A major component of the 19th century's understanding of an *explanation* was a precise account of the *historical* origin of whatever it is we are studying: a people, a word, a language, a nation.
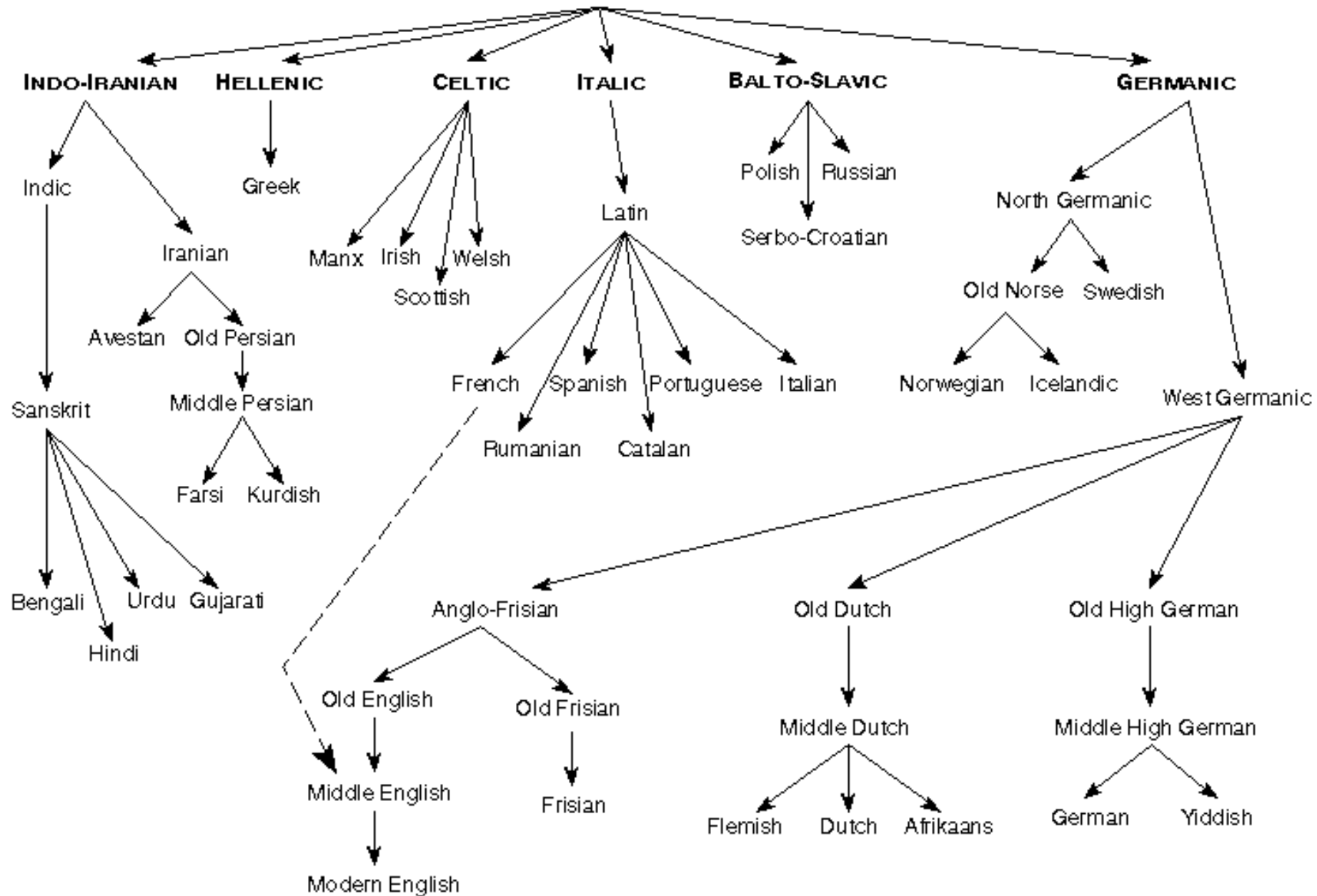
The search for the history of European languages, especially insofar as this bears on what the peoples of Europe are.

- Etymologies
- Law of (exceptionless) sound change: sounds change in mechanical ways over time.
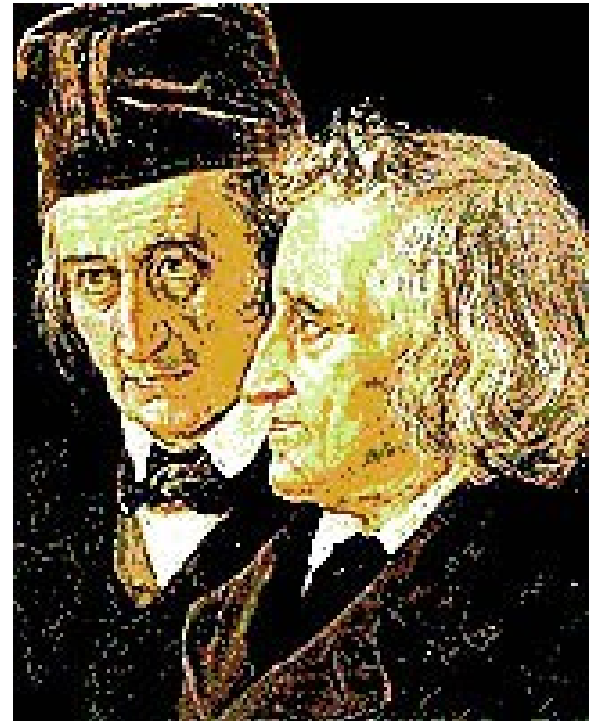- The discovery of Indo-European

