

NIJMEGEN LECTURES 2013
ON THE HISTORY OF PSYCHOLINGUISTICS

Pim Levelt

LECTURE 1 OVERVIEW AND TIMELINE

How old is psycholinguistics?

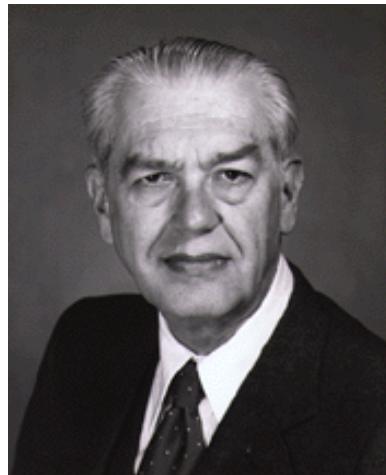
“With psycholinguistics in its fifth decade of existence...”

“Psycholinguistics is a young and fast changing science”

“For about four decades following its emergence around 1950, psycholinguistics. . .”

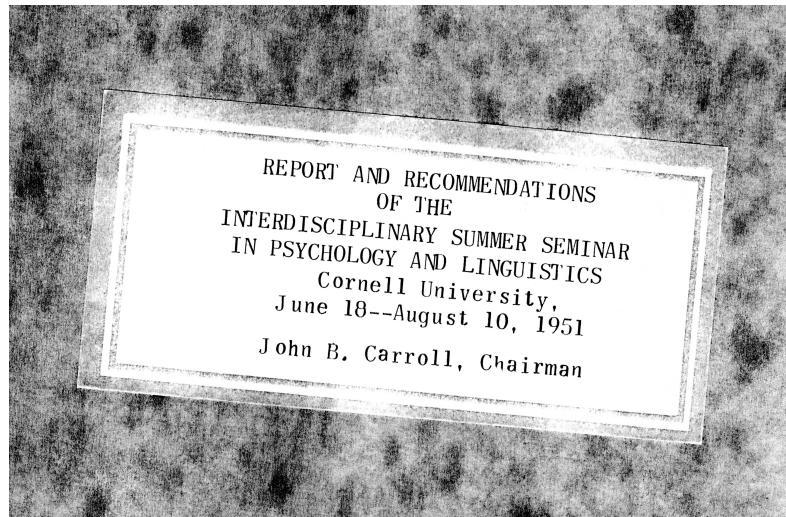
(some citations from textbooks and their promotion materials)

Summer Seminars of the Social Science Research Council

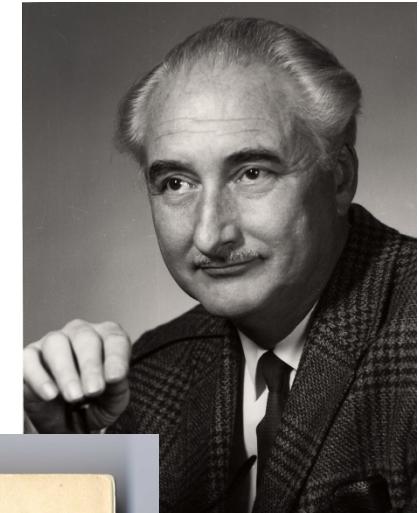


John Carroll

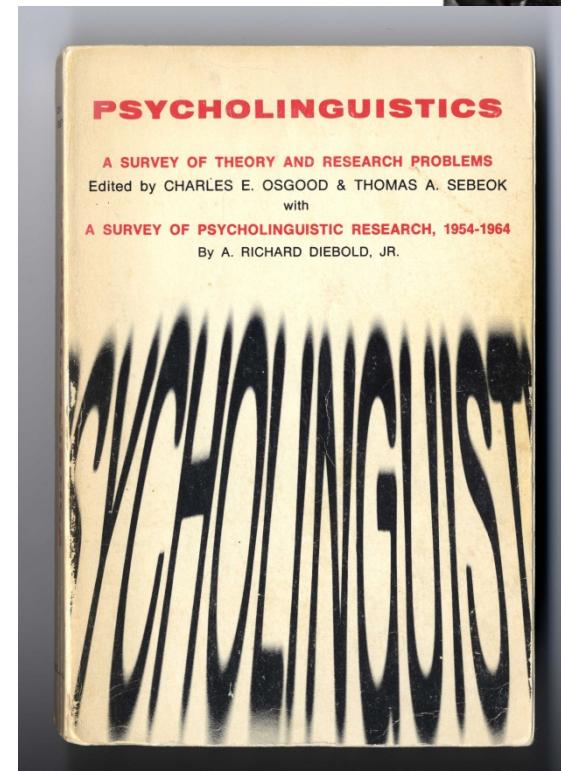
Cornell Seminar
1951



Charles Osgood



Indiana Seminar
1953



END OF THE 1950s: THE ‘COGNITIVE REVOLUTION’



Noam Chomsky



George Miller

FOUR EMPIRICAL ROOTS OF PSYCHOLINGUISTICS

1. Linguistic (comparative, structural, functional)
2. Adult processing (experimental, etc.)
3. Developmental
4. Brain and language

ROOTS

Linguistic

Adult processing

Developmental

Brain

1780-1900



Wilhelm Wundt's unification, *Die Sprache* 1900

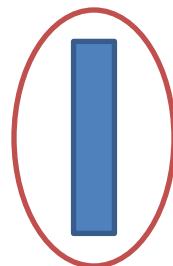
1900-World War II



Psycholinguistics during the Third Reich / Re-establishment of the discipline

ROOTS *Linguistic* *Adult processing* *Developmental* *Brain*

1780-1900



Wilhelm Wundt's unification, *Die Sprache* 1900

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THE LINGUISTIC ROOT

Romantic notion of evolution
(Johann Gottfried Herder's
1772 essay on language origins)

Discovery of the Indo-European language family
(William Jones's 1786 lecture)



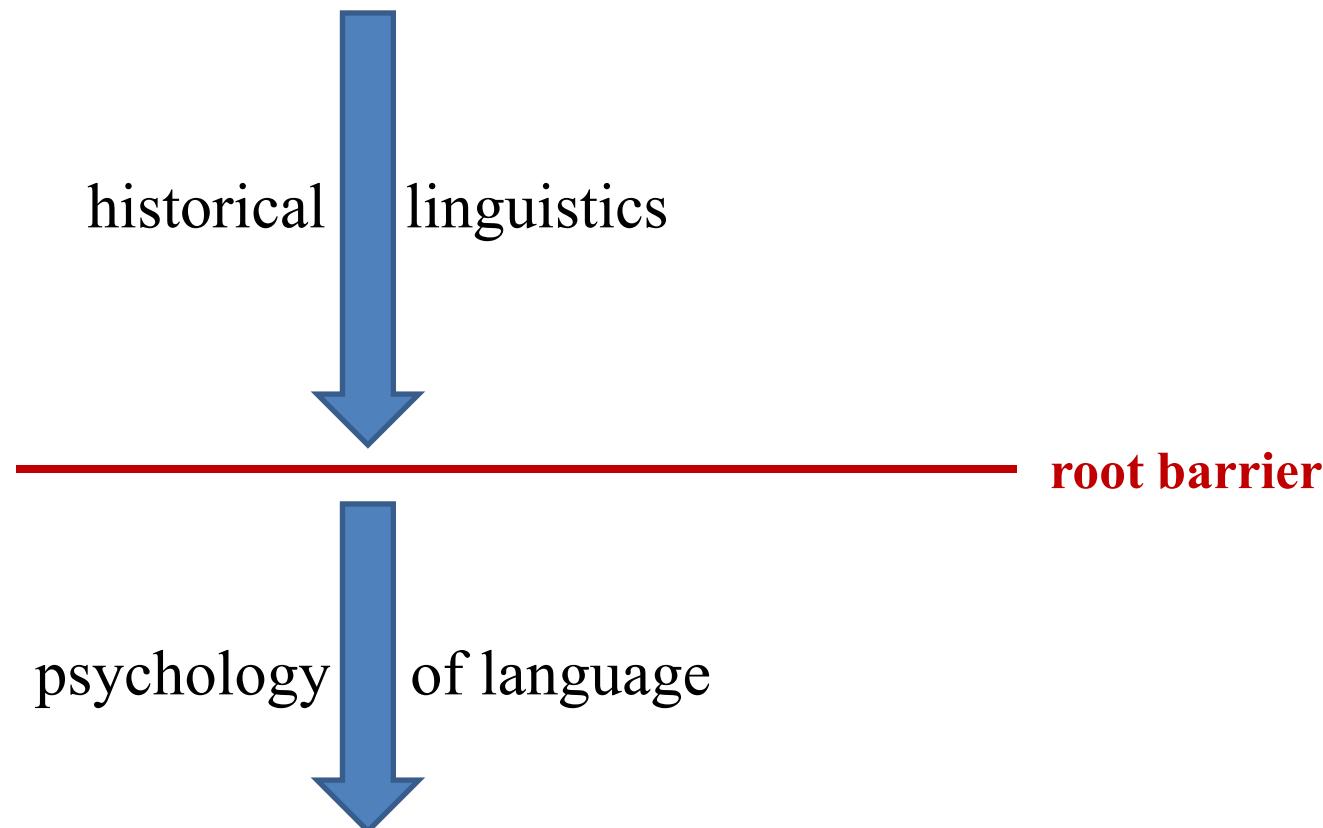
SEARCH FOR THE PROTO-LANGUAGE

How many *Urwurzeln* were there?

