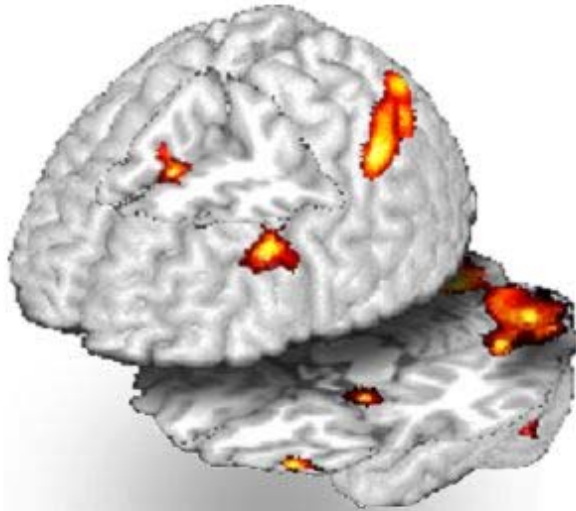


TOPICS IN ADVANCED IMAGING

Interdisciplinary Symposium on Neuroimaging

Hanse-Wissenschaftskolleg
Friday, October 19, 2007

Organized by Manfred Herrmann • CAI Bremen
Christiane Thiel • Oldenburg University



Introduced by

Gerhard Roth, Manfred Herrmann, Christiane Thiel,
Stefan Uppenkamp, Heinz-Otto Peitgen, Dieter Leibfritz,
Manfred Fahle, and Andreas Kreiter

PROGRAMME

09:00-09:15 **Introduction**

09:15-10:30 **Affective Neuroscience**
(Chair: G. Roth and M. Herrmann)

Trautmann, S.A., Fehr, T. & Herrmann, M.
fMRI Investigations of the Perception of Dynamic and Static Emotional Expressions

Kuchinke, L., Jacobs, A.M., Grubich, C., Vö, M.L.-H., Conrad, M. & Herrmann, M.
Incidental Effects of Emotional Valence in Single Word Processing

Frühholz, S., Fehr, T. & Herrmann, M.
Interference Processing in Emotional Face Perception is Modulated by the Emotional Valence

Wiswede, D., Ruesseler, J. & Münte, T.F.
Interactions of Executive Functions and Emotional Processes

10.30-11.00 **Poster-Session and Coffee Break**

11:00-12:00 **MR-Physics and Neuroimaging Methods**
(Chair: D. Leibfritz and H.O. Peitgen)

Dreher, W., Schuster, C. & Leibfritz, D.
A Comparison Between Steady-State Free Precession Based Fast Spectroscopic Imaging Methods

Küstermann, E., Meier, M., Scheich, H. & Leibfritz, D.
"Snapshot" Functional MRI of Behavior in Small Rodents

Klein, J., Schlüter, M., Rexilius, J., Konrad, O., Erhard, P., Stieltjes, B., Althaus, M., Dreher, W., Leibfritz, D., Hahn, H.K. & Peitgen, H.-O.

Uncertainty and Reproducibility of Quantitative DTI and Fiber Tracking of the Human Brain

PROGRAMME

12:00-13:00 **Monkey Neurophysiology and Functional MRI**
(Chair: A. Kreiter)

Freiwald, W. & Tsao, D.
The Neural Machinery of Face Processing

Stemann, H. & Freiwald, W.
Networks of Attention in Macaque Monkeys Performing a Motion-Tracking Task

Moeller, S. & Tsao, D.
On fMRI and Cortical Networks

13:00-14:30 **Poster-Session and Lunch**

14:30-15:45 **Functional MRI in Visual Psychophysics and Auditory Processing**
(Chair: M. Fahle and S. Uppenkamp)

Spang, K., Fahle, M. & Morgan, M.
Stereoscopic Depth Produced by Temporal Delays Activates Early Visual Cortices

Weerda, R., Thiel, C.M. & Greenlee, M.W.
The Role of the Human Primary Visual Cortex in Visual Perception and Visual Search

Uppenkamp, S.
Functional MR Imaging of Pitch Processing

Escera, C., Domínguez-Borrás, J., Schardt, D., Fehr, T., Erhard, P. & Herrmann, M.
Spatiotemporal Brain Imaging During Involuntary Attention Switching: A Combined fMRI-ERP-Study