IndoEuropean

- Indo-Iranian languages
- Italic languages (including Latin and its descendants, the Romance languages)
- Germanic languages
- Celtic languages
- Baltic languages
- Slavic languages
- Albanian language (and extinct cousins)
- Anatolian languages (extinct, most notable was Hittite)
- Tocharian languages (extinct, Chinese Turkestan):
- Greek
- Armenian

Proto-Indo-European

INDO-IRANIAN — **HELLENIC** — **CELTIC** — **ITALIC** — **BALTO-SLAVIC** — **GERMANIC**

INDO-IRANIAN
- Indic
- Iranian
  - Avestan
  - Old Persian
    - Middle Persian
      - Farsi
      - Kurdish
- Sanskrit
  - Bengali
  - Hindi
  - Urdu
  - Gujarati

HELLENIC
- Greek

CELTIC
- Manx
- Irish
- Welsh
- Scottish

ITALIC
- Latin
  - French
  - Spanish
  - Portuguese
  - Italian
  - Rumanian
  - Catalan

BALTO-SLAVIC
- Polish
- Russian
- Serbo-Croatian

GERMANIC
- North Germanic
  - Old Norse
    - Norwegian
    - Icelandic
  - Swedish
- West Germanic
  - Anglo-Frisian
    - Old English
      - Middle English
        - Modern English
    - Old Frisian
      - Frisian
  - Old Dutch
    - Middle Dutch
      - Flemish
      - Dutch
      - Afrikaans
  - Old High German
    - Middle High German
      - German
      - Yiddish

Prepared by Jack Lynch, jlynch@andromeda.rutgers.edu

Grimm's Law

	Labial	Dental	Vela	Labio-velar
Unvoiced	p	t	k	kw
Voiced	b	d	g	gw
breathy voiced	bh	dh	gh	ghw

Proto IndoEuropean	Germanic
p t k	f θ x
b d g	p t k
bh dh gh	b d g

PIE	Germanic	Latin	Greek
p t k	**f θ x** foot, fire; three; 100, hemp, heart	**p t k[c]** pedal; triple	**p t k** pod-, pyro-; cannabis, cardiac
b d g	p t k hemp, foot, knee	b d g pedal, genuflect	b d g cannabis, cardiac
bh dh gh	b d g brother	f(b), f(b,d) h fraternal	f θ x