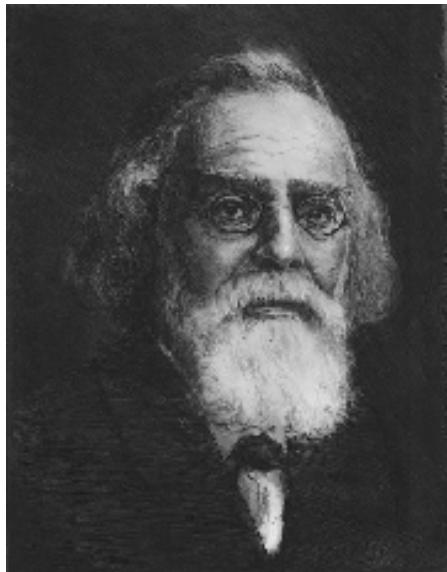
According to Max Müller there had been 121 core roots:

These 121 concepts constitute the stock-in-trade with which I maintain that every thought that has passed through the mind of India, so far as it is known to us in its literature, has been expressed. (Müller 1860, p. 406)

DILEMMA: GOING BEYOND THE ROOT BARRIER



HEYMANN STEINTHAL (1823-1889)



Inventor of the psychology of language

*Felicitous advances in linguistics
presuppose an advanced psychology.*

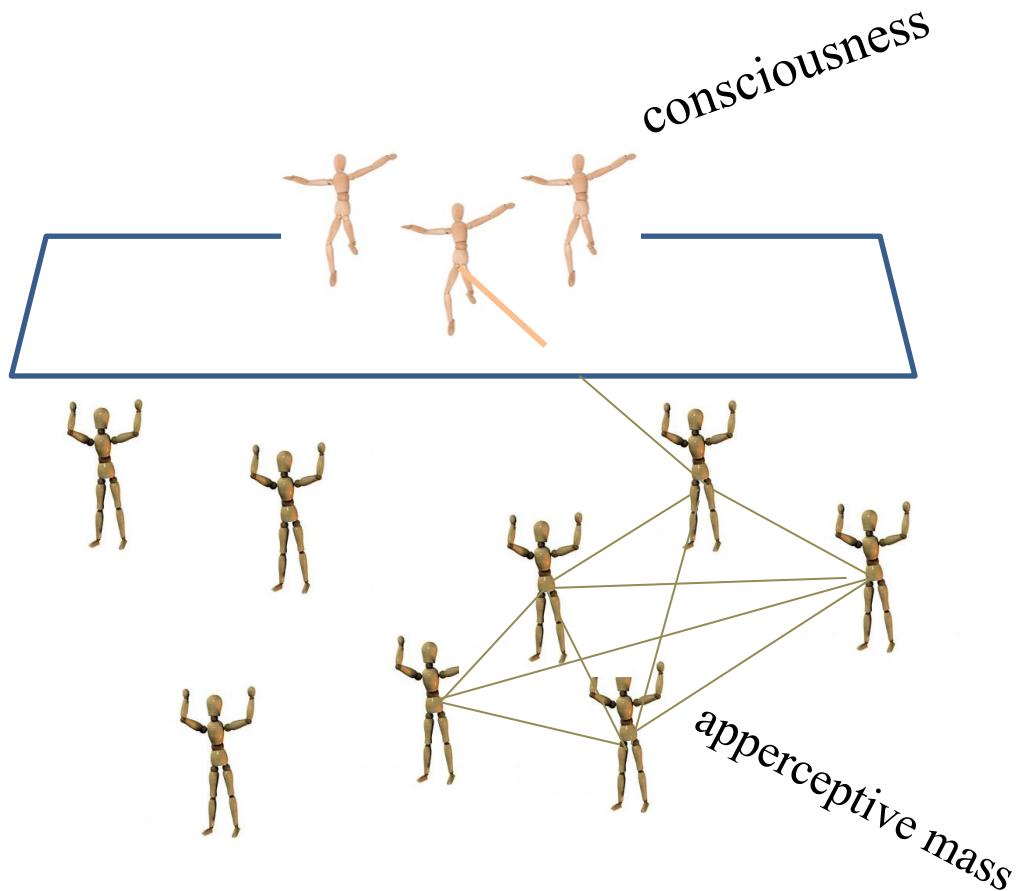
*Glückliche Fortschritte in der
Sprachwissenschaft setzen eine entwickelte
Psychologie voraus.*

(Steinitthal 1855, p. 234)

ZEITSCHRIFT FÜR VÖLKERSYCHOLOGIE
since 1859

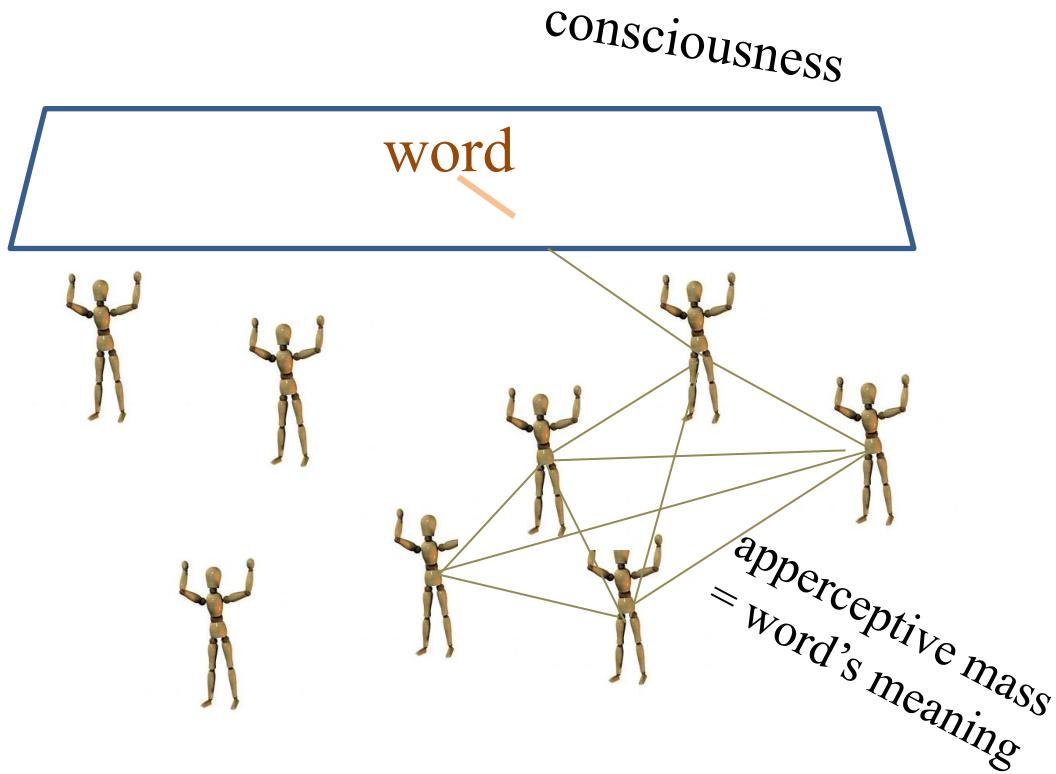
Founded by Mauritz Lazarus and Heymann Steinthal

