



## SOCIAL COGNITION DECLINE IN MULTIPLE SCLEROSIS EVIDENCES FROM INTENTION RECOGNITION

**Andrea Tacchino**  
*Italian Multiple Sclerosis Foundation*

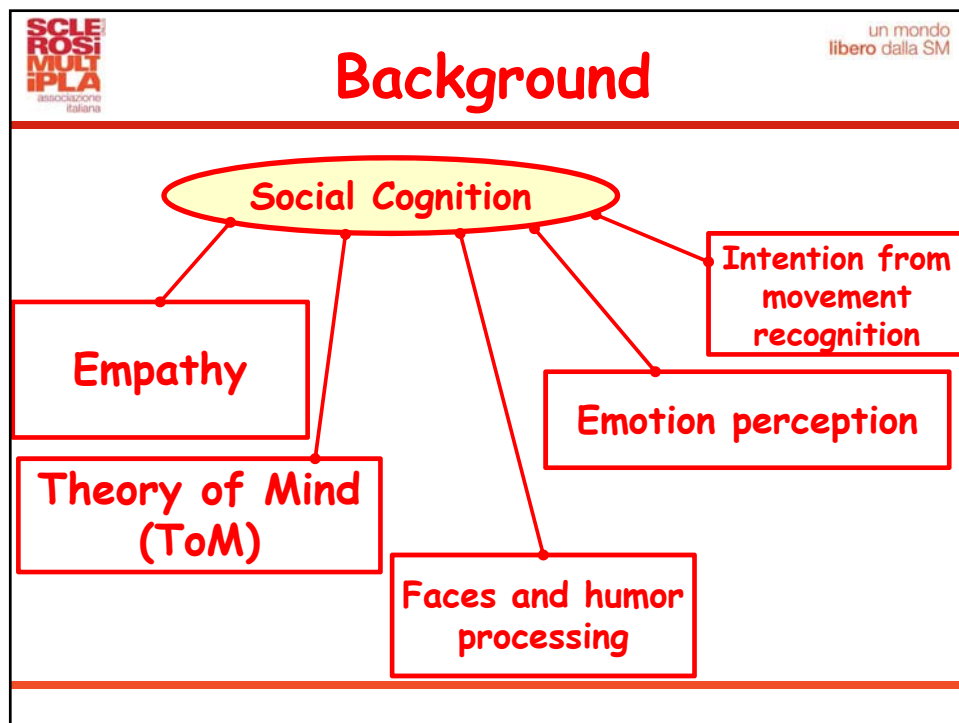


THE CONSORTIUM OF  
MULTIPLE SCLEROSIS CENTERS

**May 28-31, Dallas**



AMERICAS COMMITTEE FOR TREATMENT  
AND RESEARCH IN MULTIPLE SCLEROSIS



**SCLE ROSI MULT IPLA** associazione italiana un mondo libero dalla SM

# In Multiple Sclerosis...

**Clinical Neurology and Neurosurgery**

Contents lists available at ScienceDirect

Theory of mind and empathy in patients at an early stage of relapsing remitting multiple sclerosis

Markus Kraemer<sup>a,b,\*</sup>, Michèle Herold<sup>a,b</sup>, Jennifer Uekermann<sup>a,b,c</sup>, Bernhard Kis<sup>b</sup>, Jens Wiltfang<sup>a</sup>, Irene Daum<sup>c</sup>, Isabel Dziobek<sup>d</sup>, Peter Berlit<sup>a</sup>, Rolf R. Diehl<sup>a</sup>, Mona Abdel-Hamid<sup>b</sup>

European Journal of Neurology 2010; 17: 426-433

**Intention from movement recognition**

?

Clin Neurology and Neurosurgery, 2010 Jul;112(6):482-4.