Cognates

```
Proto-Indo-European:   *wid- [*weid-, *woid-], "see," "know"
                       *gno-, "know"

      Greek: ἰδέα [idéa], "appearance, kind, sort, nature; Form"
             ἰδεῖν, "saw" [infinitive]
             εἶδον [eîdon], "I saw"; οἶδα [oîda], "I have seen, I know"
             εἶδος [eîdos], "form, shape, figure; Form; species"
             γιγνώσκω [gignôsko], "I know"
             ἄγνωστος [ágnôstos], "unknown, not be be known"

      Sanskrit: √vid, "find out, comprehend, know, know about"
                vidya, "knowledge, learning, science"
                veda, "ritual knowledge, lore, sacred knowledge, Veda"
                √jña, "know, recognize, perceive, learn"
                jñana, "knowledge"; avidya, "ignorance"

                    Urdu:  janna, "know"
                    Punjabi:  janna, "know"

      Latin:   videre, "to see"; video, "I see"; vidi, "I saw"
               visum [visus, visa], "seen, appearance"
               noscere [gnoscere], "to know"; nosco, "I know"
               cognoscere, "learn, know"; cognosco, "I know"

           Italian:  vedere, "to see"; vedo, "I see"; vidi, "I saw"
                     conoscere, "to know"; conosco, "I know"

           Romanian: vedea, "to see"
                     cunoaste, "to know"

           Spanish: ver, "to see"; veo, "I see"; visto, "seen"
                    vista, "sight, view, appearance"
                    conocer, " to know"; conozco, "I know"

           French: voir, "to see"; vois, "I see"