THE PSYCHOLOGY OF JOHANN FRIEDRICH HERBART



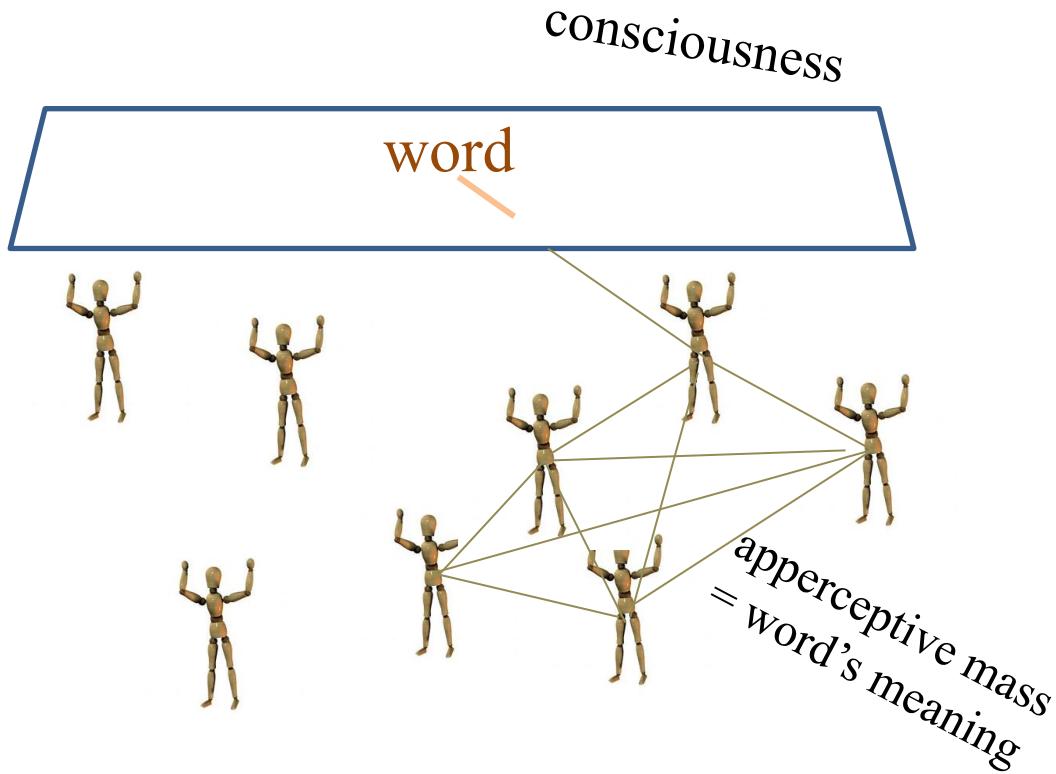
Johann Friedrich **HERBART**
Herbart (1776–1841)

STEINTHAL'S THEORY OF VERBAL WORKING MEMORY



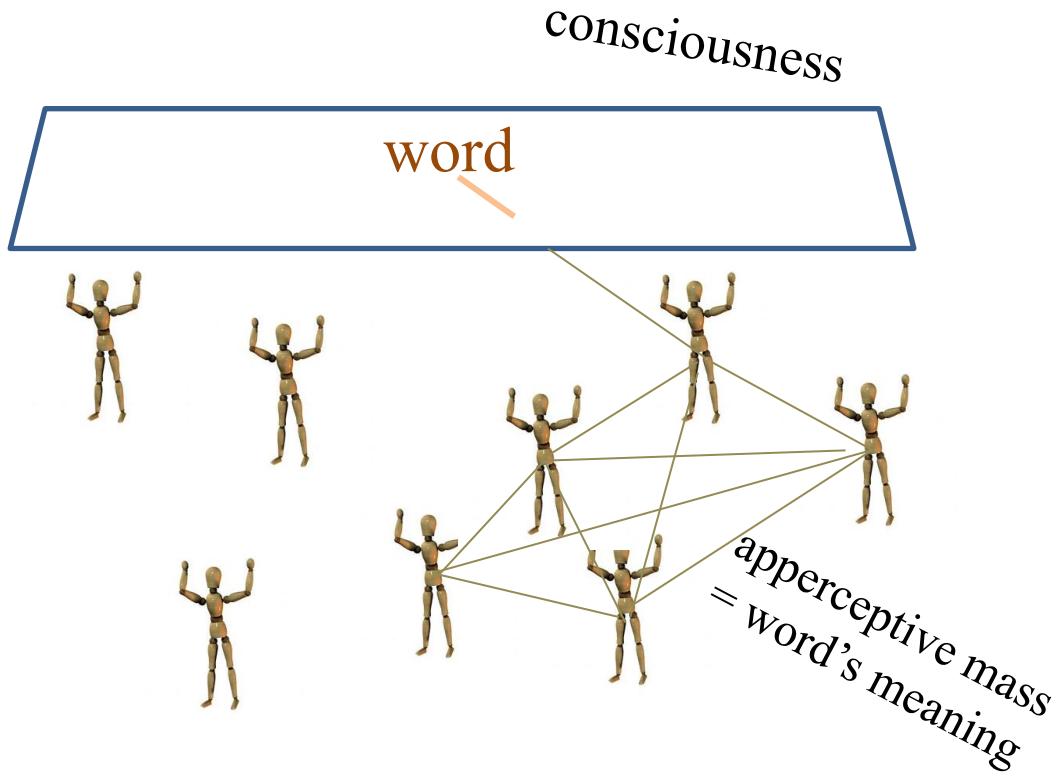
Any idea in consciousness is a word-idea, the abstract reference of a word to its unconscious meaning complex.

