



Cardinal Mechanisms of Perception

## **SFB-TRR 135 - Retreat**

**Mo 20 – Fr 24 July, 2015**  
**Rauischholzhausen Castle**

### **Monday, July 20<sup>th</sup>**

#### Time

16:30 Karl Gegenfurtner: *Welcome and introduction*

17:00 Mary Hayhoe (Austin): *Learning and Prediction in Gaze Control.*

18:30 *Dinner*

*Evening Discussion and drinks, work groups, posters*

### **Tuesday, July 21<sup>st</sup> Prediction**

#### Time

9:00 Eli Brenner (Amsterdam) *Prediction errors and manual interception.*

10:00 A1: Doris Braun, Frank Bremmer, Karl Gegenfurtner: Interactions between pursuit and saccades in following visual targets.

10:30 *Coffee Break*

11:00 A2: Frank Bremmer: Perisaccadic changes in perceived heading and its neural correlates.

11:30 A3: Bianca van Kemenade: Predicting the multisensory consequences of one's own action.

12:00 A4: Katja Fiehler: Predicting sensory consequences of action: Tactile suppression in reaching.

12:30 *Lunch*

14:00 Jochen Triesch (Frankfurt): *Active Efficient Coding.*

14:30 A5: Knut Drewing: Predictive and sensory signals in active haptic softness perception.

15:00 A7: Bianca Jovanovic, Gudrun Schwarzer: The development of visual predictive abilities in infancy.

15:30 N1: Dominik Endres: Is human movement primitive perception Bayes-optimal?

- 16:00 *Coffee Break and poster session*
- 17:00 Reza Shadmehr (Baltimore): *Prediction of action by Purkinje cells of the cerebellum.*
- 18:30 *Dinner*
- Evening *Discussion and drinks, work groups, posters*

### **Wednesday, July 22<sup>nd</sup> Valuation**

- | Time  |  |
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| 9:00  | Dana Ballard (Austin): <i>Towards a model of human motor control.</i>  |
| 10:00 | B1: Wolfgang Einhäuser-Treyer, Bianca Wittmann: <i>The interaction of visual and motivational salience in natural-scene perception.</i>      |
| 10:30 | <i>Coffee Break</i>  |
| 11:00 | B2: Alexander Schütz: <i>Informational value before and after saccadic eye movements.</i>  |
| 11:30 | B3: Tobias Feldmann-Wüstefeld: <i>Coordination of internal goals, visual salience and learning experience in visual selective attention.</i> |
| 12:00 | B4: Wolfgang Einhäuser-Treyer, Stefan König: <i>Effects of informational value on perception and attention in associative learning.</i>      |
| 12:30 | <i>Lunch</i>   |
| 14:00 | Constantin Rothkopf (Darmstadt): <i>The cost of a glance: what is the cognitive currency?</i>  |
| 14:30 | B5: Jutta Billino: <i>Value-based modulation of saccadic control across adult lifespan.</i>  |
| 15:00 | E3: Hermann Müller: <i>Predictive Error Perception: Neural correlates and development in a complex motor task.</i>                           |
| 15:30 | E2: Mathias Hegele, Jörn Munzert: <i>Gaze behavior and performance in a far-aiming task: penalty kicking in a natural environment.</i>       |
| 15:45 | <i>Coffee Break and poster session</i>   |
| 17:00 | Jackie Gottlieb (New York): <i>Reward and information: even in individual cells?</i>   |
| 18:30 | <i>Dinner</i>  |
| 20:00 | Ina Dehnhard (Zpid, Trier) <i>Introduction to the PsychData platform</i><br><i>Discussion and drinks</i>                                     |

## **Thursday, July 23<sup>rd</sup>    Categorization**

- 9:00      Stefan Schweinberger (Jena): *Perceiving and categorizing people from voices and faces.*
- 10:00     C1: Roland Fleming: Shape understanding.
- 10:30     *Coffee Break*
- 11:00     C2: Karl Gegenfurtner: Color categories and color constancy.
- 11:30     C3: Christina Kauschke, Gudrun Schwarzer: Perception of Arousal and Valence for Words and Faces - Do Children Differ from Adults?
- 12:00     C5: Mathias Hegele: Embodiment vs. linguistic relativity: a matter of life and death?
- 12:30     *Lunch*
- 14:00     Christian Fiebach (Frankfurt): *Language Processing by Overlapping Predictions: A Working Model.*
- 14:30     Melissa Vo (Frankfurt): *Reading Scenes: Scene Grammar Guides Attention in Real-World Environments.*
- 15:00     E1: Andreas Jansen: Seeing faces in random noise: A Brain network for illusory face perception.
- 15:30     *Coffee Break and poster session*
- 17:00     Laurence Maloney (New York): *Measuring uncertainty.*
- 19:00     *Reception and conference dinner*

