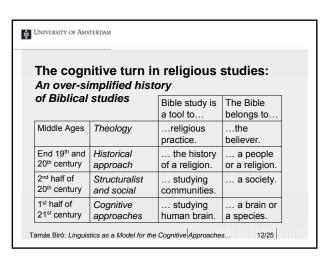


An over-si	nitive turn in Implified hist		s (2):
of linguistics		Linguistics is a tool to	Language belongs to
Middle Ages	"Philological" linguistics	analyze (holy) texts.	a text or author.
End 18 th and 19 th century	Historical linguistics	the history of a nation.	a nation or people.
1 st half of 20 th century	Structuralist linguistics	studying human signs.	a society.
2 nd half of 20 th century	Generative linguistics	studying human brain.	a brain or a species.



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The cognitive turn in linguistics (3)

- Language produced by the human brain in vivo:
 - Psycholinguistics, neurolinguistics.
- Language produced by the computer in silico:
 Computational linguistics, language technology.
- Language as such:
 - Theoretical linguistics: combine the best of pre-generative scholarly traditions with the best of cognitive science.

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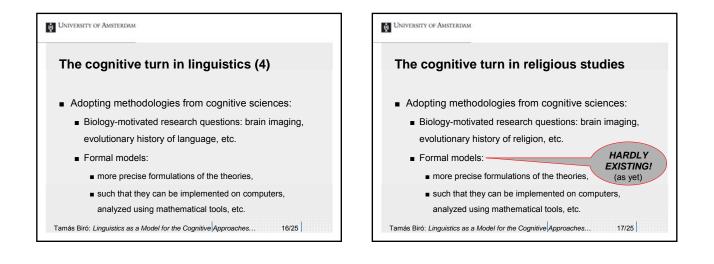
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Parallels in the Cognitive Science of Religion

- Religion produced by the human brain in vivo:
 - Psychology and neurology of religion, experimental CSR.
- Religion produced by the computer in silico:
- Comp models. "CSR technology" supports policy making.
- Religion as such:
 - Religious studies: combine the best of pre-cognitive scholarly traditions with the best of cognitive science.

14/25

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Formal models in linguistics: Chomsky

Structuralist concepts turned into formalism:

- <u>Phrases</u> \rightarrow phrase structure grammars, syntactic <u>trees</u>.
- (Binary) <u>distinctive features</u>:
 - Prague school (1930's), Roman Jakobson:
 - For instance: voiced vs. unvoiced, nasal vs. non-nasal.
 - Rules in generative phonology (Chomsky & Halle 1968):
 - Word-final devoicing: [+voice] → [-voiced] / __ #

• Nasal assimilation: [+nasal] \rightarrow [α place] / __ [α place]

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Formal models in linguistics: Chomsky

- German has word-final devoicing. English does not.
- What is different in the brain/mind of EN vs. DE speakers?
- Rules à la Chomsky & Halle (1968):
 - Phonology of German contains the rule

[+voice] \rightarrow [-voiced] / __#

19/25

Applied to /hauz/, and get [haus]. Not applied to /hauz+er/.

- Phonology of English does not contain this rule: [hauz].
- Model: different rules in different speakers' brain/mind.
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Formal models in linguistics: Smolensky

- German has word-final devoicing. English does not.
- What is different in the brain/mind of EN vs. DE speakers?
- Constraints à la Prince and Smolensky (1993/2004):
 - Input: /hauz/. Candidates: [haus] and [hauz].
 - Constraints: No_wordfinal_voiced; Faithful_to_input.
 - English H_{EN} : Faithful_to_input >> No_wordfinal_voiced \rightarrow [hauz]
 - German H_{DE} : No_wordfinal_voiced >> Faithful_to_input → [haus]
 - Model: different harmony in different speakers' brain/mind.

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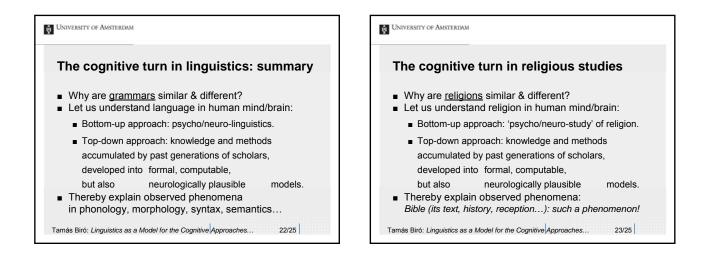
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Formal models in linguistics: Smolensky

Connectionist (neural network) underpinning of

- <u>Optimality Theory</u> (Prince and Smolensky 1993/2004):
 - Set of candidates: forms that occur in languages.
 - Each language L has specific harmony function H_L.
 - Language L chooses best candidate, with respect to H_L.
 - Neural networks can optimize such harmony functions.
 Hence, <u>plausible model of the mind/brain</u>.

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The cognitive turn in Biblical studies

- Refer to motifs and topics popular in CS or CSR when reading the Bible, or studying its reception.
- View its author/redactor/transmitter/copyist/translator/ /reader as a Homo sapiens with specific mental setup, as known from (or, at least, modeled by) CS and CSR.
- Use the Bible (its text, motifs, history, reception, etc.) as <u>source of data</u> falsifying/corroborating/improving theories in CS and CSR.

24/25

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