STEINTHAL'S THEORY OF VERBAL WORKING MEMORY

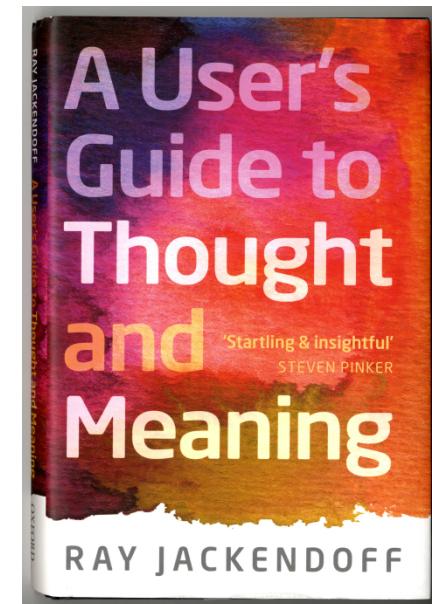


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STEINTHAL'S THEORY OF VERBAL WORKING MEMORY

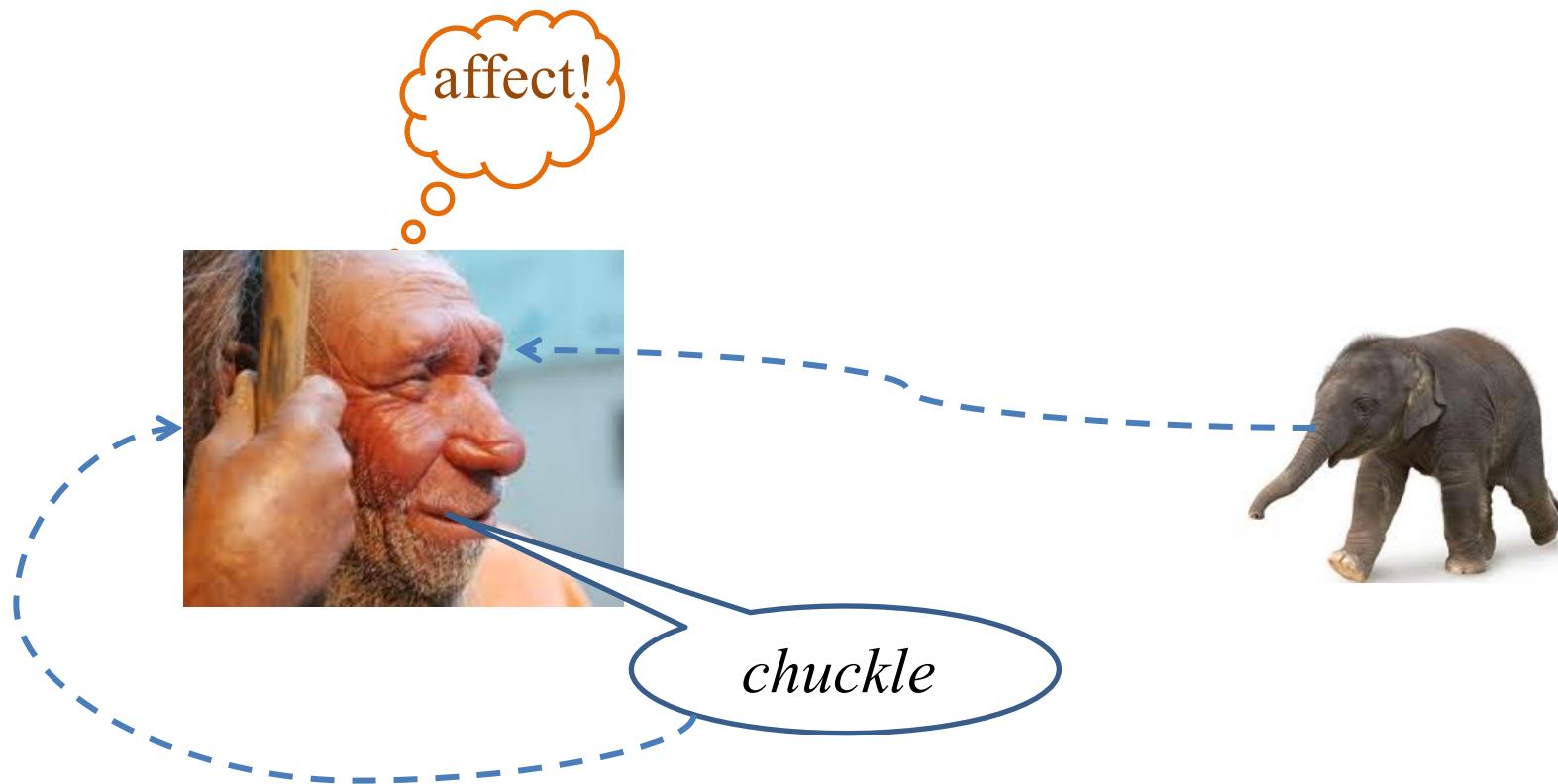


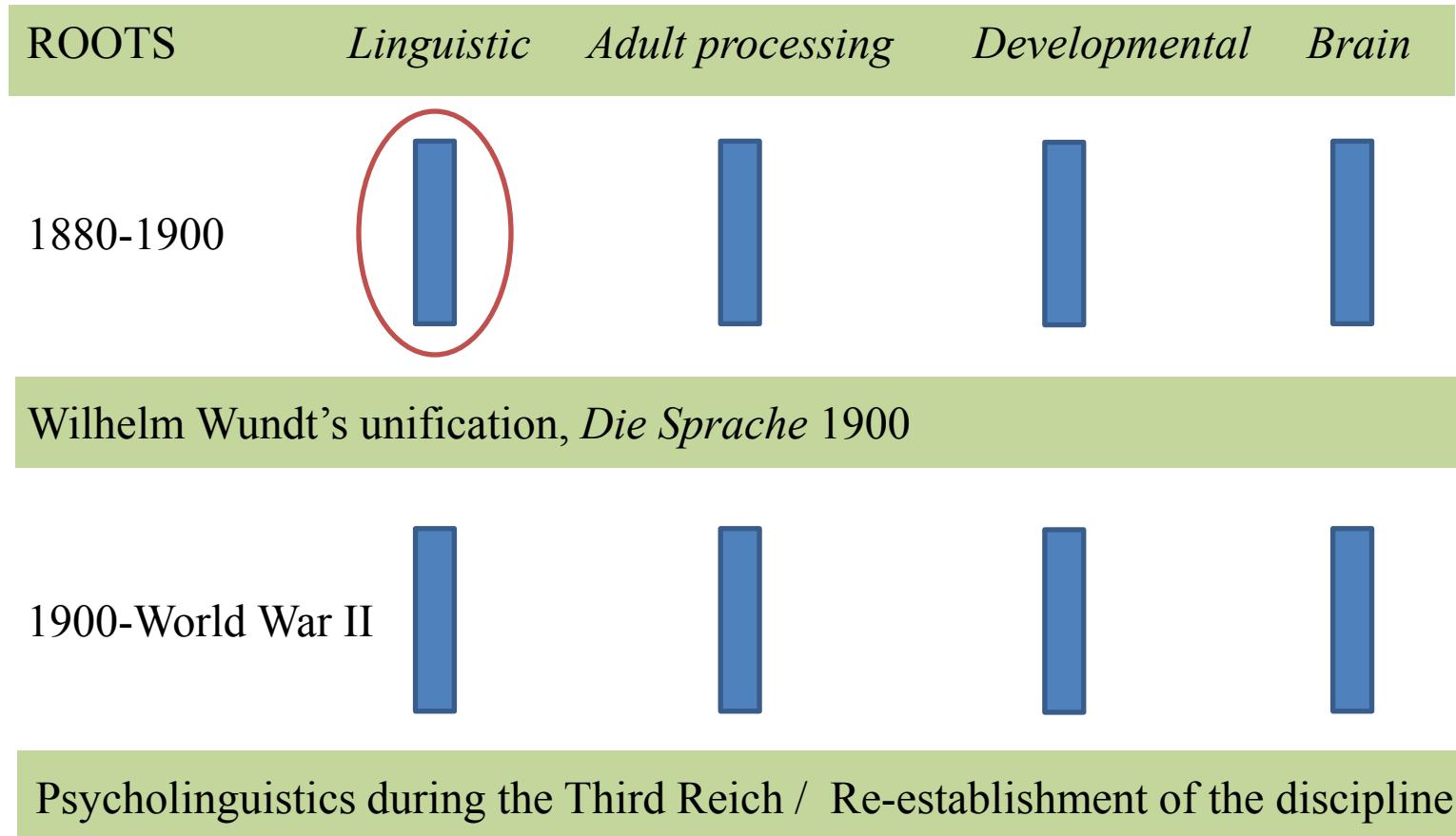
Any idea in consciousness is a word-idea, the abstract reference of a word to its unconscious meaning complex.



STEINTHAL ON ORIGINS OF LANGUAGE

Example: affective association of visual impression and self-perceived chuckle.





ROOTS

Linguistic

Adult processing

Developmental

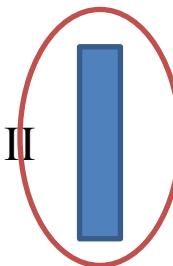
Brain

1880-1900



Wilhelm Wundt's unification, *Die Sprache* 1900

1900-World War II



Psycholinguistics during the Third Reich / Re-establishment of the discipline

ROOTS

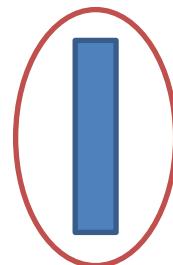
Linguistic

Adult processing

Developmental

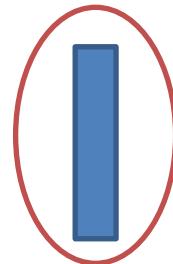
Brain

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Psycholinguistics during the Third Reich / Re-establishment of the discipline

ROOTS

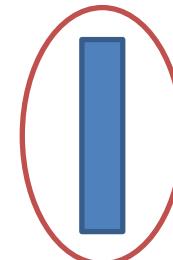
Linguistic

Adult processing

Developmental

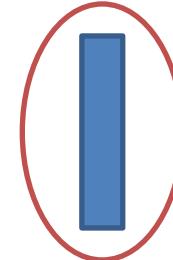
Brain

1780-1900



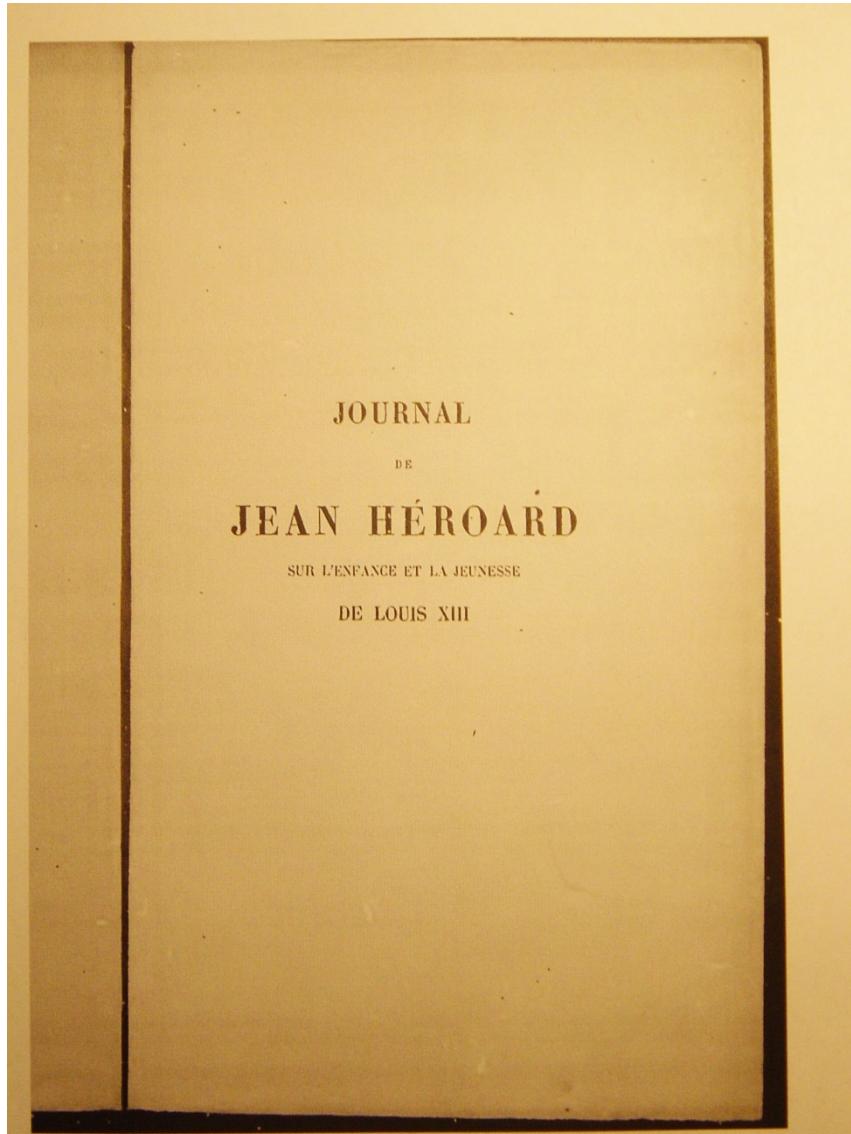
Wilhelm Wundt's unification, *Die Sprache* 1900