                   connaître, "to know"; connais, "I know"

      German: wissen, "to know"; weiß, "I know"; gewußt, "known"

      Old English: witan, "be aware of, know, understand"
                   cnawan, "to know"; wis, "wise"

           Middle English:  witen, "to know"; wis, "wise"
                            knowen, "to know"

                Modern English:  wise, wit, witty
                                 know

      Russian:   видеть [videt], "to see"
                 знать [znat], "to know"
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20ᵗʰ century

- (Extending from the 19ᵗʰ century:) the discovery of the vastness of the non-Western world: in this case, of the thousands of non-European languages. What can they tell us about Language?

- Especially in the United States: the desire to understand the (largely unwritten) languages of non-European peoples (Native American, in the North American tradition). Rise of field of anthropology.

Linguistics departments…

- arose (later) either from Classics departments (Chicago) or Anthropology departments.

Algorithm as mode of explanation

- An algorithm is a completely *explicit procedure* that could be performed and accomplished by a finite digital device.

- The notion has antecedents before the 20[th] century (especially in development of logic), but it became important in the development of the philosophy of mathematics, and then the development of the computer (1940s – 1950s).

Abu Ja'far Mohammed
ibn Musa Al-Khowarizmi

Hisab al-jabr wál-muqabala
Liber Algorismi de numero Indorum

Explanation…

- Psychological (functional) explanation: something about language is *explained* if it can be shown to follow from psychological principles.

- Sociological explanation: something is *explained* if we can place it in a sociological context. How do languages change? What groups of people are linguistically innovative, which ones are conservative?

Fields of linguistics

- Historical linguistics (one sense of explanation).

- "Theoretical linguistics": algorithmic explanation; influence of Noam Chomsky.

  Syntax: algorithmic, functional/cognitive

  Phonology: American and European structuralism; Generative phonology (1965-1975?)…

Phonology

- Structuralism 1920-1965
- Generative phonology 1965-1975
  Representation-based phonology
  (autosegmental, metrical phonology)
  1975-1990
- Lexical phonology (1980s)
- Optimality theory (1990s)

Edward Sapir

Linguists
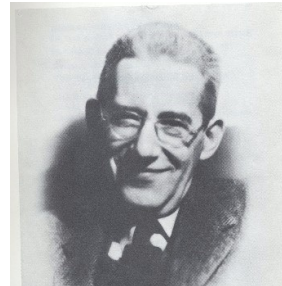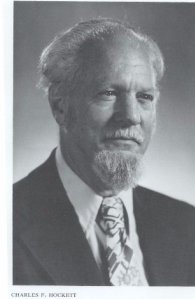
Charles Hockett

Leonard Bloomfield

1850　　　　1900　　　　　　　　　　2000

Ferdinand de Saussure
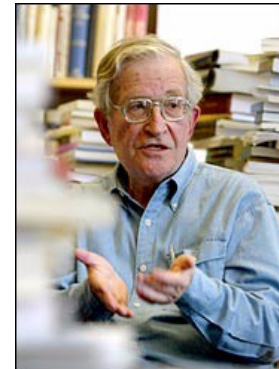
Noam Chomsky

Structuralism
1920-1965

- Ferdinand de Saussure
- Nicolas Trubetzkoy
- Roman Jakobson
- Edward Sapir
- Leonard Bloomfield
- Zellig Harris
- Charles Hockett
- Kenneth Pike

Ferdinand de Saussure 1857-1913

- Cours de linguistique générale
- The distinction between synchronic and diachronic approaches to language, and the significance of synchronic approaches