**An exploratory study on emotion recognition in patients with a clinically isolated syndrome and multiple sclerosis.**

Jehna M<sup>1</sup>, Neuper C, Petrovic K, Wallner-Blazek M, Schmidt R, Fuchs S, Fazekas F, Enzinger C

European Journal of Neurology 2010; 17: 426-433

**Social cognition and Theory of Mind in patients with relapsing-remitting multiple sclerosis**

A. Banati<sup>a</sup>, J. Sandoz<sup>b</sup>, A. Mike<sup>a</sup>, E. Illes<sup>a</sup>, L. Bors<sup>a</sup>, A. Feldmann<sup>a</sup>, R. Herold<sup>a,\*</sup> and Z. Illes<sup>a,\*</sup>

<sup>a</sup>Department of Neurology, University of Pecs, Pecs; <sup>b</sup>Department of Public Health, Faculty of Health Sciences, Institute of Applied Health Sciences, University of Pecs, Pecs; and <sup>c</sup>Department of Psychiatry and Psychotherapy, University of Pecs, Pecs, Hungary

Brain Imaging and Behavior (2011) 5:241-251

**Cognitively preserved MS patients demonstrate functional differences in processing neutral and emotional faces**

Margit Jehna • Christian Langkammer • Mirja Wallner-Blazek • Christa Neuper • Marika Löffelholz • Stefan Ropele • Siegrid Fuchs • Michael Khalil • Aga Pluta-Fuerst • Franz Fazekas • Christian Enzinger

**SCLE ROSI MULT IPLA** associazione italiana un mondo libero dalla SM

# Background

Clinical Neurology and Neurosurgery 115 (2013) 1016-1022

**Clinical Neurology and Neurosurgery**

Contents lists available at ScienceDirect

Journal homepage: www.elsevier.com/locate/clineneuro

Theory of mind and empathy in patients at an early stage of relapsing remitting multiple sclerosis

Markus Kraemer<sup>a,b,\*</sup>, Michèle Herold<sup>a,b</sup>, Jennifer Uekermann<sup>a,b,c</sup>, Bernhard Kis<sup>b</sup>, Jens Wiltfang<sup>a</sup>, Irene Daum<sup>c</sup>, Isabel Dziobek<sup>d</sup>, Peter Berlit<sup>a</sup>, Rolf R. Diehl<sup>a</sup>, Mona Abdel-Hamid<sup>b</sup>

European Journal of Neurology 2010; 17: 426-433

**Social cognition and Theory of Mind in patients with relapsing-remitting multiple sclerosis**

M. Banati<sup>a</sup>, J. Sandoz<sup>b</sup>, A. Mike<sup>a</sup>, E. Illes<sup>a</sup>, L. Bors<sup>a</sup>, A. Feldmann<sup>a</sup>, R. Herold<sup>a,\*</sup> and Z. Illes<sup>a,\*</sup>

<sup>a</sup>Department of Neurology, University of Pecs, Pecs; <sup>b</sup>Department of Public Health, Faculty of Health Sciences, Institute of Applied Health Sciences, University of Pecs, Pecs; and <sup>c</sup>Department of Psychiatry and Psychotherapy, University of Pecs, Pecs, Hungary

Brain Imaging and Behavior (2011) 5:241-251

**Cognitively preserved MS patients demonstrate functional differences in processing neutral and emotional faces**

Margit Jehna • Christian Langkammer • Mirja Wallner-Blazek • Christa Neuper • Marika Löffelholz • Stefan Ropele • Siegrid Fuchs • Michael Khalil • Aga Pluta-Fuerst • Franz Fazekas • Christian Enzinger

Clin Neurology and Neurosurgery, 2010 Jul;112(6):482-4.

