

Shima Seyed-Allaei

Cognitive Science School, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran.

PERSONAL

RESEARCH

Researcher

2012-present

School of Cognitive Science, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran.

PhD in Cognitive Neuroscience

2007-2012

SISSA, Trieste, Italy. Under supervision of Prof. Tim Shallice and Prof. Daniele Amati.

Thesis title: "Investigation of Latching Processes in the Human Brain".

Abstract:

It has been argued by Amati and Shallice, (2007) that cognitive capacities which are exclusive to modern humans may stem from a new type of brain operation -called latching- that can give rise to a strategy change, in tackling an abstract project, without the necessary intervention of external stimuli. In this project we present the behavioral analysis of a test on adult subjects that shows a clear identification of an internally driven strategy change. It was initially intended to develop this behavioral identification of underlying "latching" processes to allow one then to use functional imaging to investigate the brain mechanisms involved in latching. However, the one-shot nature of strategy change makes the imaging analysis very challenging. To move toward this eventual goal a simpler type of situation which is not held to involve latching but can be repeated – the Brixton task - is investigated by functional imaging. The idea is that its behavioural similarities with tasks held to involve "latching" make it a suitable platform to test analysis methods to be applied later for studying "latching". In addition the imaging study of this task together with an additional task – Tower of Hanoi - allow us to understand the brain mechanisms of hypothesis generation and planning that are also essential components of problem solving situations in which latching occurs.

MSc in Computer Science

2005-2007

University of Tehran, Tehran, Iran. "Modeling Retrieval in Analogical Reasoning" under supervision of Dr. Ahmad Shafiei-Deh-Abad and Dr. Laleh Ghadakpour.

BSc in Computer Science

2000-2005

University of Tehran, Tehran, Iran.

RESEARCH INTERESTS

Theoretical modeling and empirical studies of high level cognition

PUBLICATIONS

- Crescentini, C., Seyed-Allaei, S., Vallesi, A., Shallice, T. (2012) Two networks involved in producing and realizing plans. *Neuropsychologia*, 50(7), 1521-1535.
- Crescentini, C., Seyed-Allaei, S., De Pisapia, N., Jovicich, J., Amati, D., Shallice, T. (2011) Mechanism of Rule Acquisition and Rule Following in Inductive Reasoning. *Journal of Neuroscience*, 31(21), 7763-7774.
- Seyed-Allaei, S., Amati, D. & Shallice, T. (2010) Internally Driven Strategy Change. *Thinking and Reasoning*, 16, 308 – 331.

SCIENTIFIC CONTRIBUTIONS TO CONFERENCES

- Crescentini, C., Seyed-allaei, S., & Shallice, T. Planning and spatial working memory rely on common neural networks but at very different stages of the task. XXVIII European Workshop on Cognitive Neuropsychology. January 23th-28th, 2011, Brixen, Italy. (Talk by C. C.)
- Crescentini, C., Seyed-Allaei, S., De Pisapia, N., Jovicich, J., Amati, D., & Shallice, T. fMRI Investigations of Rule Acquisition in Inductive Reasoning. 16th Annual Meeting of the Organization for Human Brain Mapping (OHBM), June 6th – 10th, 2010, Barcelona, Spain. (Poster)

TALKS/SEMINARS

- Word order preference, Feb 17th, 2012, IPM, Iran.
- Meta-learning, December 16th, 2012, Dept. Computer Science, Shahid Beheshti University, Tehran, Iran.
- Towards a unified cognitive account of thinking, June 17th, 2012, IPM, Iran.
- Investigation of Latching processes in the human brain, March 13th, 2012, Magdeburg University, Germany.

EXPERIENCES

- Teaching Assistant, "Principles of Bioinformatics", 2006, Institute for Biochemistry and Biophysics (IBB), University of Tehran, Tehran, Iran.
- Research Assistant for "National Operating System", 2005, ISIRAN, Tehran, Iran.
- Software Developer, "Optical Character Recognition", 2003, Under Supervision of Dr. Abbas Nowzari-Dalini, University of Tehran, Tehran, Iran.

HONORS

- Among top 2% in the nation-wide computer science graduate school entrance examination, 2004.
- Selected for the first round of the 8th National Olympiad in Informatics, 1998.
- Selected for the first round of the 11th National Olympiad in Physics, 1998.

COMPUTER SKILLS

Programming: C/C++, Matlab, Python, Microsoft Visual Studio .NET, Pascal, Java, Rails, HTML, Javascript, MPI.

OS: Linux, Mac OS X, Windows.

Software: SPM, Marsbar, Princeton-MVPA-toolbox, pyMVPA for fMRI analysis.

LANGUAGE SKILLS

Persian (Native), English (Advanced), Italian (Intermediate), Arabic (Elementary)

REFERENCES

- Prof. Tim Shallice
International School for Advanced Studies (SISSA/ISAS), Trieste, Italy
Institute of Cognitive Neuroscience, UCL, London, UK
- Prof. Daniele Amati
International School for Advanced Studies (SISSA/ISAS), Trieste, Italy

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PUBLICATIONS

- Marno, H., Langus, A., Göksel, A., Seyed-Allaei, S., Uysal, E., Nespors, M., (submitted) Word Order Preference with a new Lexicon.
- Crescentini, C., Seyed-Allaei, S., Vallesi, A., Shallice, T. (2012) Two networks involved in producing and realizing plans. *Neuropsychologia*, 50(7), 1521-1535.
- Crescentini, C., Seyed-Allaei, S., De Pisapia, N., Jovicich, J., Amati, D., Shallice, T. (2011) Mechanism of Rule Acquisition and Rule Following in Inductive Reasoning. *Journal of Neuroscience*, 31(21), 7763-7774.
- Seyed-Allaei, S., Amati, D. & Shallice, T. (2010) Internally Driven Strategy Change. *Thinking and Reasoning*, 16, 308 – 331.