

Impaired remapping of social relationships in older adults

Jan Oltmer^{1,2,3} Thomas Wolbers^{1,4} Esther Kuehn^{1,3,4}

¹ German Center for Neurodegenerative Diseases (DZNE), Magdeburg, 39120, Germany

² Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital & Harvard Medical School, Charlestown, 02129, USA

³ Institute for Cognitive Neurology and Dementia Research (IKND), Otto-von-Guericke University Magdeburg, 39120, Germany

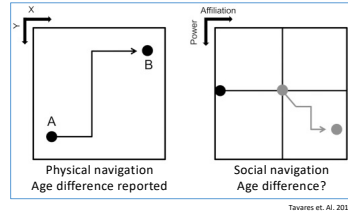
⁴ Center for Behavioral Brain Sciences (CBBS) Magdeburg, Magdeburg, 39120, Germany

Introduction

The plasticity of social relationships, categorized by change in **power** (hierarchy) and **affiliation** (sympathy), is a central aspect of our life and explains a wide range of human behavior.

Here we transfer the concept of cognitive mapping from spatial navigation to the social domain and use virtual reality to investigate:

- 1) Is social navigation modified based on the behavior of the interaction partner?
- 2) Do older adults show less adaptive behavior when interaction partners change their behavior?



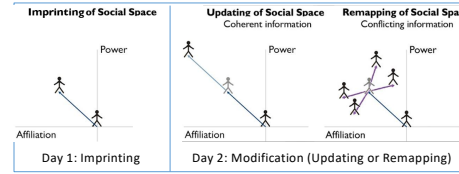
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Jan Oltmer

joltmer@mgh.harvard.edu

1

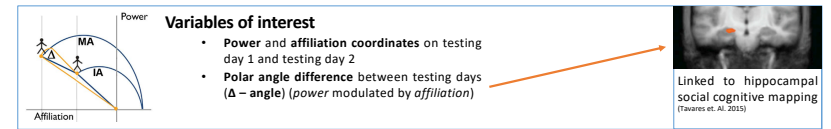
Methods



- 32 participants (16 younger, 16 older)
- 196 trials on 2 days (98 power, 98 affiliation)
- Interactions modulate power and affiliation of interaction partners



- Detailed virtual city
- 4 Interaction partners
- 2 High Power – Low Affiliation
- 2 Low Power – High Affiliation



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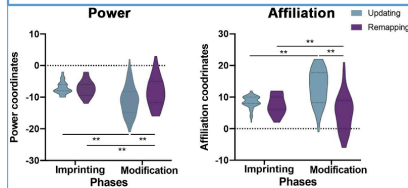
Jan Oltmer

joltmer@mgh.harvard.edu

2

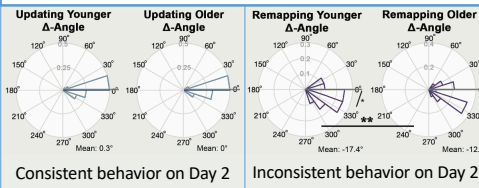
Results

1) Social navigation is modified based on the behavior of interaction partners



Participants modified the 'positioning' of avatars in social space when interaction partners changed behavior (remapping)

2) Older adults show less adaptive behavior when interaction partners change their behavior



No age differences in positioning the avatar in social space, but older adults did not adapt power modulated by affiliation when interaction partners changed behavior

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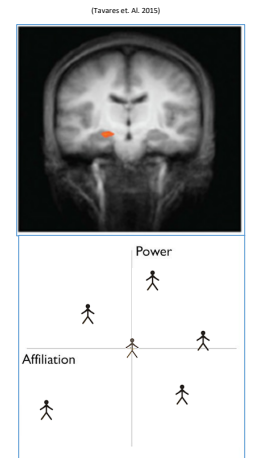
Jan Oltmer

joltmer@mgh.harvard.edu

3

Discussion

- Social categorization adapts if conflicting behavior is encountered
- This mechanism is less flexible in older adults
- We hypothesize that this is due to impaired hippocampal cognitive mapping



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Jan Oltmer

joltmer@mgh.harvard.edu

4

4