

Language and the Mind Sciences

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Language and the Mind Sciences: A book in two volumes, with Bernard Laks, exploring the connections, ruptures, and continuities among linguistics, philosophy, psychology, and logic.

- Volume 1: 1800 to 1940: The first four generations.
- Volume 2: 1940 to 1970.

The handout is a visual index to Volume 1. It is not an intellectual map of the 19th century.

Experience 1: Three moments

- 1976: Bloch, Harris
- 1985: Reading Hockett 1956. Rereading Kiparsky.
- 1990: Firth's influence on generative phonology

Experience 2: Three books

- Fritz Newmeyer: *Linguistic Theory in America* 1980.
- Howard Gardner: *The Mind's New Science* 1985.
- Thomas S. Kuhn: *The Structure of Scientific Revolutions* 1962.

Theme 1: Several themes

- Expand the horizon to include enough additional material that the true outlines can be perceived.
- This means including deeper time and more disciplines: linguistics, psychology, philosophy, logic.
- We will look at patterns of "flow" and "resonance", uncovering patterns of continuity and of rupture.
- One of the surprising pattern is Noah and Jehovah. A generation-based phenomenon – we will return to this.

Big Idea 1: Hard mentalism, soft mentalism

1. **Soft mentalism**: self-awareness, immediacy, vision through Cartesian "natural light of reason"; phenomenology (Brentano, Husserl), Brouwer's understanding of intuitionism.
2. **Hard mentalism**: no role for subjectivity, a mechanical implementation of all legitimate inference of logic. Roots in John Locke and Gottfried Leibniz, further pursued by George Boole in the 19th century, and then George Hilbert in the next generation. Apparent disastrous collapse occasioned by Gödel's theorem, but revived with the invention and later creation of the computer (Turing and followers).
3. From the end of Rosenbloom's book: where Chomsky got the Post production systems.

Chapter 1: Introduction

- Sweep the stable clean! Tabula rasa! Jehovah's problem and Noah's problem.
- Scientism and disciplinary anxiety. This anxiety comes out in different ways, sometimes as concern with methodology (Neogrammarians, for example) and sometimes as mathematics (generative grammar).
- The trend to identify science with **mechanism**. But what is mechanism? There were two major threads in the Galileo-Descartes-Newton scientific revolution: (a) local interaction in space and time: all change is continuous and local change in space (Descartes); (b) the language in which the book of nature is written is that of mathematics (Galileo, Newton).
- **Liberation moments: you don't understand a movement or a period unless you understand why young people found the ideas to be liberating.**
- This is closely related to the role of generations in how dominant ideas change.
- But we will not discuss the credit assignment problem (if it is a problem).

Chapter 2: 19th century and language

- The biggest science was **geology**.
- The greatest challenge was the fall of the **authority of the Bible**.
- The universe had already grown larger in the 17th-18th century.
- The universe got **older** in the 19th century, **due both to geology and to Darwin**.
- The **rise of the university** in Germany as a home to research (A. von Humboldt).
...
- **First generation**: learned from thinking about the languages being learned, especially Sanskrit.
- **Second generation**: learned from learning the classical languages through the grammars written by the first generation.
- Both of the generations lay influenced by the **Hegelian view of time**: there was a prehistoric period of development, in which the great ancient languages, such as Indo-European were created, followed by a historic period of decline.
- **Third generation**: Rejection of the Hegelian view, in favor of a *uniformitarian* view: we've always been the same kind of people. This great change was presented as a conflict over methodology (only regular sound change and analogy), but the second generation always rejected that characterization, and with justice.
- Others in the third generation: **William Dwight Whitney, Ferdinand de Saussure, and Baudouin de Courtenay**.
- Fourth generation: **Edward Sapir, Leonard Bloomfield, Roman Jakobson, Nikolai Trubetzkoy**
- Fifth generation (20th century): **Zellig Harris, Charles Hockett**
- Sixth generation (20th century): **Noam Chomsky, Morris Halle**

Chapter 3: Philosophy and logic

1. **George Boole, Gottlob Frege, David Hilbert, effective procedures, hard logic interpretation of mathematics, Alan Turing.**

Chapter 4: The mind has a body

1. Psychology: **Wundt and Brentano** at the end of the 19th century.
2. Calculating machines: Descartes, Pascal, Babbage's engine.

Chapter 5: Psychology 1900-1940

1. USA: Structuralism (Titchener's version of Wundt)
2. USA: Functionalism (Dewey and James)
3. USA: Behaviorism (J.B.Watson, Edward Tolman B.F.Skinner)
4. Europe: von Ehrenfels, Gestalt psychology
 - Berlin: the ones we remember
 - Vienna: Karl Bühler, who had a great impact on Trubetzkoy
 - Refugees to the US. WVO Quine and Nelson Goodman bring their ideas first to Harvard in the 1930s.

Chapter 6: Linguistics 1900-1940

1. Franz Boas and Edward Sapir
2. Leonard Bloomfield

Chapter 7: Philosophy 1900-1940

1. **Edmund Husserl**: a logic of concepts; notion of dependence. Impact on Trubetzkoy and Jakobson.
2. Rudolf Carnap and the Vienna Circle
3. Refugees to the US

Chapter 8: Logic 1900-1940

1. David Hilbert; Kurt Gödel; the passing of Hilbert's generation
2. The acceptance of the limitations of computation
3. The computer as proof of concept (Volume 2)

Chapter 9: Vienna and Prague, Trubetzkoy and Jakobson

1. Prince Trubetzkoy, the Soviet Revolution, and Eurasianism.
2. Roman Jakobson, the Moscow Linguistics Circle, the Revolution, The Prague Linguistic Circle.
3. Edmund Husserl and the logic of parts and wholes: features, and the dependency of properties. Phonological features.

Volume 2: Chapter 1: Structuralist linguistics in America

1. Zellig Harris
2. God's truth and hocus-pocus linguistics
3. Charles Hockett

Volume 2: Chapter 2:

1. Immigrants
2. World War II and the flight from Nazism, leaving Eurasianism and Husserl behind.
3. Roman Jakobson and the NY scene
4. Structuralism at the New School

Volume 2: Chapter 3: The cybernetics era

1. Warren McCulloch and Walter Pitts
2. Norbert Wiener
3. The creation of the computer
4. Macy conferences
5. Information theory, Roman Jakobson

Volume 2: Chapter 4: Thinking makes a comeback

- 1.
- 2.
- 3.

Volume 2: Chapter 5: Syntactic theory in the 1940s and 1950s

1. Wundt-Bloomfield tradition: immediate constituents
2. Logical tradition: Husserl, Polish logicians, Yehoshua Bar-Hillel, categorial grammar
3. Zellig Harris

Volume 2: Chapter 6: Generative grammar

- 1.
- 2.
- 3.

Volume 2: Chapter 7: 1956 Cognitive moment

- 1.
- 2.
- 3.

Volume 2: Chapter 8: The Standard Theories

1. 1965: *Aspects of the Theory of Syntax*
2. 1968: *Sound Pattern of English*

Volume 2: Chapter 9: Showdown: C'est tous des vieux cons

- 1.
- 2.
- 3.

Volume 2: Chapter 10: Internecine warfare: 1965-1970

- 1.
- 2.
- 3.