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Psycholinguistics during the Third Reich / Re-establishment of the discipline

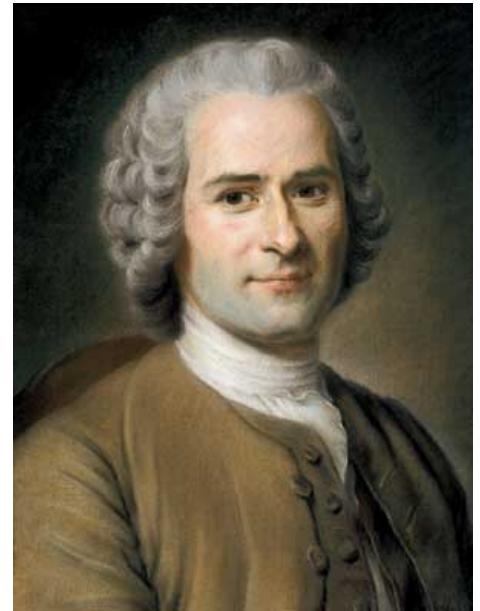
JOURNAL DE JEAN HÉROARD (1551-1629)



*Journal sur l'enfance et
la jeunesse de Louis XIII
(1601-1629)*

JEAN-JACQUES ROUSSEAU (1712-1778)

Émile, ou l'éducation (1762).



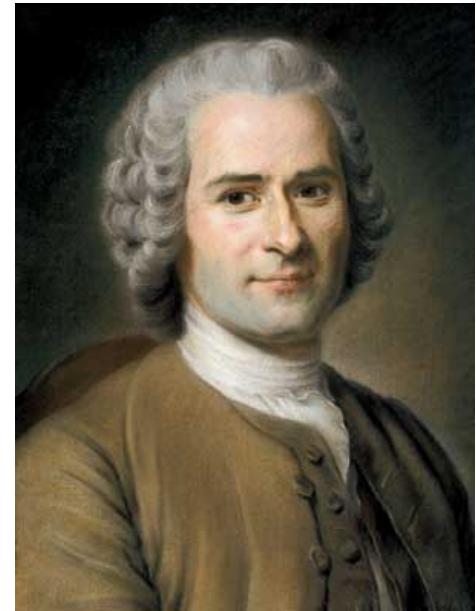
JEAN-JACQUES ROUSSEAU (1712-1778)

Émile, ou l'éducation (1762).

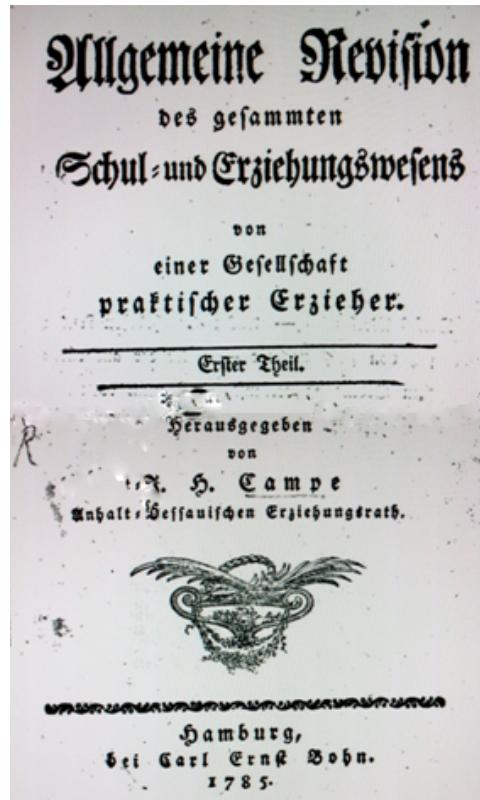
*Hence, begin by better studying your pupils,
because surely you don't know them at all.*

*Commencez donc par mieux étudier vos
élèves; car très-assurement, vous ne les
connoissez point.*

(Rousseau 1762 , Preface, p. 3).



JOHAN HEINRICH CAMPE'S ALLGEMEINE REVISION (1785-1793)



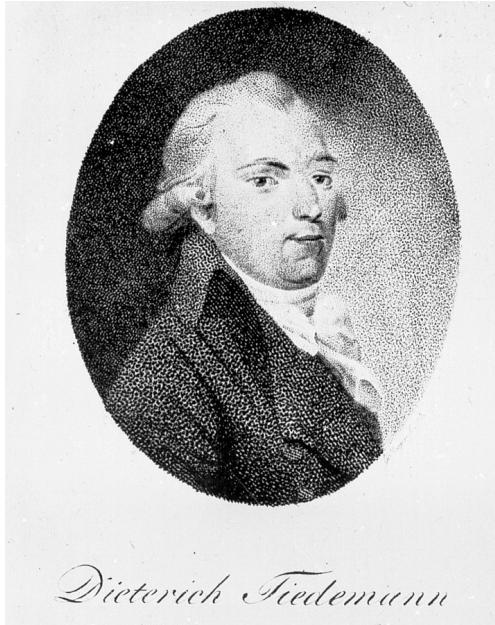
Campe's preface, 1785

wahrer psychologischer Beobachter diese Arbeit unternähme, der daraus entspringende Nutzen unbeschreiblich groß seyn würde. Das ist die Anlegung eines genauen Tagebuchs über alle bemerkte körperliche und geistige Veränderungen eines Kindes, welches von dem Augenblick seiner Geburt angefangen und ununterbrochen fortgeführt würde. Wie viel Aufschlüsse würde eine solche aufmerksame ununterbrochen fortgesetzte Beobachtung eines Kindes dem Psychologen und dem Erzieher geben! Aber für einen Menschen ist diese Arbeit fast zu groß; es würden zwei gleich scharfsichtige Beobachter erforderlich, die das Geschäft unter sichtheilten, so daß der eine jedesmal bei dem Kinde bliebe, indem der andere seine Beobachtungen niederschreibe. — Wo ist der bemits

“That is the

composition of a precise diary on all noticed bodily and mental changes of a child, which would start at the moment of birth and continued without interruption.”

DIETRICH TIEDEMANN (1748-1803)



*Beobachtungen über die Entwicklung
der Seelenfähigkeiten bei Kindern* (1787).

Diary of son Friedrich's first 30 months of life.

MORITZ ADOLPH VON WINTERFELD (1744-1819)

Tagebuch eines Vaters über sein neugebohrenes Kind (1788).

Diary of daughter Amalia Louise.

Journal eines Vaters über sein Kind von der Stunde seiner Geburt an; enthaltend: eine treue Darstellung der gesamten physischen und moralischen Behandlung des Kindes, sammt deren Folgen und Wirkungen; Bemerkung der ersten Neuerungen von Selbstthätigkeit, Aufmerksamkeit, Freude, Schmerz, Gebrauch des Körpers und seiner einzelnen Glieder, vornehmlich der Sinne;

allmähliche Bildung der Sprache der ganz eigenen, sehr simpeln Kindergrammatik; erste Reime der individuellen Neigungen und Leidenschaften.

allmähliche Bildung der Sprache der ganz eigenen, sehr simpeln Kindergrammatik

“the gradual formation of the quite peculiar language, the very simple children's grammar.”

BERTHOLD SIGISMUND (1819-1864)

Kind und Welt (1856).

Treatise on early child development, based on diary of his son.

