Post-cognitivist rules:

What experiment can disprove your hypothesis?
What hypothesis does your experiment disprove?

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Models of Thought:
Post-Cognitivist Methodologies

Munich, 20-21 February 2008

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Rule Learning by Seven-Month-Old Infants

G. F. Marcus,* S. Vijayan, S. Bandi Rao, P. M. Vishton

A fundamental task of language acquisition is to extract abstract algebraic rules. Three experiments show that 7-month-old infants attend longer to sentences with unfamiliar structures than to sentences with familiar structures. The design of the artificial language task used in these experiments ensured that this discrimination could not be performed by counting, by a system that is sensitive only to transitional probabilities, or by a popular class of simple neural network models. Instead, these results suggest that infants can represent, extract, and generalize abstract algebraic rules.

18 OCTOBER 2002 VOL 298 SCIENCE www.sciencemag.org

Signal-Driven Computations in Speech Processing

Marcela Peña,[1] Luca L. Bonatti,[1,2] Marina Nespor,[3] Jacques Mehler[1,4]*

Learning a language requires both statistical computations to identify words in speech and algebraic-like computations to discover higher level (grammatical) structure. Here we show that these computations can be influenced by subtle cues in the speech signal. After a short familiarization to a continuous speech stream, adult listeners are able to segment it using powerful statistics, but they fail to extract the structural regularities included in the stream even when the familiarization is greatly extended. With the introduction of subliminal segmentation cues, however, these regularities can be rapidly captured.

16 October 1964, Volume 146, Number 3642 SCIENCE

Strong Inference

Certain systematic methods of scientific thinking may produce much more rapid progress than others.

John R. Platt

ABA gatiga ganaga

ABB gatiti ganana

wofewo wofefe

(avoid photenic overlaps)