- Language as speech occurrences, language as a system

Also: IE laryngeals; see http://www.utexas.edu/cola/depts/lrc/iedocctr/ie-docs/lehmann/reader/chaptersixteen.html

Count Nicolas Troubetzkoy 1890-1938

- The development of structures of phonemes in inventories, and of phonological features (along with Roman Jakobson)
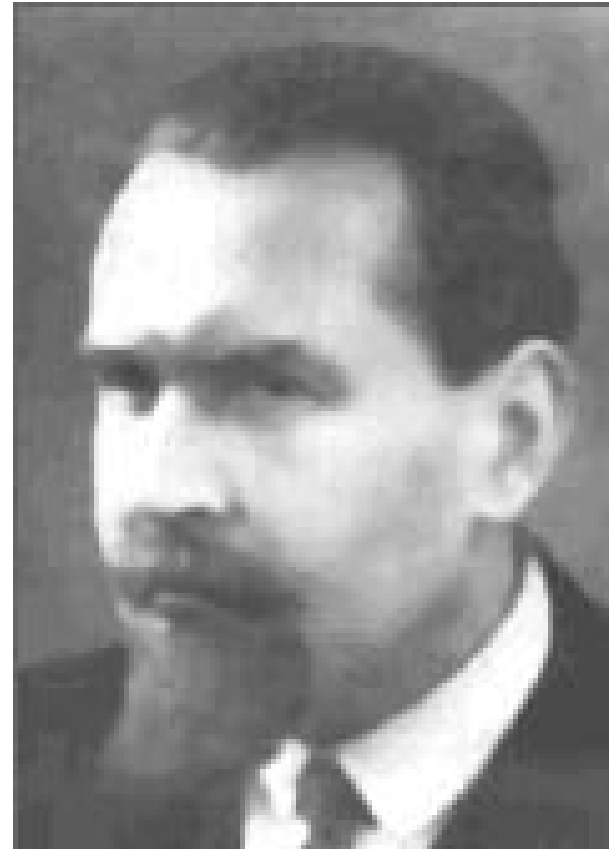
Roman Jakobson 1896-1982
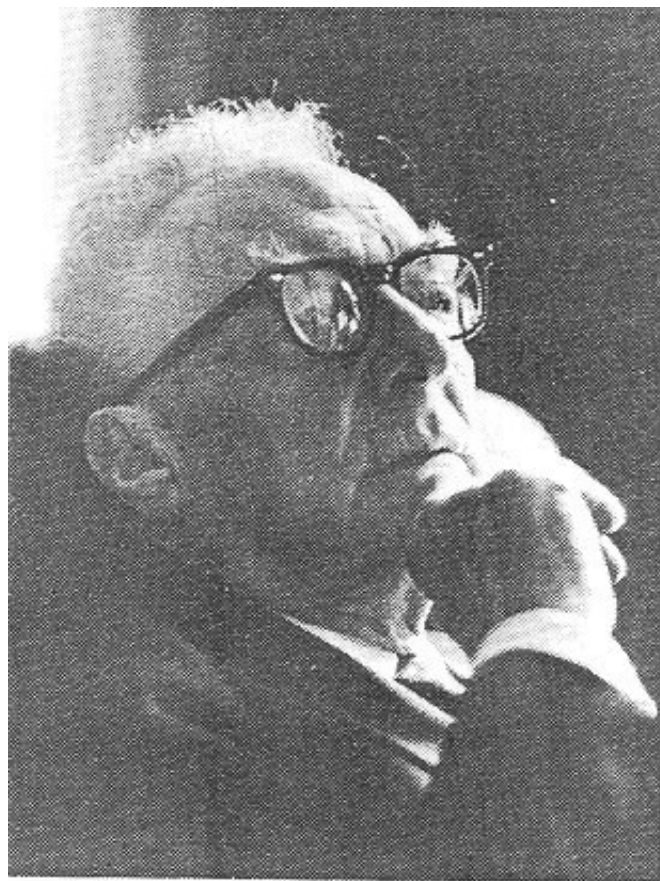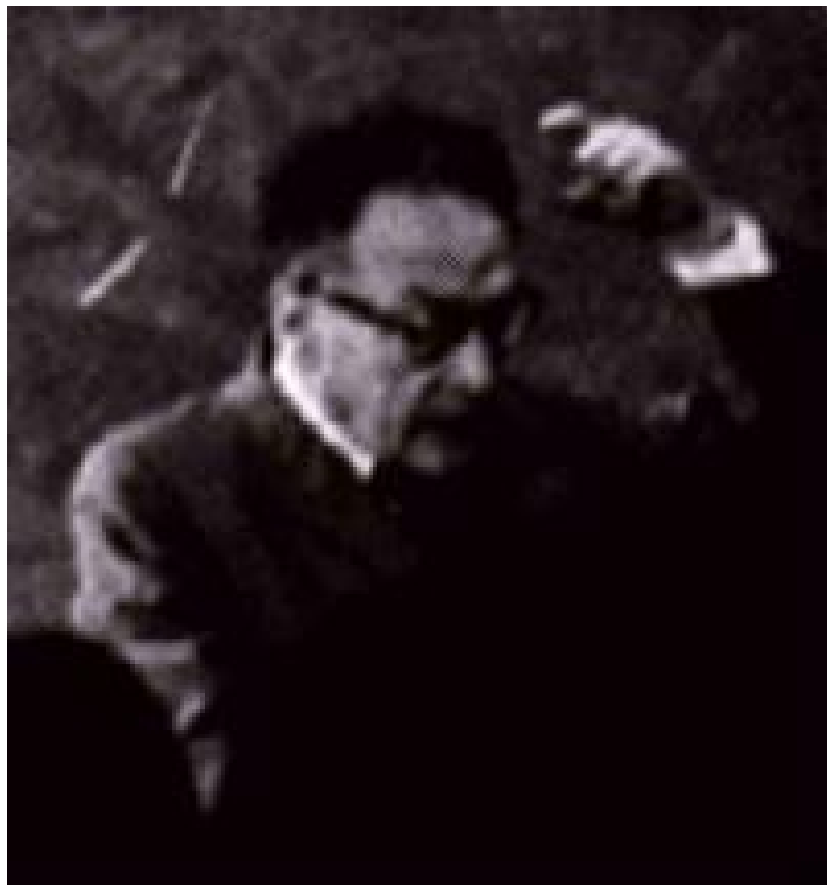
Roman Jakobson (1896–

Edward Sapir 1884-1939

- U of Chicago 1925-1931

- The development of Native American studies: the significance of historical studies of unwritten languages

Leonard Bloomfield 1887-1949

- University of Chicago 1927-1940

Zellig Harris 1909-1992

- Chomsky's teacher
- Inventor of transformational grammar
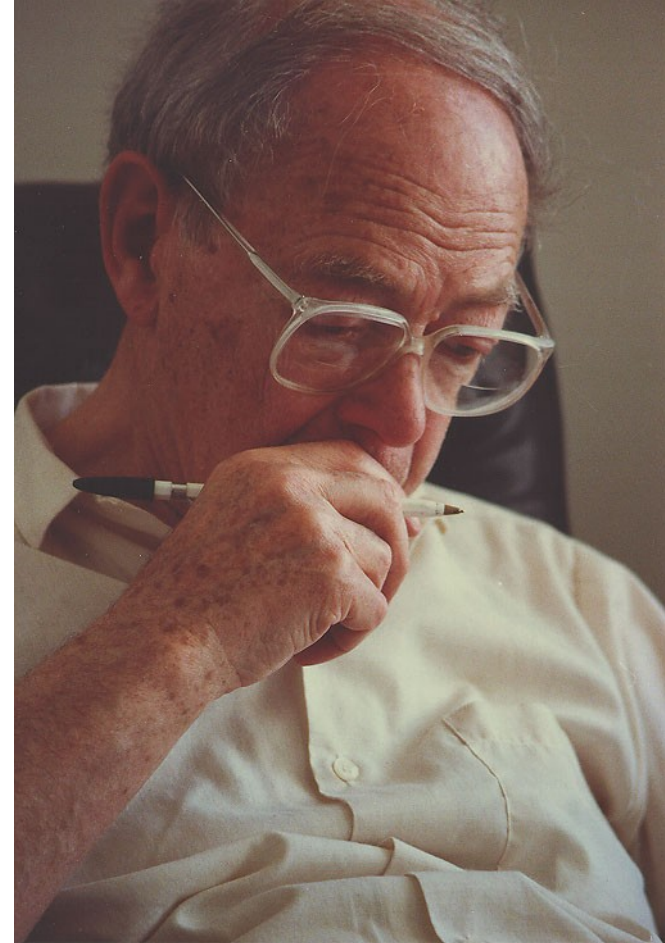
Charles Hockett 1916-2000
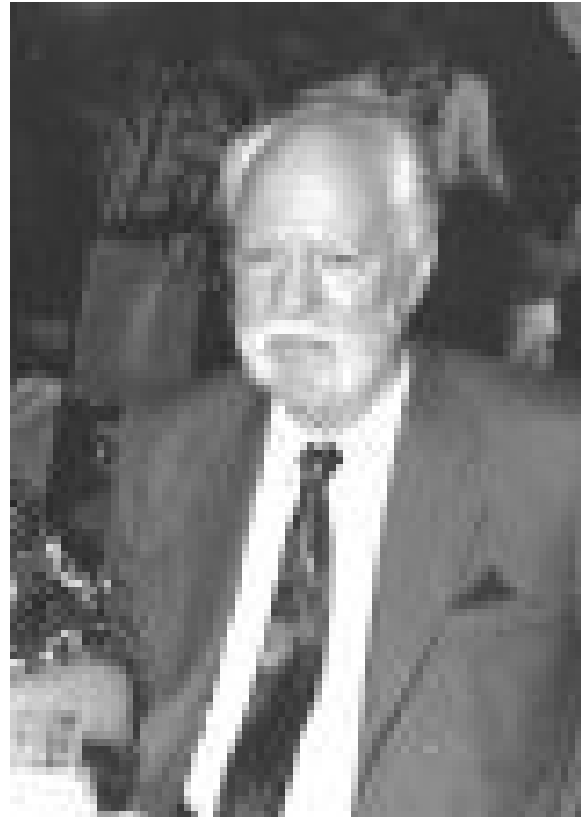
Kenneth Pike 1912-2000

- Tone languages
- Missionary
- Work on the development of orthographic systems for unwritten languages
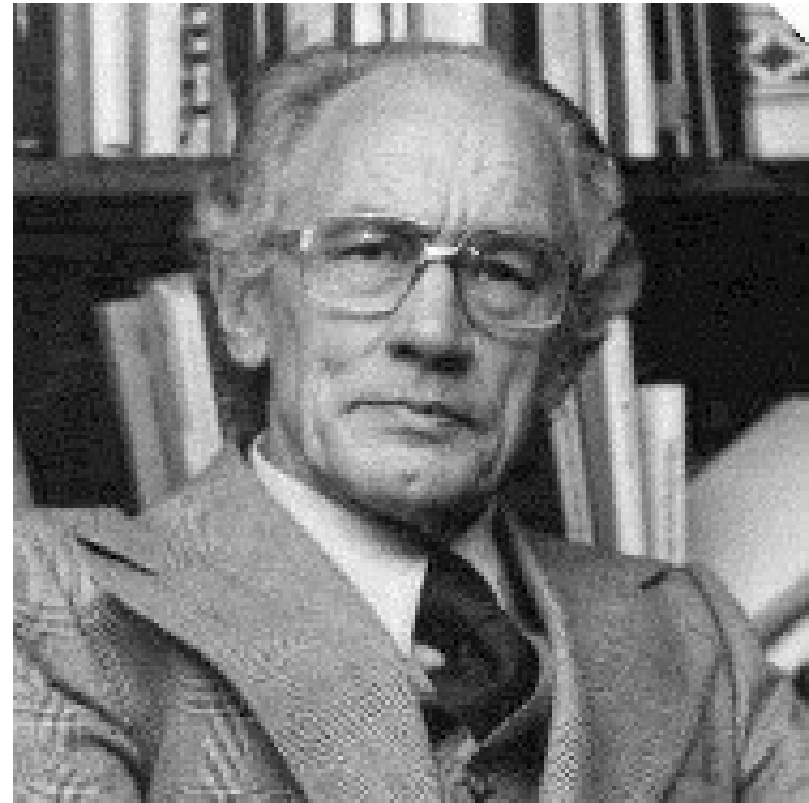
Cognitive revolution

A development of the cybernetics movement (1940s-1950s)

– Norbert Wiener, John von Neumann
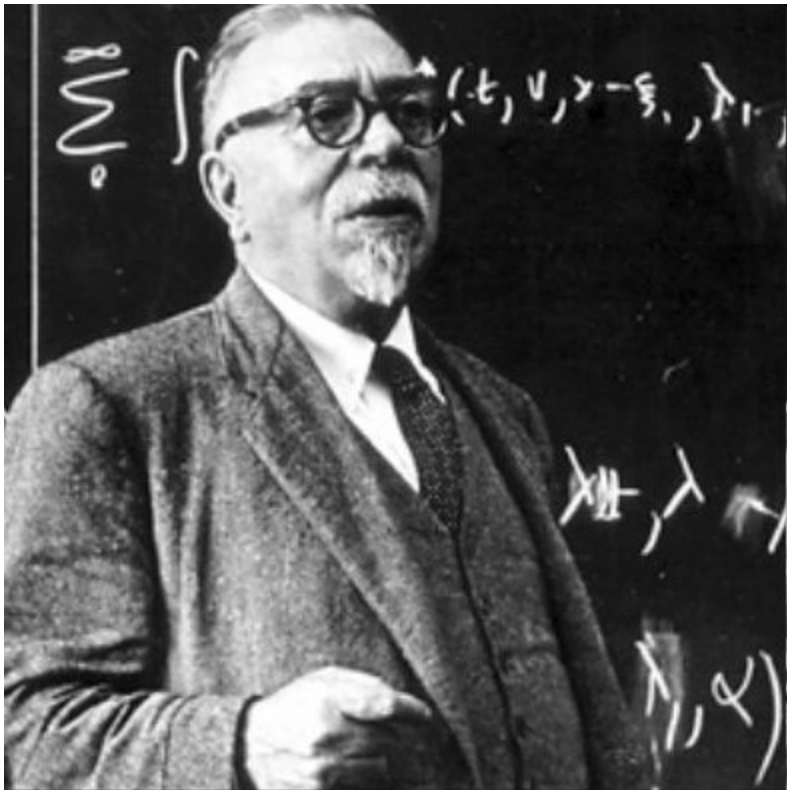
Cognitive revolution of the 1950s
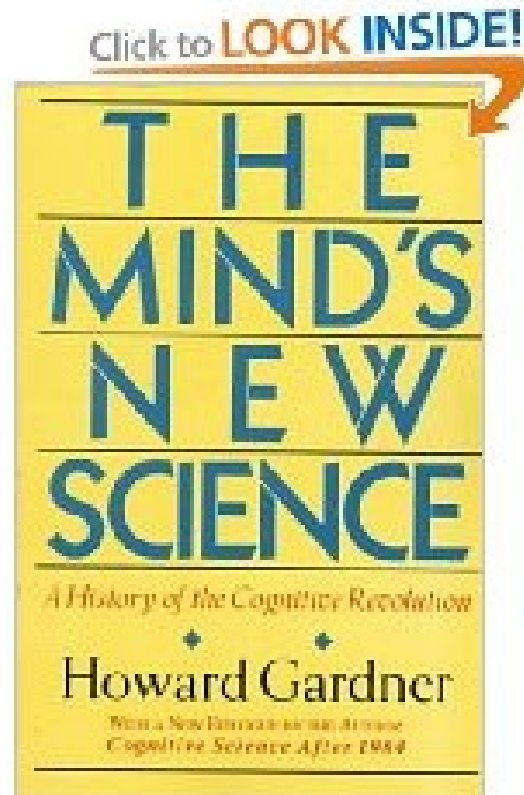
Noam Chomsky

Marvin Minsky

Seymour Papert

George Miller

John Holland

Claude
Shannon
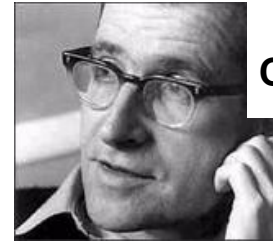
Noam
Chomsky

Alan
Turing

George
