2nd Student Retreat of the Leibniz-ScienceCampus "Primate Cognition"

19-21 October 2016

Contents

Foreword

Dear participants of the Leibniz-ScienceCampus Student Retreat 2016,

We are very pleased to welcome you to the 2nd Student Retreat of the Leibniz-ScienceCampus "Primate Cognition". This year, we will be a group of 25 PhD students covering a variety of topics from the fields of ecology, social behavior, communication, and cognition to neuroscience. Coming from different academic backgrounds can be challenging, but also very fruitful and we are looking forward to our retreat at the "Waldschlösschen" a lot.

The Leibniz-ScienceCampus was founded as a joint research platform of the German Primate Center and the University of Göttingen. Considering interdisciplinary dialogues as one of its key components, it offers various measures for scientists from the contributing institutions to exchange and cooperate. The annual Student Retreat promises to be one of these excellent opportunities for all Leibniz-ScienceCampus PhD students to engage in interesting discussions, receive productive feedback and, most importantly, have fun.

We are delighted to announce that four guest speakers are going to join us – many thanks to Gregor Bucher, Laura Desirée Di Paolo, Thomas Schultze-Gerlach and Christiana Werner for participating!

We also would like to thank Christian Schloegl for his untiring support, who always had a sympathetic ear for all of our questions and helped us throughout the organization of this retreat.

Finally, thanks to all of you for participating and making the retreat what it is meant to be. We are looking forward to three exciting, productive and enjoyable days!

Eli, Julia & Wiebke

Venue

The Academy "Waldschlösschen"

The "Waldschlösschen" is located in the middle of hilly woodlands 13 km southeast of Göttingen. It offers five living areas, seminar rooms and an educational program of roughly 180 seminars per year. The academy "Waldschlösschen", founded in 1981, a legally responsible and non-profit making foundation since 2004, is acknowledged by the country of Lower Saxony as an adult education center entitled for financial help. Its educational program appeals to interested people from all parts of society. Its special profile is rooted in the specially marked seminars for gays and lesbian, offers for HIV-positive people and those affected by AIDS and their life partners, advanced training courses on AIDS, social and sexual pedagogical topics, language courses as well as further training parallel to a job. "We are a meeting place, which feels itself responsible for the humanisation of society." This is the ideal of the academy "Waldschlösschen" and points out the direction of the understanding of its educational work. It is carried by the belief that all humans have equal rights, the solidarity with disadvantaged, the acceptance of different ways of living and sexuality, the curiosity on the "unknown as enrichment". They offer education to strengthen identity and confidence and at the same time reflect social dependence; they want to develop social and political commitment to shape and change the society *(source: Akademie Waldschlösschen @ https://www.waldschloesschen.org/)*.

Practical information

- ➢ We booked double and triple rooms for us to stay at.
- ➢ You do <u>not</u> need to bring bed linen and towels; they will be provided by the Waldschlösschen.
- ➢ Please feel free to bring games, DVDs and things alike for the evenings.
- ➢ As the Waldschlösschen is located in the middle of nowhere, there will be only little or no network coverage. However, there will be WLAN.
- ➢ The Student Retreat will be fully covered by the Leibniz-ScienceCampus including transportation, room and board. We only kindly ask you to pay for alcoholic drinks yourself.