**An exploratory study on emotion recognition in patients with a clinically isolated syndrome and multiple sclerosis.**

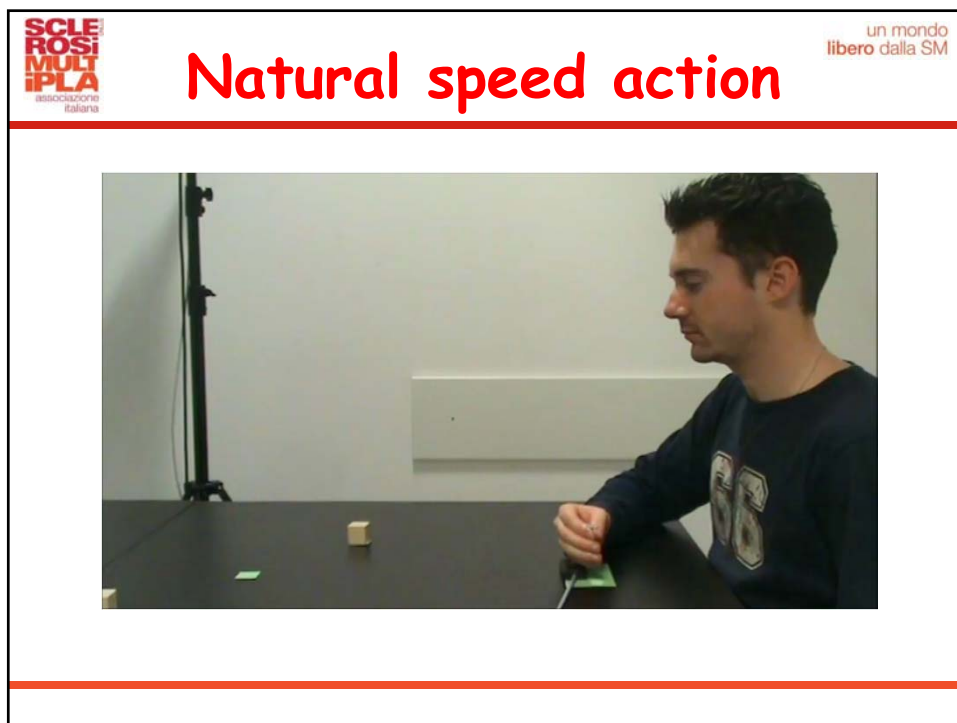
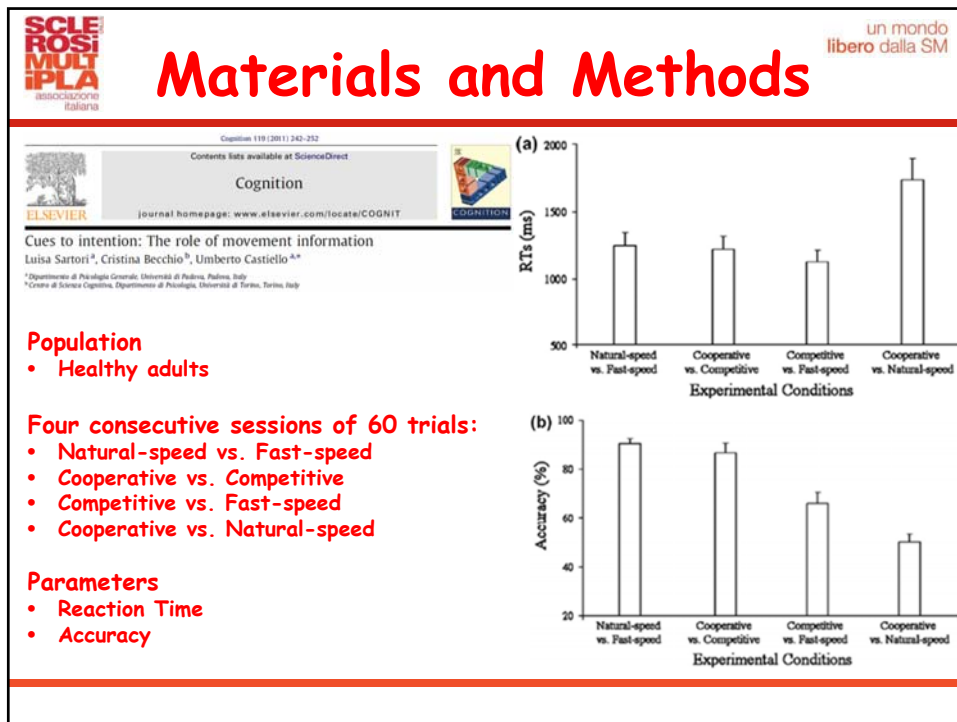
Jehna M<sup>1</sup>, Neuper C, Petrovic K, Wallner-Blazek M, Schmidt R, Fuchs S, Fazekas F, Enzinger C