## **Friday, July 24<sup>th</sup>**

Breakfast and departure

## List of posters:

- A1: Doris Braun: Changes in visual sensitivity during pursuit and saccades.  
Frank Bremmer, Stefan Dowiasch: Neural basis of spatial (mis-)localization during smooth eye-movements.  
Jan Churan: Smooth pursuit eye movements in a head-unrestrained monkey.  
Maria Matziridi: Spatial (mis-) localization during saccades.  
Nick Ross: Smooth pursuit and motion prediction for nonlinear trajectories.
- A2: Constanze Schmitt: EEG-analysis of the processing of visual self-motion.  
Johannes Paul: Integration of visual and tactile cues in perception of self-motion.
- A3: Bianca van Kemenade: Simultaneity judgments in the context of an action outcome.
- A4: Dimitris Voudouris: Saccades towards targets of different somatosensory modalities.  
Stefanie Müller: Effector movement influences the reference frames for proprioceptive reach targets.
- A5: Alexandra Lezkan: Motivation modulates haptic softness exploration.  
Anna Metzger: Integration of haptic information in softness perception.
- A7: Claudia Kubicek: The influence of motor skills on infants' predictive abilities in perception and Action.
- B1: Judith Schomaker: Object-based attention is guided by motivational and visual salience.
- B2: Christian Wolf: Information gain does not modulate the facilitation of saccades by a perceptual task.
- B3: Tobias Feldmann-Wüstefeld, Hanna Kadel: Can top-down control override learning experience?
- B4: Stephan König: Attention and valuation in associative learning.  
Svenja Marx: Modeling rivalry using winner-take-all circuits with memory.
- B5&B2: Jutta Billino, Alexander Schütz: Age-related changes in saccadic control under risk.
- C1: Filipp Schmidt: Measuring shape representation under rigid and non-rigid transformations.

C3: Daniela Ludwig, Michael Vesker: Categorizations of emotions in faces - a comparison of response time and accuracy in 6, 9, and 12-year-old children.

C5: Friederike Seyfried: Inanimate actions and animate actors - Asymmetries in the processing of context-based expectations of animacy.

N: Dominik Endres: Analyzing the semantic structure of high-level vision in man and monkey

E1: Andreas Jansen: Seeing faces in random noise: A Brain network for illusory face perception.

Andreas Jansen, Stefan Fräßle, Anna Thorwart: Neural correlates of emotion categorization: Development of network models.

E2: Wolfgang Einhäuser-Treyer, Mathias Hegele, Jörn Munzert: Gaze behavior and performance in a far-aiming task: penalty kicking in a natural environment.

E3: Lisa Maurer, Hermann Müller: Predictive Error Perception: Neural correlates and development in a complex motor task.

## List of Participants:

### Invited Speakers:

Dana Ballard (Austin)  
Eli Brenner (Amsterdam)  
Christian Fiebach (Frankfurt)  
Jacqueline Gottlieb (New York)  
Mary Hayhoe (Austin)  
Laurence Maloney (New York)  
Constantin Rothkopf (Darmstadt)  
Stefan Schweinberger (Jena)  
Reza Shadmehr (Baltimore)  
Jochen Triesch (Frankfurt)  
Melissa Vo (Frankfurt)

### A1: Doris Braun

Frank Bremmer  
Karl Gegenfurtner  
Jan Churan  
Maria Matziridi  
Nick Ross

### A2: Frank Bremmer

Jan Churan  
Milosz Paul Krala  
Constanze Schmitt  
Johannes Paul  
Adrian Schütz

### A3: Tilo Kircher

Benjamin Straube  
Bianca van Kemenade  
Ezgi Arikan  
Miriam Steines

### A4: Katja Fiehler

Dimitris Voudouris  
Stefanie Müller

### A5: Knut Drewing

Alexandra Lezkan  
Anna Metzger

### A7: Bianca Jovanovic

Gudrun Schwarzer  
Claudia Kubicek

B1: Wolfgang Einhäuser-Treyer  
Bianca Wittmann  
Judith Schomaker  
B2: Alexander Schütz  
Christian Wolf  
B3: Anna Schubö  
Tobias Feldmann-Wüstefeld  
Hanna Kadel  
B4: Wolfgang Einhäuser-Treyer  
Harald Lachnit  
Stephan König  
Svenja Marx  
B5: Jutta Billino  
Karl Gegenfurtner  
Elena Hitzel  
Sabine Margolf-Hackl

C1: Roland Fleming  
Filipp Schmidt  
C3: Christina Kauschke  
Gudrun Schwarzer  
Daniela Ludwig  
Michael Vesker  
C5: Ina Bornkessel-Schlesewsky  
Mathias Hegele  
Phillip Alday  
Friederike Seyfried

N: Dominik Endres  
E1: Andreas Jansen  
Stefan Fräble  
Anna Thorwart  
E2: Wolfgang Einhäuser-Treyer  
Karl Gegenfurtner  
Mathias Hegele  
Jörn Munzert  
E3: Lisa Maurer  
Hermann Müller