Getting there by car
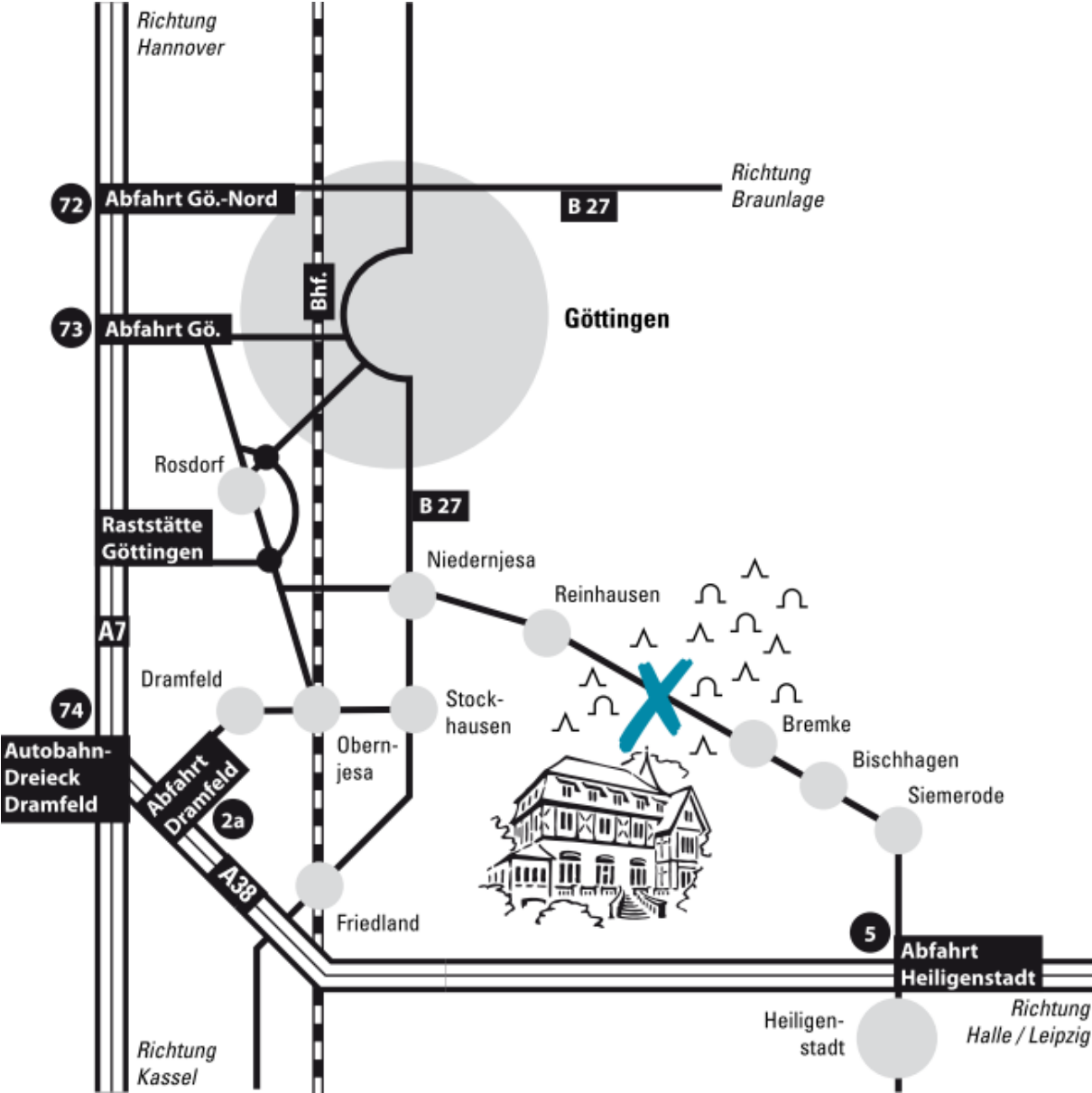
Getting there by bus

You can get to the Waldschlösschen with bus number 155, which leaves at the train station, platform E. Exit at the station "Waldschlösschen Wendebachtal" and you will find yourself on the side of the street where the Waldschlösschen is located at.

155 🚌 Göttingen - Reinhausen - Nesselröden - Duderstadt → 155

Regionalbus Braunschweig GmbH, ☎ (05 51) 1 94 49, E-Mail: rbb.goettingen@rbb-bus.de

Die Haltestelle "Diemarden Kleebreite" wird bei Straßenglätte nicht bedient!

Das gesamte Fahrtenangebot zwischen Göttingen und Duderstadt entnehmen Sie bitte dem Fahrplan GF60.

Am 24. und 31.12. Verkehr wie Samstag! Sind der 24. bzw. 31.12. ein Sonntag, gilt das Fahrplanangebot für Sonn- und Feiertage!

Am Tag der Zeugnisausgabe kann es bei einigen Fahrten zu geringfügigen Veränderungen kommen. Bitte informieren Sie sich rechtzeitig.