*Non-verbal ToM tasks*  
*Baron-Cohen's Adult Faces task*  
*Baron-Cohen's Adult Eyes test*  
*Verbal tasks*  
*Faux pas tasks*

**More impaired patients showed more deficits in social cognition**

**Patients with a longer disease course showed more deficits in social cognition**

**Social cognition is more impaired with more severe progressions**



## Fast speed action



## Competitive action




**SCLE  
ROSI  
MULT  
IPLA**  
associazione  
italiana

**Cooperative action**

un mondo  
libero dalla SM

---



A woman with curly hair and glasses, wearing a yellow tank top, is seated at a dark table. She is looking down at a small yellow block on the table. A green sticky note is also visible on the table. The background is a plain white wall with a black stand on the left.

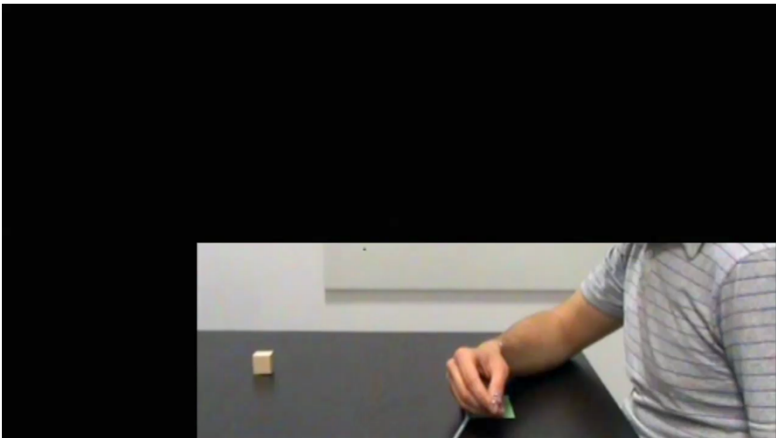
---

**SCLE  
ROSI  
MULT  
IPLA**  
associazione  
italiana

**Occluded action**

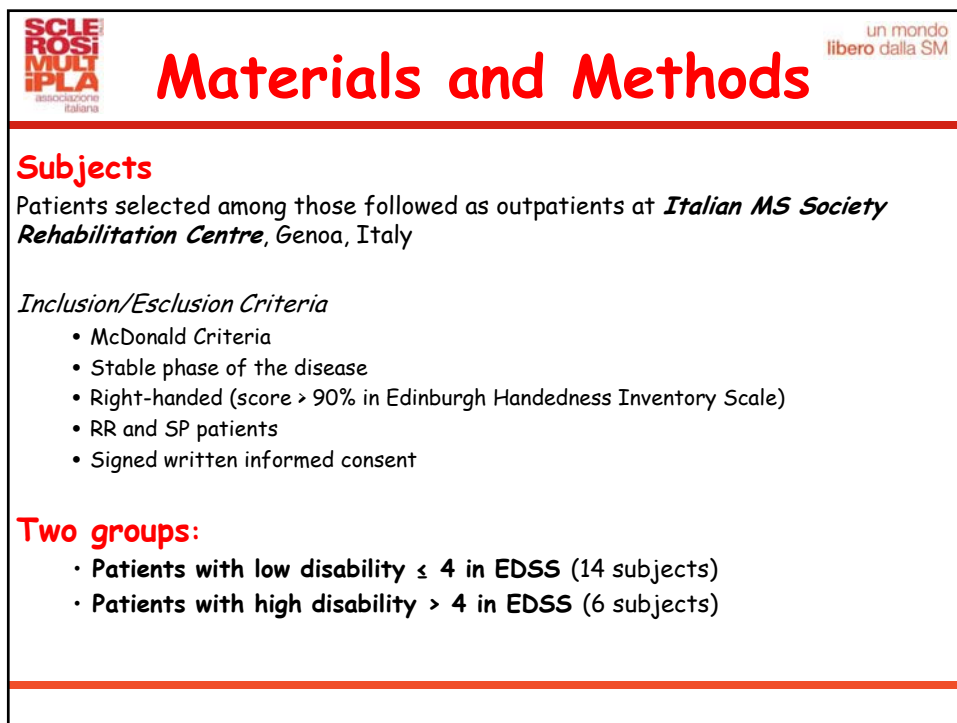
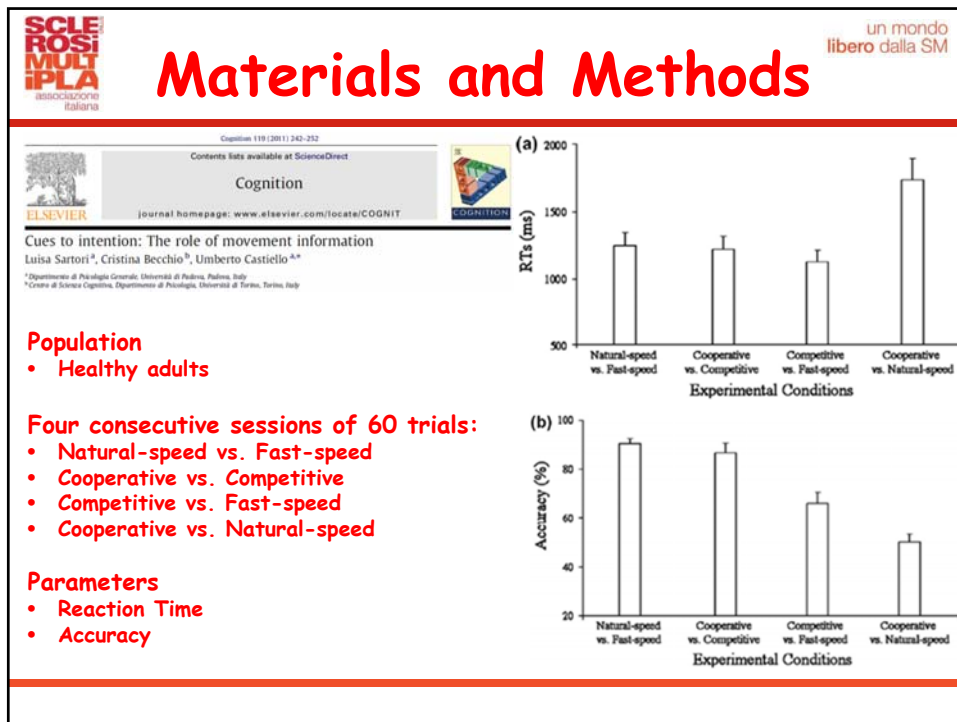
un mondo  
libero dalla SM