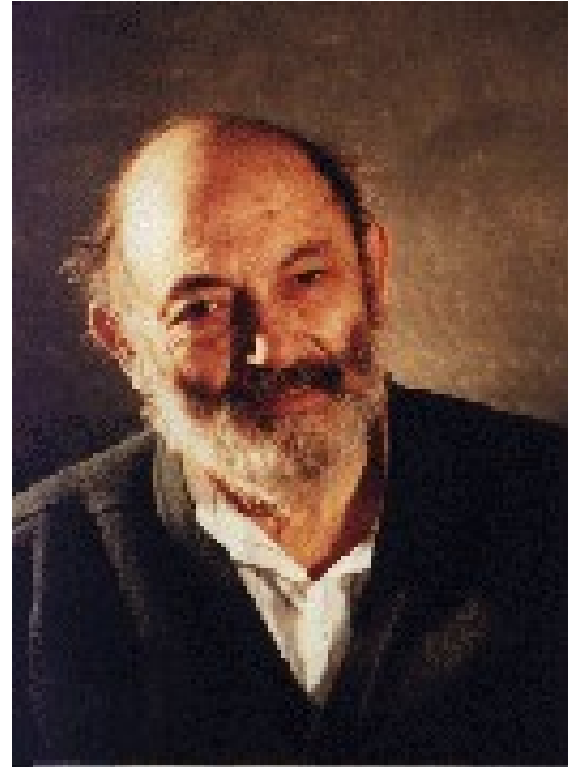Miller

1900

2000

John von
Neumann

Cybernetics-
Cognitive
sciences
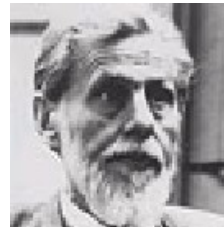
Norbert
Wiener

Warren
McCulloch
& Walter
Pitts

Generative Phonology

- *Sound Pattern of English* 1968
- Noam Chomsky (1928-) and Morris Halle (1923-)

Generative grammar, more generally

- Dated from 1957: Chomsky's *Syntactic Structures*

- What are the issues?

  What makes a discipline a science? As far back as the 1920s, linguists have said *Finally we've gained the status of **science***.

  In the structuralist period (in the U.S.), the focus was on *scientific method*: a set of methods for obtaining data without subjective bias.

- In the generative era, the structuralists' belief that linguistics was a kind of anthropology (a study of culture) was rejected; Chomsky characterized structuralist models as unconcerned with *truth*.
- He proposed that grammars were psychological models: *truth* of linguistics was psychological truth.

- Chomsky also adopted an interpretation of explanation that was thoroughly *algorithmic.*

Phonology after generative phonology

- Metrical phonology: Mark Liberman, Alan Prince, Bruce Hayes

- Autosegmental Phonology: John Goldsmith, G. N. Clements

- Lexical Phonology: Paul Kiparsky

- Optimality Theory: Paul Smolensky, Alan Prince, John McCarthy

Syntax

- Generative syntax: 1957-1967

   Aspects of the Theory of Syntax (Chomsky, 1965)

Generative semantics: the explanatory foundation of syntax is logical form. Lakoff, Ross, McCawley, Postal.