Montag bis Freitag

Fahrtnummer	1550 007	1550 401	1550 405	1550 201	1550 403	1550 433	1550 011	1550 013		1550 205	1550 415	1550 217	1550 417		1550 421	1550 419	1550 435	1550 423	1550 025	1550 027	1550 029	1550 031
Verkehrsbeschränkungen		S	S	F	S	S				F	S	F	S		S		S120					
Anmerkungen		99	99												A		T					
Göttingen Bahnhof/ZOB		6 10		6 25			7 35	9 35			11 35	12 30	12 50		13 35	13 35		15 50	16 40	17 35	18 35	19 35
Göttingen Marienstraße		6 11		6 26			7 36	9 36			11 36	12 31	12 51		13 36	13 36		15 51	16 41	17 36	18 36	19 36
Göttingen Bunsenstraße		6 13		6 28			7 38	9 38			11 38	12 33	12 53		13 38	13 38		15 53	16 43	17 38	18 38	19 38
Göttingen Neues Rathaus		6 14		6 29			7 39	9 39			11 39	12 34	12 54		13 39	13 39		15 54	16 44	17 39	18 39	19 39
Göttingen Leibnizstr.		6 15		6 30			7 40	9 40			11 40	12 35	12 55		13 40	13 40		15 55	16 45	17 40	18 40	19 40
Göttingen Gothaer Platz		6 16		6 31			7 41	9 41			11 41	12 36	12 56		13 41	13 41		15 56	16 46	17 41	18 41	19 41
Göttingen Magdeburger Weg		6 16		6 31			7 41	9 41			11 41	12 36	12 56		13 41	13 41		15 56	16 46	17 41	18 41	19 41
GÖ-Geismar Kiefernweg		6 17		6 32			7 42	9 42			11 42	12 37	12 57		13 42	13 42		15 57	16 47	17 42	18 42	19 42
GÖ-Geismar Hauptstraße		6 18		6 33			7 43	9 43			11 43	12 38	12 58		13 43	13 43		15 58	16 48	17 43	18 43	19 43
GÖ-Geismar Mitteldorfstraße		6 19		6 34			7 44	9 44			11 44	12 39	12 59		13 44	13 44		15 59	16 49	17 44	18 44	19 44
GÖ-Geismar Kurmainzer Weg		6 20		6 35			7 45	9 45			11 45	12 40	13 00		13 45	13 45		16 00	16 50	17 45	18 45	19 45
Klein Lengden Kirche																						
Klein Lengden Zum Alten Bahnhof																						
Diemarden Kleebreite		6 24		6 39			7 49	9 49			11 49	12 44	13 04		13 49	13 49		16 04	16 54	17 49	18 49	19 49
Diemarden Schulstraße											11 50		13 08					16 05				
Diemarden Bahnhofstraße		6 26		6 41			7 51	9 51				12 46			13 51	13 51		16 56		17 51	18 51	19 51
Diemarden Sportplatz		6 27		6 42			7 52	9 52			11 52	12 47	13 10		13 52	13 52		16 07	16 57	17 52	18 52	19 52
Reinhausen Knüllstraße		6 29		6 44			7 54	9 54			11 54	12 49	13 12		13 54	13 54		16 09	16 59	17 54	18 54	19 54
Reinhausen Kirchberg		6 30		6 45			7 55	9 55			11 55	12 50	13 13		13 55	13 55		16 10	17 00	17 55	18 55	19 55
Reinhausen Reinstraße		6 31		6 46			7 56	9 56			11 56	12 51	13 14		13 56	13 56		16 11	17 01	17 56	18 56	19 56
Bettenrode Wendebachtal		6 32		6 47			7 57	9 57			11 57	12 52	13 15		13 57	13 57		16 12	17 02	17 57	18 57	19 57
Waldschlösschen Wendebachtal		6 34		6 49			7 59	9 59			11 59	12 54	13 17		13 59	13 59		16 14	17 04	17 59	18 59	19 59
Appenrode Wendebachtal		6 35		6 50			8 00	10 00			12 00	12 55	13 18		14 00	14 00		16 15	17 05	18 00	19 00	20 00
Bremke An der Waldbühne		6 36		6 51			8 01	10 01			12 01	12 56	13 19		14 01	14 01		16 16	17 06	18 01	19 01	20 01
Bremke Ortsmitte		6 37		6 52			8 02	10 02			12 02	12 57	13 20		14 02	14 02		16 17	17 07	18 02	19 02	20 02
Bremke Am Laubberg		6 38		6 53			8 03	10 03			12 03	12 58	13 21		14 03	14 03		16 18	17 08	18 03	19 03	20 03
Elbickerode Ortsmitte															14 04							
Elbickerode Vogelsang															14 05							
Bischhagen															14 07							

Regionalbus Braunschweig GmbH, ☎ (05 51) 1 94 49, E-Mail: rbb.goettingen@rbb-bus.de

| Die Haltestelle "Diemarden Kleebreite" wird bei Straßenglätte nicht bedient! |

| Das gesamte Fahrtenangebot zwischen Göttingen und Duderstadt entnehmen Sie bitte dem Fahrplan GF60. |

| Am 24. und 31.12. Verkehr wie Samstag! Sind der 24. bzw. 31.12. ein Sonntag, gilt das Fahrplanangebot für Sonn- und Feiertage! |

| Am Tag der Zeugnisausgabe kann es bei einigen Fahrten zu geringfügigen Veränderungen kommen. Bitte informieren Sie sich rechtzeitig. |