PROGRAMME

15.45-16.45 **Neurochemical Modulation of Cognitive Functions - Pharmaco-fMRI** (Chair: C. Thiel)

Thiel, C.
Cholinergic Modulation of Cognitive Functions in the Human Brain

Giessing, C. & Thiel, C.
Between Subject Differences in Neural Network Activity Modulate the Behavioral Effects of Nicotine: A Partial Least Square Analysis

Vossel, S., Thiel, C. & Fink, G.R.
Nicotinic Modulation of Attention in Healthy Volunteers and Patients with Neglect

16.45-17.15 **Poster-Session and Coffee Break**

17:15-18:15 **Executive Functions and Action Monitoring** (Chair: A. Kreiter and M. Herrmann)

Galashan, D., Zinke, W., Schmuck, K., Fehr, T., Küstermann, E., Kreiter, A. & Herrmann, M.
Neuronal Correlates of a Shape-Tracking Working Memory Task – Human Data

Zinke, W., Galashan, D., Herrmann, M. & Kreiter, A.
Neuronal Correlates of a Shape-Tracking Working Memory Task – Macaque Data

Wittfoth, M., Küstermann, E., Galashan, D., Fahle, M. & Herrmann, M.
Cognitive Control and Error Processing in the Human Brain: Evidence from fMRI

18.15-19.00 **Poster Session and Dinner**

PROGRAMME

Poster Presentations

Fehr, T., Strüber, D., Lück, M., Herrmann, M. & Roth, G.
Neuronal Correlates of Perceiving Aggressive Behavior

Dreher, W., Meier, M., Erhard, P. & Leibfritz, D.
On the Use of Spin Echo and Stimulated Echo Based Functional MRI Sequences

Ernst, S. & Uppenkamp, S.
fMRI Evidence for Spatial Dissociation of Changes of Overall Level and Signal-to-Noise Ratio in Auditory Cortex for Tones in Noise Maskers

Högl, D., Trenner, D. & Fahle, M.
fMRI Correlates of Video Game Playing

Neber, T., Giessing, C. & Thiel, C.
*Neuronal Nicotinic Acetylcholine Receptor $\alpha 4$ Subunit Gene *CHRNA4* and Visuospatial Attention: An fMRI Study*

Olmedo Babé, M.O. & Freiwald, W.
Conflict Resolution in Macaques: Behavioral and fMRI Evidence

Christophel, T., Fehr, T., Valdes-Conroy, B., Galashan, D., Coventry, K. & Herrmann, M.
MT⁺ Activation During Spatial Language Processing

Özyurt, J. & Thiel, C.
The Influence of Immediate Feedback on Subsequent Learning in Children: An fMRI Study

Küstermann, E., Ebke, M., Dolge, K., Schwendemann, G., Leibfritz, D. & Herrmann, M.
Neuronal Correlates of Movement Disorders in Normal Pressure Hydrocephalus (NPH)

Erhard, P., Tangeten, S., Koch, M., Leibfritz, D. & Herrmann, M.
The Effects of ZEN Meditation on the Cerebral Processing of the Startle Response

Fehr, T., Code, C. & Herrmann, M.
Neuronal Correlates of Mental Calculation

The advent of neuroimaging methods such as functional magnetic resonance imaging (fMRI) has provided investigators with a tool to study neural processes involved in cognitive functions in humans and animals. Recent years have seen an increasing amount of studies which have had a great impact on our understanding of neural correlates of higher brain functions in the healthy and diseased brain. This conference gives a comprehensive up to date overview of the wide range of areas investigated by means of neuroimaging at the Universities of Bremen and Oldenburg and Magdeburg, and the Hanse-Wissenschaftskolleg in Delmenhorst. Areas covered include fMRI studies in the field of affective neuroscience and executive functions, studies using pharmacological fMRI, neuroimaging approaches in visual and auditory psychophysics, advances in combining monkey neurophysiology and fMRI, and new developments in MR physics and neuroimaging methods. Most of the research reported in this symposium was conducted within the framework and with financial support from the Magdeburg-Bremen Center for Advanced Imaging (CAI).

Manfred Herrmann

Christiane Thiel

The extended abstracts of the conference have been published in the Hanse Series Vol. 6: Herrmann, M. & Thiel, C. (Eds.) (2007). *Topics in Advanced Neuroimaging*. Oldenburg: bis-Publishers.

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