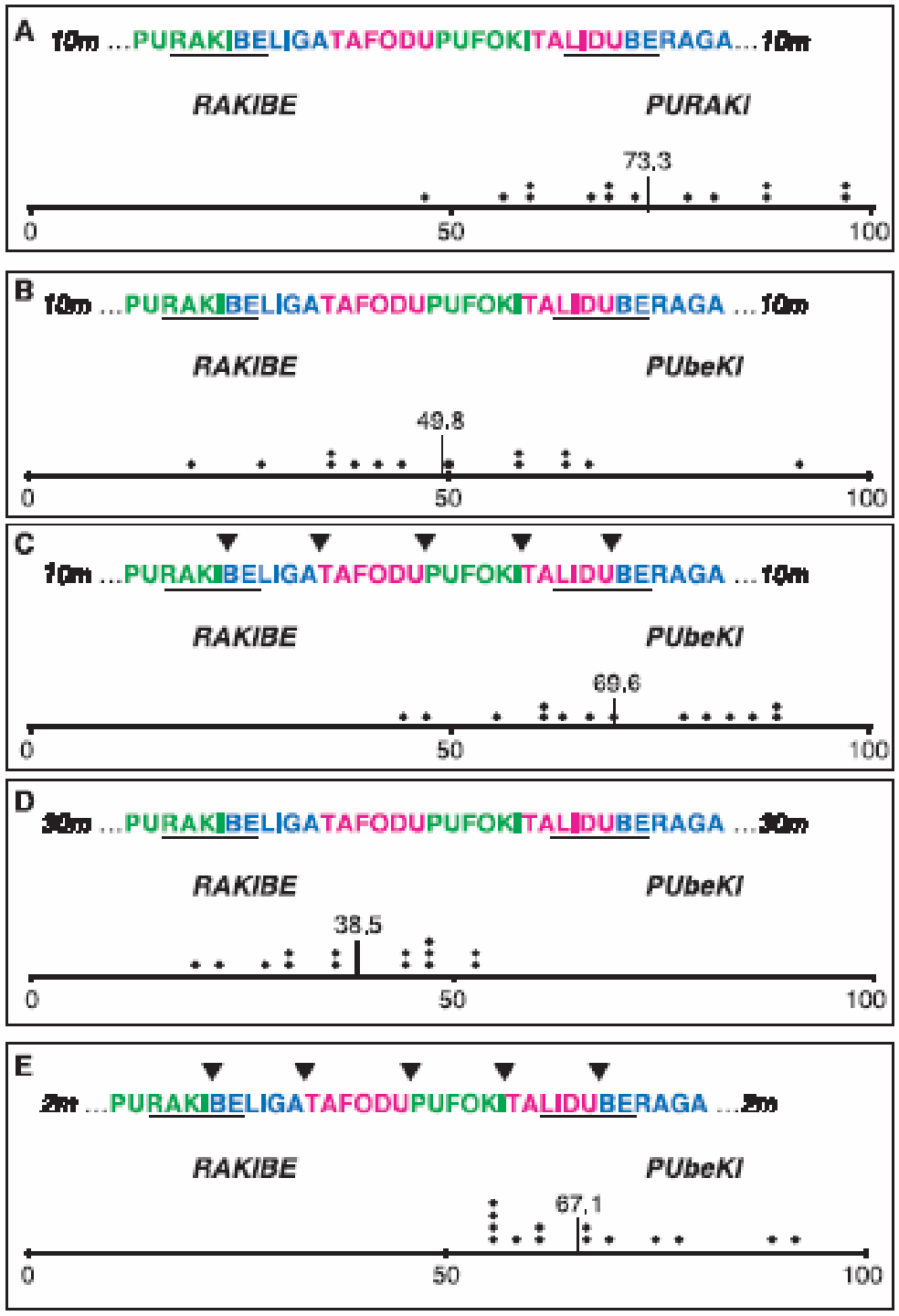
ABA ledile lejele

ABB ledidi lejeje

bapopo kogaga

A***BB***

AAB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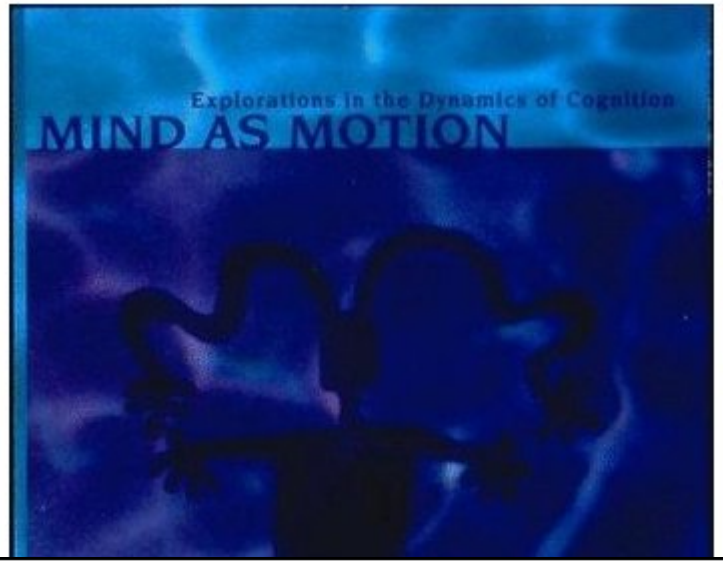
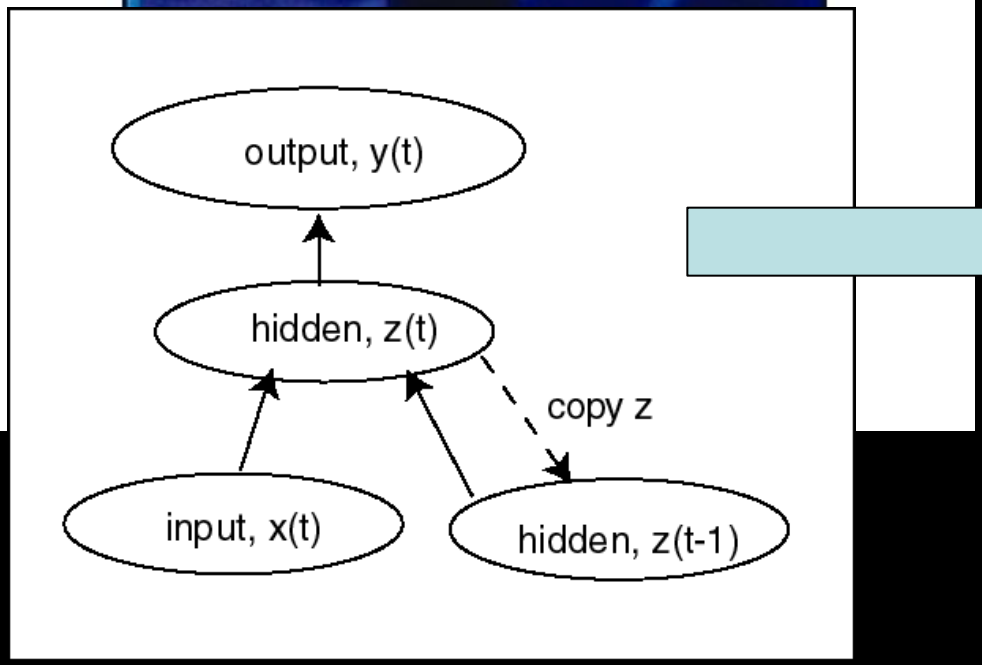

Explorations in the Dynamics of Cognition
MIND AS MOTION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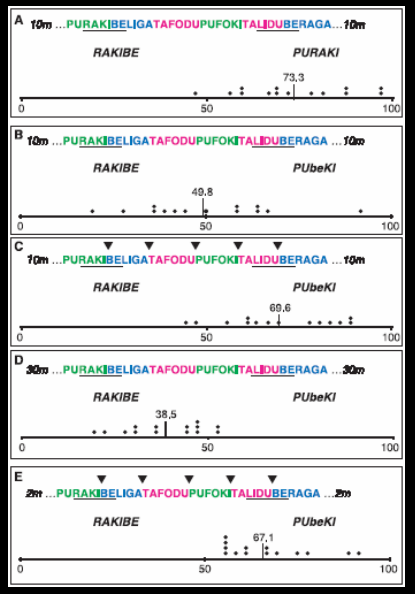
input, x(t)
hidden, z(t-1)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HOMEWORK

- ***What experiment can disprove your hypothesis?***
- ***What hypothesis does your experiment disprove?***