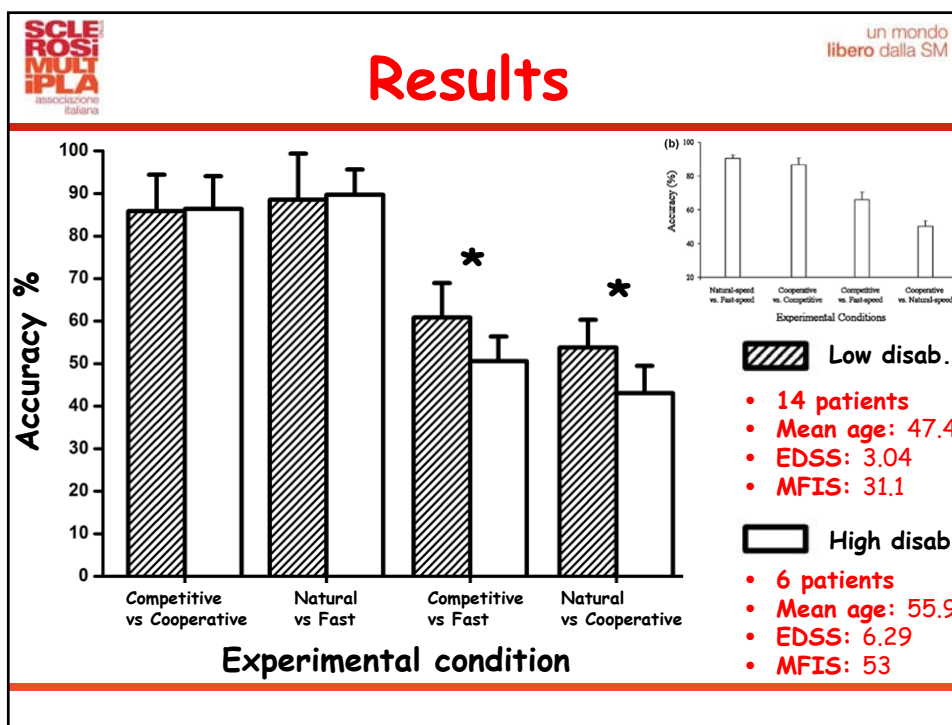
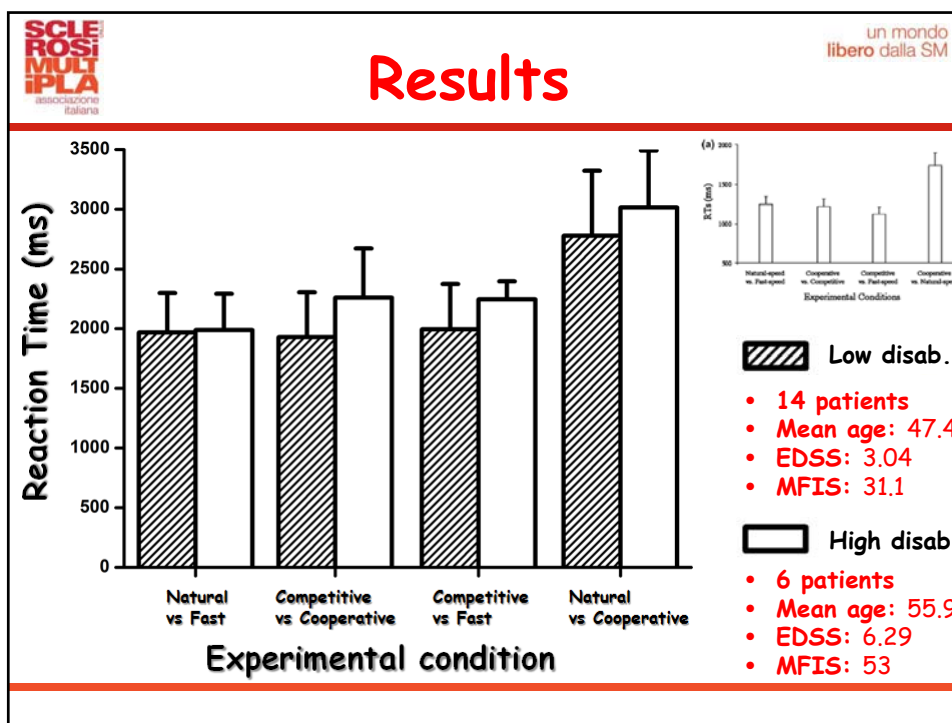
---



A person wearing a striped shirt is seated at a dark table. They are looking down at a small yellow block on the table. A green sticky note is also visible on the table. The background is a plain white wall with a black stand on the left. The top half of the image is obscured by a black rectangle.

---





## Conclusions

Results suggest that **intention-from-movement recognition** is progressively deficient in patients with MS, contributing to explain the MS deterioration in interpersonal relationship over time.

This study tend to complete knowledge about social cognition in MS and to provide basis to find new strategies in improving social involvement and quality of life in people living with MS.

However...we need to increase the subjects number in order to make more robust the conclusions

**Giampaolo Brichetto, MD, PhD (FISM)**

**Ludovico Pedullà, Dr (FISM)**

**Andrea Cavallo, PhD (Univ. Of Turin)**

**Caterina Ansuini, PhD (Univ. of Turin)**

**Luisa Sartori, PhD (Univ. of Padua)**

**Umberto Castiello, PhD (Univ. of Padua)**

**Mario Alberto Battaglia, MD (FISM)**

**Cristina Becchio, PhD (Univ. of Turin)**