Volitional function of first words:

“That the little speaker uses the first uttered words at once, mainly or maybe exclusively, as expressions of will.”

“The protolanguage is nothing but a will made audible.”

Least effort principle in phonological development:

Easy speech sounds (such as b, d, m) appear before hard ones (such as k, l, r).

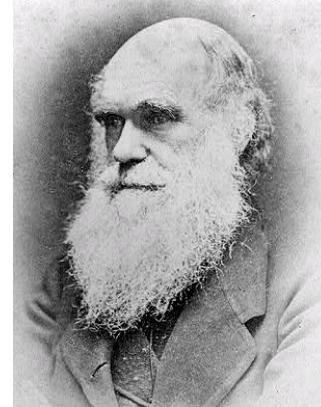
HIPPOLYTE TAINÉ (1828-1883), CHARLES DARWIN (1809-1882)



Hippolyte Taine

Acquisition of language by children

Mind (1877)



Charles Darwin

A biographical sketch of an infant

Taine (1877): *Speaking generally, the child presents in a passing state the mental characteristics that are found in a fixed state in primitive civilizations, very much as the human embryo presents in a passing state the physical characteristics that are found in a fixed state in the classes of inferior animals*

19th CENTURY DIARIES

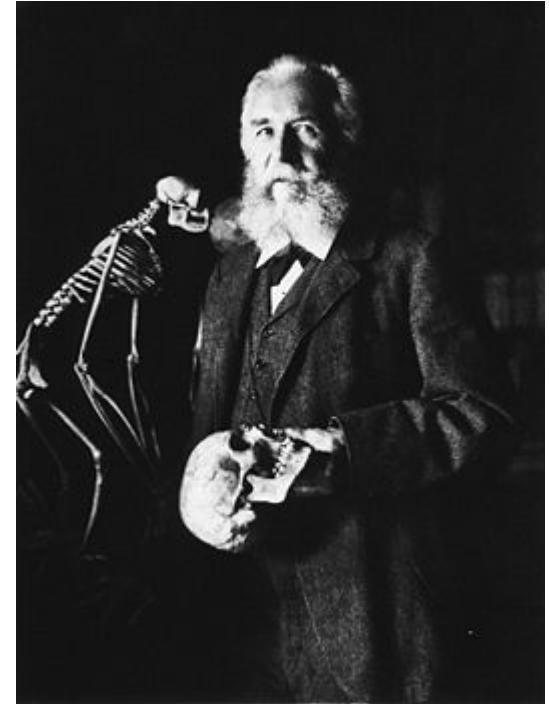
- | | |
|--|-----------------------------------|
| Goltz (1847), German | Sayce (1889), Arabic |
| Löbisch (1851), German | Chamberlain (1890), Algonkin |
| Eschericht (1852), German | Gabriel Deville (1890/91), French |
| Sigismund (1853), German | Garbini (1892), Italian |
| Baudouin de Courtenay (1869), Polish | Compayré (1893), French |
| Taine (1876, 1877), French | Balassa (1893), Hungarian |
| Darwin (1877), English | Frederic Tracy (1894), English |
| Perez (1878, 1886), French | Paola Lombroso (1894), Italian |
| Strümpell (1880), German | Preyer (1896), German |
| Sikorsky (1883), Russian | Kathleen Moore (1896), English |
| Blagovescenskij (1886), Russian | Milicent Washburn (1898), English |
| Machado y Alvarez (1885-1887), Spanish | Ament (1899), German |

HAECKEL'S PHYLOGENETIC LAW

... the mental development of every child is only a short recapitulation of that long phylogenetic process.

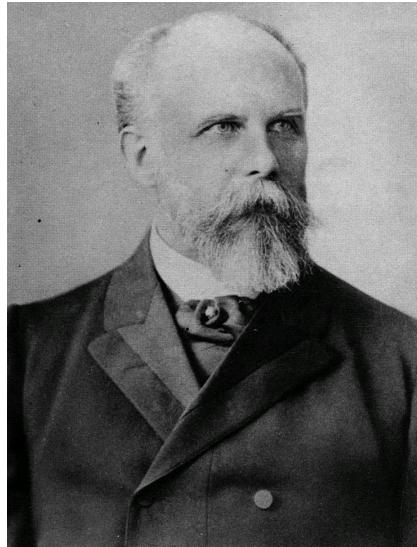
... die Seelen-Entwicklung jedes Kindes ist nur eine kurze Wiederholung jenes langen phylogenetischen Processes."

Haeckel (1874, p. 706).

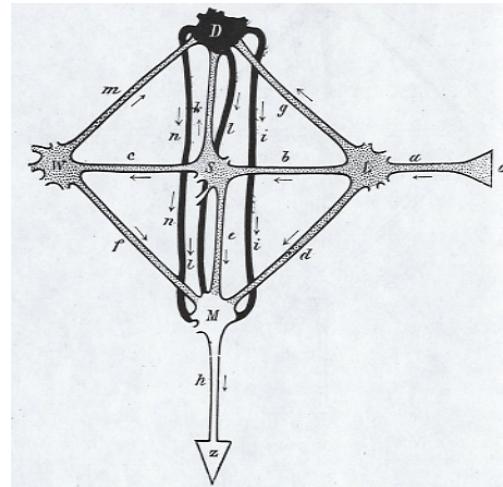


Ernst Haeckel (1834-1919)

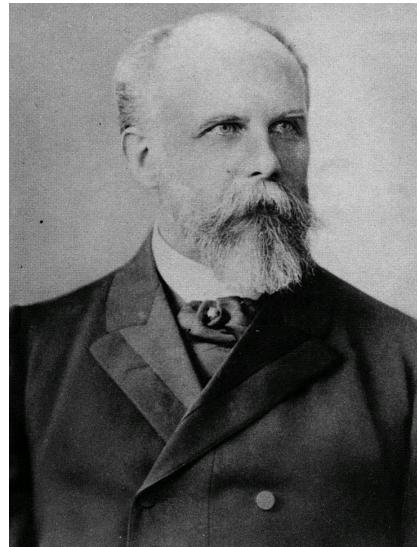
WILLIAM PREYER (1841-1897)



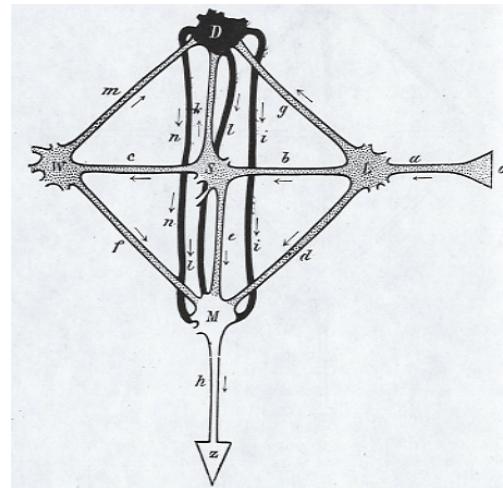
Die Seele des Kindes (1881)



WILLIAM PREYER (1841-1897)



Die Seele des Kindes (1881)



That every known form of adult speech disorder finds its complete reflexion in the child that learns to speak.

“Dass eine jede bekannte Form der Sprachstorung Erwachsener beim Kinde, welches sprechen lernt, ihr vollkommenes Gegenbild findet” (Preyer 1882 , p. 375).

ROOTS

Linguistic

Adult processing

Developmental

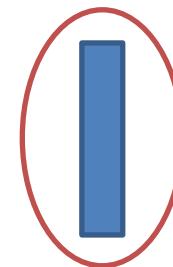
Brain

1780-1900



Wilhelm Wundt's unification, *Die Sprache* 1900

1900-World War II



Psycholinguistics during the Third Reich / Re-establishment of the discipline

20th CENTURY DIARIES BEFORE 1960

Clara & William Stern (1907), German
O'Shea (1907), English
Gheorgov (1908, 1910), Bulgarian
Ronjat (1913), French, German
Pavlovitsch (1920), Serbian
Bolin & Bolin (Swedish)
Rasmussen (1913, 1922), Danish
Jesperson (1916), Danish
Van Ginneken (1917), Dutch
Kenyeres (1926), Hungarian
David & Rosa Katz (1928), German
Ohwaki (1933), Japanese
Lewis (1936), English

Grégoire (1937, 1947), French
Wawroska (1938), Polish
Velten (1943), English
Frontali (1943, 1944), Italian
Gvozdev (1948, 1949), Russian
Skorupka (1949), Polish
Leopold (1939, 1949), English, German
Chao (1951), Cantonese
Cohen (1952), French
Kaczmarek (1953), Polish
Burling (1959), Garo
Bar-Adon (1959), Hebrew