Relational grammar

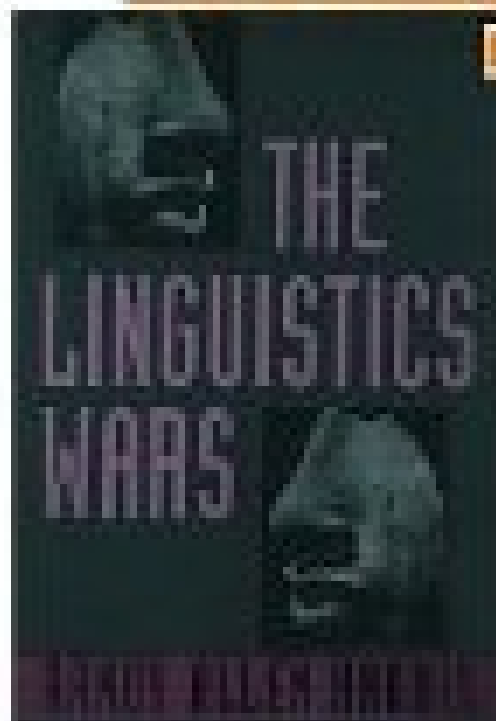Generalized Phrase Structure Grammar

LOOK INSIDE!

IDEOLOGY
AND
LINGUISTIC
THEORY

Noam Chomsky
and the
deep structure
debates

R

LOOK INSIDE!

THE
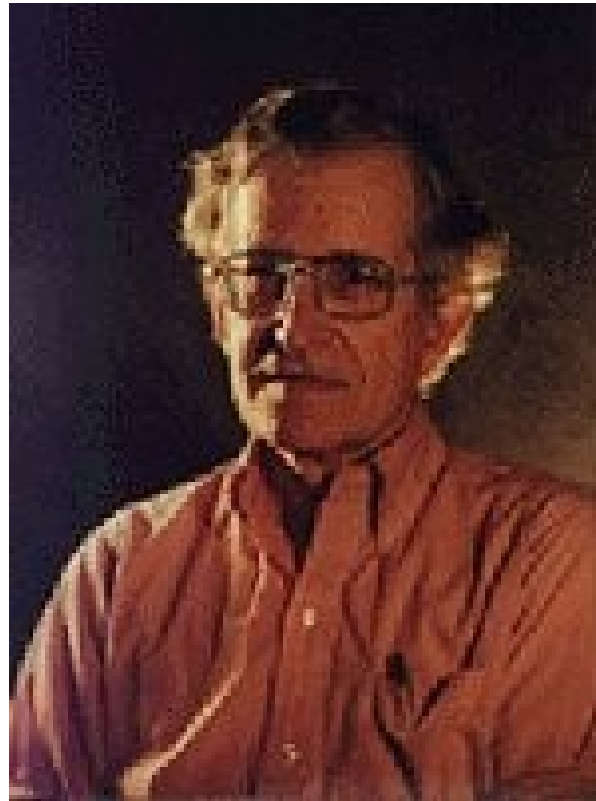LINGUISTICS
WARS

Generative grammar

- Chomsky: *Syntactic Structures* 1957
- *Aspects of the Theory of Syntax* 1965
- Generative semantics / interpretive semantics dispute: late 1960s pit Chomsky (Jackendoff…) against Lakoff, McCawley, Ross, and Postal.

The issue? As I see it, partly social and partly based on the major question…

Mediationalist vs distributionalist views of language

- Mediationalist views the essence of language as the mediation between the outer world (of speech) and the inner world (of thought)

- Distributionalist views the essence of language as a complex system formed by a large number of semi-autonomous components, obeying similar but distinct sets of principles.

Noam Chomsky

George Lakoff

James McCawley
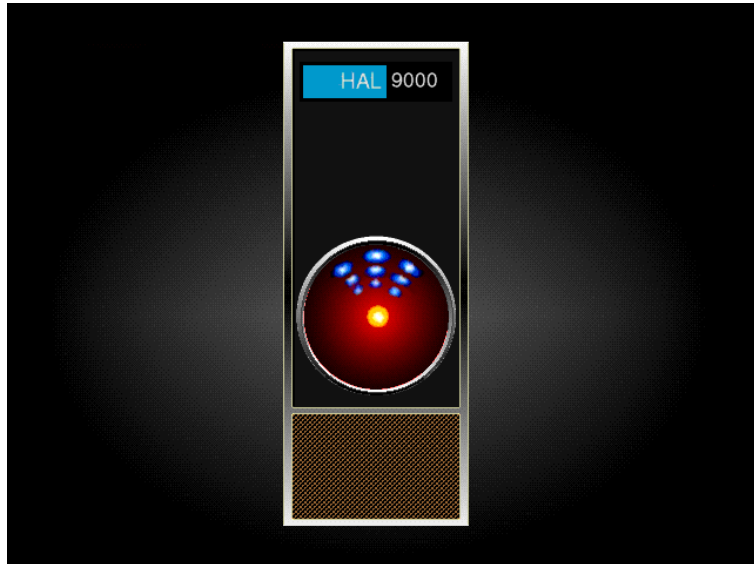
Haj (John R.) Ross

Cognitive grammar

- Lakoff – metaphor as a cognitive basis of language
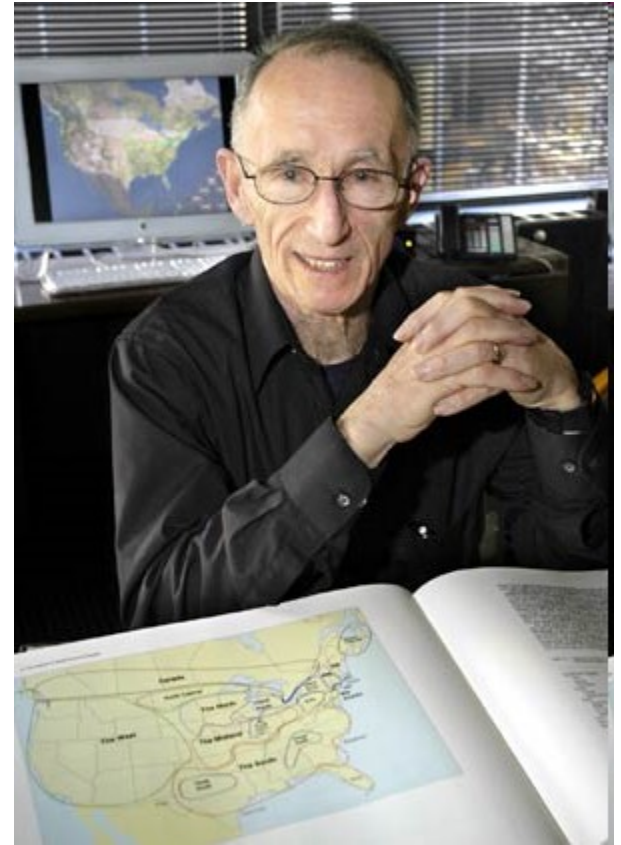- Ron Langacker

Theoretical and descriptive linguistics

- Ongoing tension between theoreticians and descriptive linguists.

- Computational linguistics: The impact of very large corpora – the nature of data
- EMELD project

Sociolinguistics

- William Labov

- Pragmatics
- Descriptive linguistics