Computational approaches to mind and brain: How language is profoundly shaped by its neural substrate
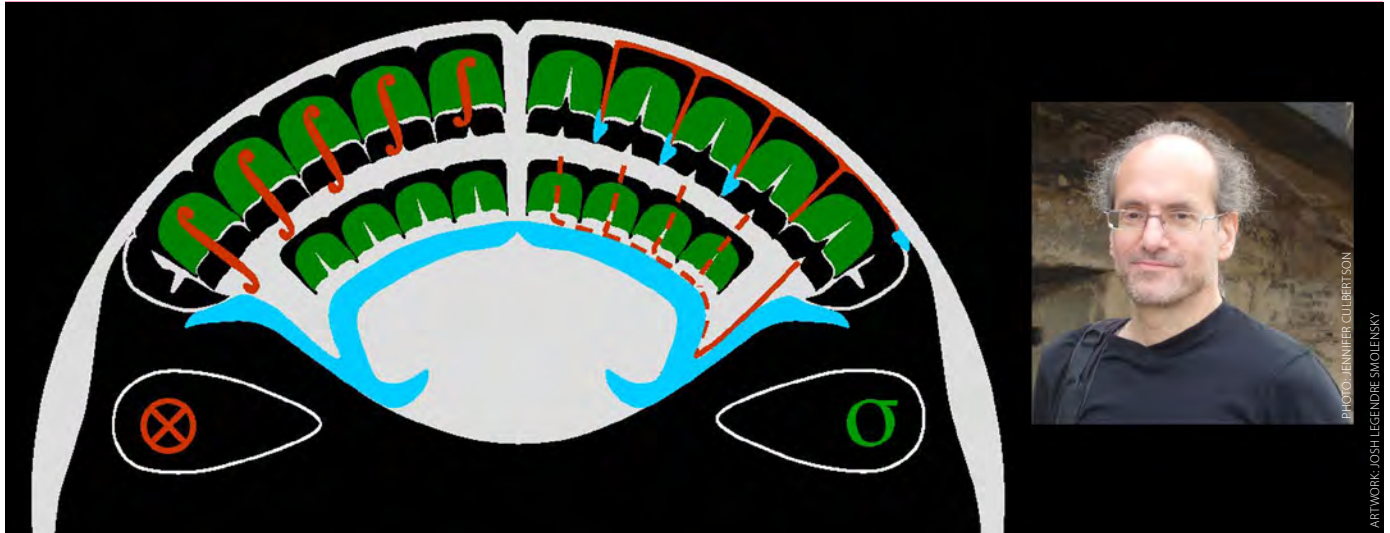
FACULTY OF HUMAN SCIENCES PUBLIC LECTURE

MACQUARIE UNIVERSITY
FACULTY OF HUMAN SCIENCES

ARTWORK: JOSH LEGENDRE SMOLENSKY

PHOTO: JENNIFER CULBERTSON

A unique product of the human brain is language. The expressiveness of human language derives from the computational power of its grammar. The research to be presented derives from the radical premise that grammatical computation deeply reflects neural computation. This hypothesis has led to a 'Kuhnian' scientific revolution in linguistics, providing mathematically precise predictions about the neural encoding of grammar. Although developed in the context of language, this new theory is applicable to the many cognitive faculties in which information consists of diverse combinations of (approximately) discrete constituents.

Event Details

When	6-8pm, Tuesday, 9 December 2014
Where	Australian Hearing Hub, Lecture Theatre, Level 1, 16 University Drive Macquarie University
Parking	Free parking from 5.30pm
Transport	mq.edu.au/on_campus/getting_to_macquarie/
Registration	Please register before 1 December ling.mq.edu.au/paul-smolensky
Enquiries	Ms Rosemary Eliott E: rosemary.eliott@mq.edu.au

This public lecture coincides with a CLaS sponsored Workshop on The Role of Prosody in Language Learning: Stress, Tone and Intonation where Professor Smolensky will also participate.

For more information see mq.edu.au/wapsti

Paul Smolensky has an endowed Professorship at Johns Hopkins University, where he was Chair of Cognitive Science for several years. His research explores the relation between the brain and language, the theory of grammar, and the mind/brain problem in philosophy. Professor Smolensky revolutionized the field of linguistics in the early 1990's when he co-developed Optimality Theory, a model of grammar derived from the theory of information processing in the brain. The success of Optimality Theory demonstrates how even highly abstract aspects of the mind like universal grammar can be better understood by incorporating general principles of neuroscience.

His creativity and vision have been recognized by the following awards:

- David E. Rumelhart Prize for Outstanding Contributions to the Formal Analysis of Human Cognition
- Chaire Internationale de Recherche Blaise Pascal (France)
- Sapir Professorship for Distinguished Scholar, Linguistic Society of America Summer Linguistic Institute
- Krieger-Eisenhower Chair of Cognitive Science, Johns Hopkins University
- Fellow, Cognitive Science Society
- Guggenheim Foundation Fellowship