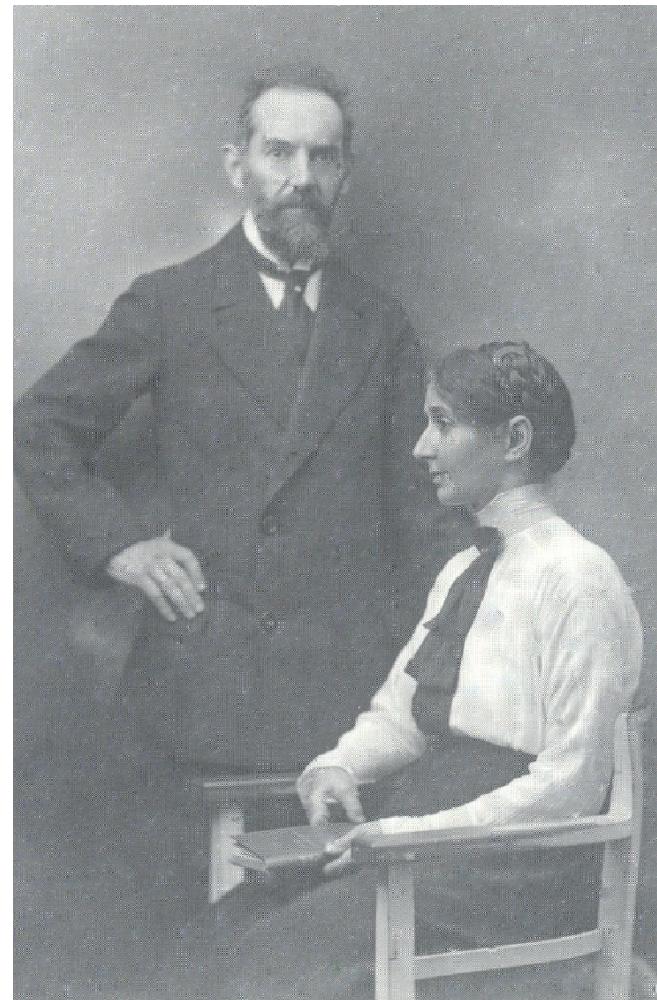
CLARA AND WILLIAM STERN, *Die Kindersprache* (1907)

Günther Herr
geb. 12.7.02. 10½ Uhr Vormittags,
vor 8½ Pfund, war vermutlich unbeschädigt
eine Woche übertragen. Seine körperliche
Beschaffenheit war für einen Säugling
ungewöhnlich ausgeprägt, so daß er
äußerlich nicht den Eindruck eines eben
Geborenen machte.

Am ersten Tage wurden keine Beobach-
tungen angestellt.

13.7.

Am zweiten Tage reagierte er bereits auf Schall. Es fiel auf, daß das Kind mehr-
mals mit Sprühen einsetzte, wenn in
seiner Nähe starke Geräusche stattfanden
(Zischen von Hölle, lautes Geheue, Stukk-
krashen). Es wurde nachgeprüft, durch klein-
deklaschen und hier wurden Reaktionen
unzweifelhaft festgestellt; sie bekun-
deten sich durch Lidzuckungen, die stets
unmittelbar auf den Schall folgten. Der
Kreislauf wurde zuerst in seiner Nähe am
Wickeltisch gemessen (etwa 3½ M. Entfernung);
die Wirkung der mechanischen Luftröhre.



20th CENTURY DIARIES BEFORE 1960

Clara & William Stern (1907), German
O'Shea (1907), English
Gheorgov (1908, 1910), Bulgarian
Ronjat (1913), French, German
Pavlovitsch (1920), Serbian
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Velten (1943), English
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Gvozdev (1948, 1949), Russian
Skorupka (1949), Polish
Leopold (1939, 1949), English, German
Chao (1951), Cantonese
Cohen (1952), French
Kaczmarek (1953), Polish
Burling (1959), Garo
Bar-Adon (1959), Hebrew

ROMAN JAKOBSON (1896–1982)



*Kindersprache, Aphasie und
allgemeine Lautgesetze* (1941)

THE INSTITUTES OF CHILD WELFARE

(The Laura Spelman Rockefeller Memorial Fund}

Iowa

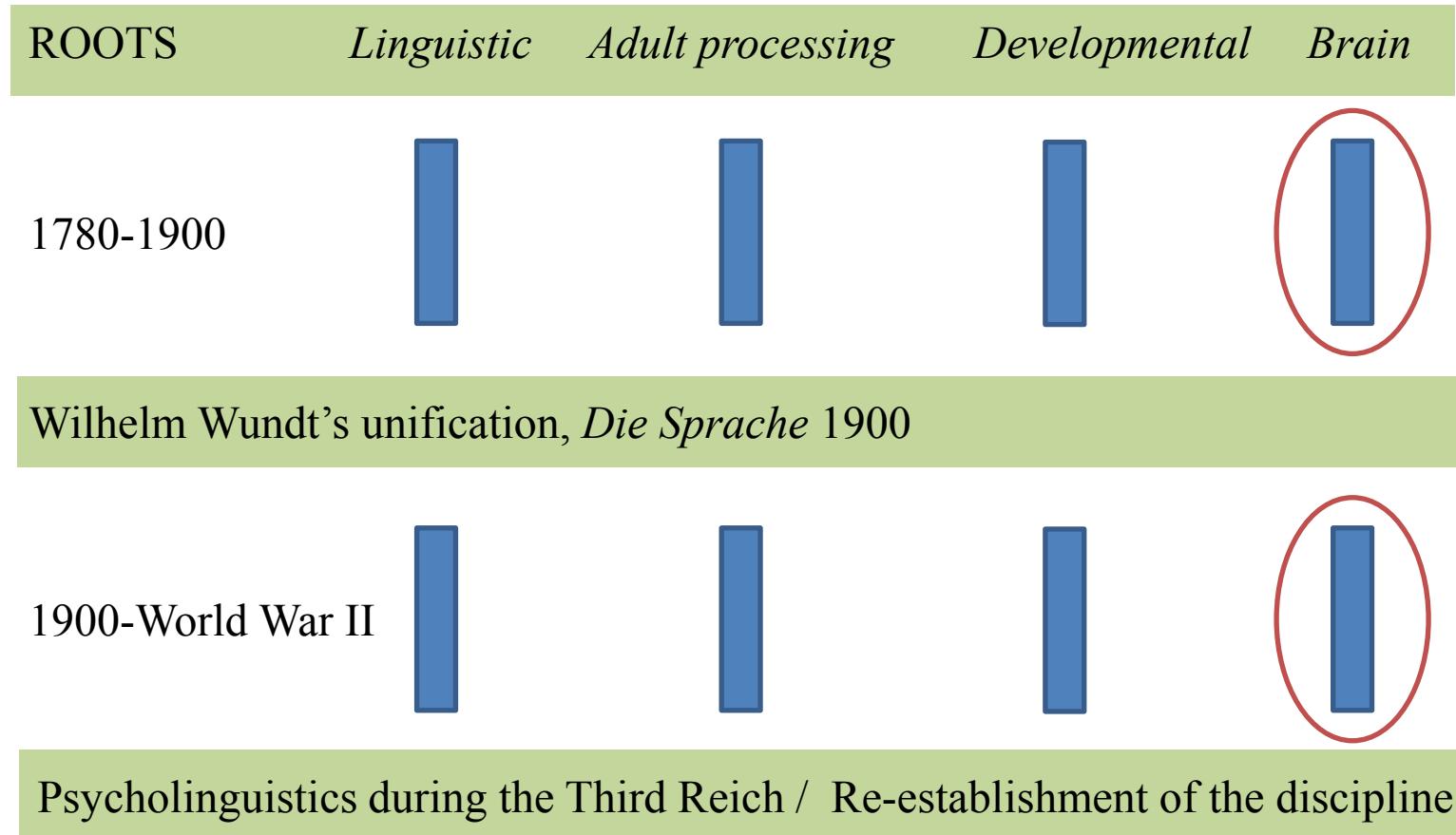
Madorah Smith (1887–1965) on vocabulary development
and bilingualism

B.L. Wellman and O.C. Irwin on development of articulation

Minnesota

Dorothea McCarthy (1906–1974) on vocabulary and
syntactic development

Mildred Templin (1913–2008) on vocabulary, syntactic and
sound development



ROOTS	<i>Linguistic</i>	<i>Adult processing</i>	<i>Developmental</i>	<i>Brain</i>
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1780-1900



