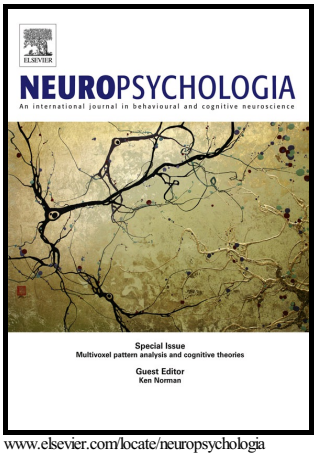
Neural evidence for defective top-down control of visual processing in Parkinson´s and Alzheimer´s disease

Nemcova Elfmarkova Nela, Gajdos Martin, Rektorova Irena, Marecek Radek, Steven Z. Rapcsak



www.elsevier.com/locate/neuropsychologia

PII: S0028-3932(17)30366-4
DOI: https://doi.org/10.1016/j.neuropsychologia.2017.09.034
Reference: NSY6516

To appear in: *Neuropsychologia*

Received date: 29 January 2017
Revised date: 11 August 2017
Accepted date: 27 September 2017

Cite this article as: Nemcova Elfmarkova Nela, Gajdos Martin, Rektorova Irena, Marecek Radek and Steven Z. Rapcsak, Neural evidence for defective top-down control of visual processing in Parkinson´s and Alzheimer´s disease, *Neuropsychologia,* https://doi.org/10.1016/j.neuropsychologia.2017.09.034

Neural evidence for defective top-down control of visual processing in Parkinson´s and Alzheimer´s disease

Nemcova Elfmarkova Nela[a, b], Gajdos Martin[a], Rektorova Irena[a,b*], Marecek Radek[a,b], Rapcsak Steven Z[c]

[a] Brain and Mind Research Programme, Central European Institute of Technology, CEITEC MU, Masaryk University, Brno, Czech Republic

[b] First Department of Neurology, School of Medicine, Masaryk University and St. Anne's Hospital, Brno, Czech Republic

[c] Department of Neurology, University of Arizona, Tucson, AZ, USA.

[*]**Correspondence to**: Professor Irena Rektorova, MD, PhD. First Department of Neurology, Faculty of Medicine, Applied Neuroscience Research Group, CEITEC, Masaryk University, Kamenice 5, 625 00 Brno. Tel.: +420 54318 2623. irena.rektorova@fnusa.cz

Abstract

Introduction

We used a functional MRI paradigm involving conventional vs. unconventional views of objects to assess bottom-up vs. top-down visual processing in Parkinson's disease (PD) with normal cognition, PD with mild cognitive impairment (MCI), and MCI due to Alzheimer's disease (AD) as compared to healthy controls. We particularly aimed at determining whether the task discriminated between PD with and without MCI and between two MCI groups due to distinct pathologies (AD and PD).