Wilhelm Wundt's unification, *Die Sprache* 1900

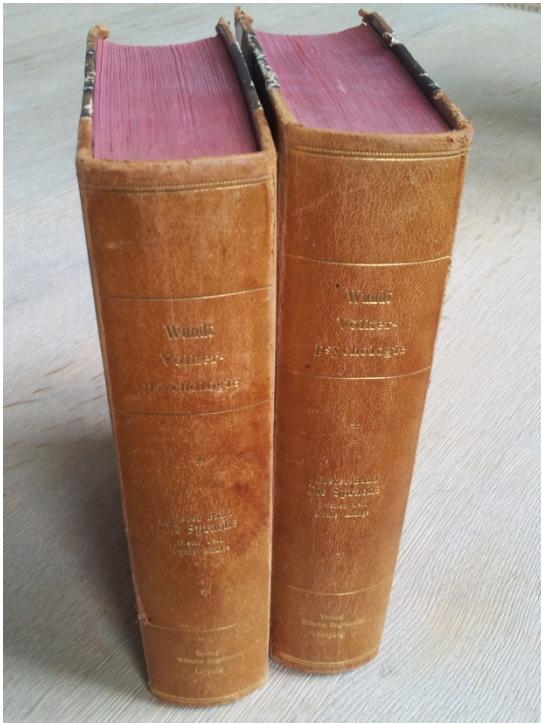
1900-World War II



Psycholinguistics during the Third Reich / Re-establishment of the discipline

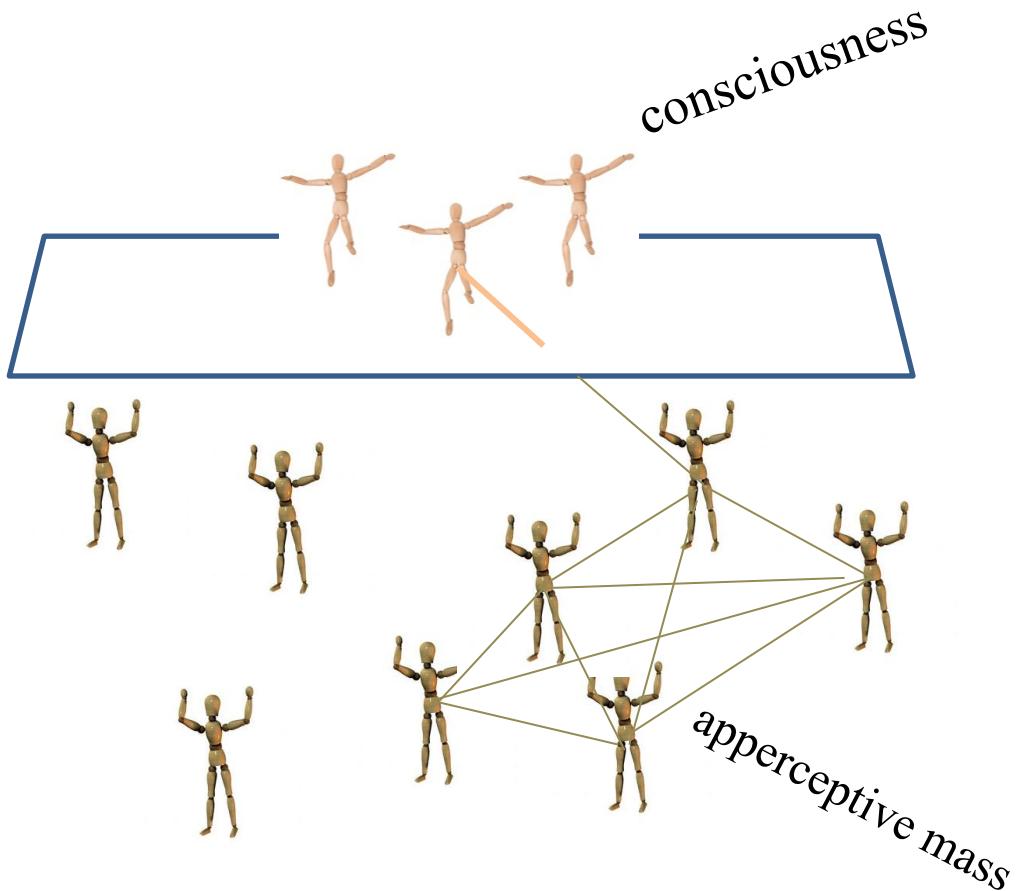
THE GRAND UNIFICATION: WILHELM WUNDT (1900)

Die Sprache, 2 Vols. (1900)



Wilhelm Wundt (1832-1920)

THE PSYCHOLOGY OF JOHANN FRIEDRICH HERBART



Johann Friedrich **HERBART**
Herbart (1776–1841)

WUNDT'S NOTIONS OF ATTENTION AND APPERCEPTION

“The state, characterized by a specific sensation, which accompanies the clearer focusing of some mental content, we call *attention* ; the specific process by which some mental content is brought into clear focus [we call] apperception.”

“Den durch eigentümliche Gefühle charakterisierten Zustand, der die klarere Auffassung eines psychischen Inhalts begleitet, nennen wir die Aufmerksamkeit; den einzelnen Vorgang, durch den irgendein psychischer Inhalt zu klarer Auffassung gebracht wird, die Apperzeption” (Wundt 1914 , p. 252).

APPERCEPTIVE FOCUSING IN SIGN LANGUAGE

S A O V A'
man furious child hit hard

APPERCEPTIVE FOCUSING IN SIGN LANGUAGE

S \widehat{A} O V $\widehat{A'}$
man furious child hit hard

APPERCEPTIVE FOCUSING IN SIGN LANGUAGE

S A O V A'
man furious child hit hard

APPERCEPTIVE FOCUSING IN SIGN LANGUAGE

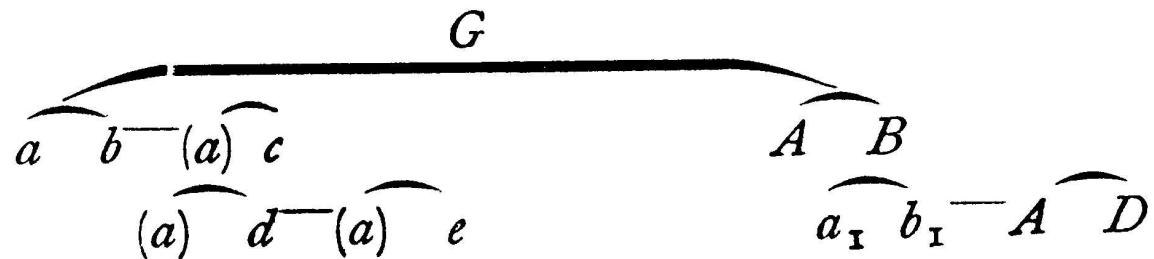
S \widehat{A} O V $\widehat{A'}$
man furious child hit hard

APPERCEPTIVE FOCUSING IN SIGN LANGUAGE

S A O V A'

man furious child hit hard

EXAMPLE OF A GERMAN SYNTACTIC STRUCTURE



Als er sich den Vorwurf sehr zu Herzen zu nehmen schien ($a \cap b$) und immer aufs neue beteuerte (c), daB er gewiB gern mitteile (d), gern für Freunde tätig sei (e), so empfand sie ($A \cap B$), daB sie sein zartes Gemüt verletzt habe ($a_1 \cap b_1$), und sie fühlte sich als seine Schuldnerin ($A \cap D$).

THE OUTER FORM OF A LANGUAGE SETTLES,
THE INNER FORM, ITS SEMANTICS, KEEPS DEVELOPING.

“A language can hold on to its outer form, even when its inner form has long gone beyond it.”

“Eine Sprache kann [. . .] ihre äußere Form festhalten, wenn die innere Sprachform längst darüber hinaus geschritten ist” (Die Sprache II, p. 412).

THE WORLD'S LANGUAGES REVEAL THE EVOLUTION OF MIND

“Here the psychologically most important data are there for the taking, leaving for psychology only the main task to subsume them under the sum total of psychological laws of development.”

“Hier sind vielfach die psychologisch wichtigsten Ergebnisse geradezu mit Händen zu greifen, für welche dann der Psychologie nur die Einordnung in die Gesamtheit der psychologischen Entwicklungsgesetze als die Hauptfrage übrig bleibt.” (Wundt 1920, p. 213).

ROOTS	<i>Linguistic</i>	<i>Adult processing</i>	<i>Developmental</i>	<i>Brain</i>
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1780-1900



Wilhelm Wundt's unification, *Die Sprache* 1900

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Psycholinguistics during the Third Reich / Re-establishment of the discipline

FIRST DIARY-BASED VOCABULARY STATISTICS. DORAN 1907

VOCABULARIES OF CHILDREN.

TABLE I.
Vocabularies of Children.