Montag bis Freitag

Fahrtnummer	1550 002	1550 004	1550 408	1550 406	1550 410		1550 012	1550 014	1550 216	1550 416	1550 218	1540 426	1550 418	1550 432	1550 220	1550 420		1550 424	1550 426	1550 226	1550 436	1550 028	1550 030
Verkehrsbeschränkungen			S		S				F	S	F	S	S	S	F	S		S	S	F	S		
Anmerkungen					5							4											
Bischhagen			6 30																				
Elbickeröde Vogelsang			6 32																				
Elbickeröde Ortsmitte			6 33																				
Bremke Am Laubberg	5 20	6 15	6 37	6 45	7 38		8 50	10 50			12 50		13 05		13 50	14 10		15 02	16 02	16 00		17 50	
Ischenrode In der Ecke			6 40																				
Bremke Ortsmitte	5 21	6 16	6 44	6 46	7 39		8 51	10 51			12 51		13 06		13 51	14 11		15 03	16 03	16 01		17 51	
Bremke Schule					7 40																		
Bremke An der Waldbühne	5 22	6 17	6 45	6 47	7 42		8 52	10 52			12 52		13 07		13 52	14 12		15 04	16 04	16 02		17 52	
Appenrode Wendebachtal	5 23	6 18	6 46	6 48	7 43		8 53	10 53			12 53		13 08		13 53	14 13		15 05	16 05	16 03		17 53	
Waldschlösschen Wendebachtal	5 24	6 19	6 47	6 49	7 44		8 54	10 54			12 54		13 09		13 54	14 14		15 06	16 06	16 04		17 54	
Bettenrode Wendebachtal	5 25	6 20	6 48	6 50	7 45		8 55	10 55			12 55		13 10		13 55	14 15		15 07	16 07	16 05		17 55	
Reinhausen Reinstraße	5 27	6 22	6 50	6 52	7 47		8 57	10 57			12 57		13 12		13 57	14 17		15 09	16 09	16 07		17 57	
Reinhausen Kirchberg	5 28	6 23	6 51	6 53	7 48		8 58	10 58			12 58		13 13		13 58	14 18		15 10	16 10	16 08		17 58	
Reinhausen Knüllstraße	5 29	6 24	6 52	6 54	7 49		8 59	10 59			12 59		13 14		13 59	14 19		15 11	16 11	16 09		17 59	
Diemarden Sportplatz	5 31	6 26	6 54	6 56	7 51		9 01	11 01			13 01		13 16		14 01	14 21		15 13	16 13	16 11		18 01	
Diemarden Schulstraße					7 53																		
Diemarden Bahnhofstraße	5 32	6 27	6 55	6 57	7 55		9 02	11 02			13 02		13 17		14 02	14 22		15 14	16 14	16 12		18 02	
Diemarden Kleebreite	5 34	6 29	6 57	6 59	7 57		9 04	11 04			13 04		13 19		14 04	14 24		15 16	16 16	16 14		18 04	
Klein Lengden Zum Alten Bahnhof																							
Klein Lengden Kirche																							
GÖ-Geismar Kurmainzer Weg	5 38	6 33	7 01	7 03	8 01		9 08	11 08			13 08	13 15	13 23		14 08	14 28		15 20	16 20	16 18		18 08	
GÖ-Geismar Mitteldorfstraße	5 39	6 34	7 02	7 04	8 02		9 09	11 09			13 09	13 16	13 24		14 09	14 29		15 21	16 21	16 19		18 09	
GÖ-Geismar Hauptstraße	5 40	6 35	7 03	7 05	8 03		9 10	11 10			13 10	13 17	13 25		14 10	14 30		15 22	16 22	16 20		18 10	
GÖ-Geismar Kiefernweg	5 41	6 36	7 04	7 06	8 04		9 11	11 11			13 11	13 18	13 26		14 11	14 31		15 23	16 23	16 21		18 11	
Göttingen Magdeburger Weg	5 41	6 36	7 04	7 06	8 04		9 11	11 11			13 11	13 18	13 26		14 11	14 31		15 23	16 23	16 21		18 11	
Göttingen Gothaer Platz	5 42	6 37	7 05	7 07	8 05		9 12	11 12			13 12	13 19	13 27		14 12	14 32		15 24	16 24	16 22		18 12	
Göttingen Leibnizstr.	5 43	6 38	7 06	7 08	8 06		9 13	11 13			13 13	13 20	13 28		14 13	14 33		15 25	16 25	16 23		18 13	
Göttingen Bürgerstraße	5 45	6 40	7 08	7 10	8 08		9 15	11 15			13 15	13 22	13 30		14 15	14 35		15 27	16 27	16 25		18 15	
Göttingen Angerstraße	5 46	6 41	7 09	7 11	8 09		9 16	11 16			13 16	13 23	13 31		14 16	14 36		15 28	16 28	16 26		18 16	
Göttingen Groner Tor/Hirtenbr	5 47	6 42	7 10	7 12	8 10		9 17	11 17			13 17	13 24	13 32		14 17	14 37		15 29	16 29	16 27		18 17	
Göttingen Bahnhof/ZOB	5 51	6 46	7 14	7 16	8 14		9 21	11 21			13 21	13 28	13 36		14 21	14 41		15 33	16 33	16 31		18 21	

Time Schedule – Wednesday, 19 October 2016

09:00-10:00   *Arrival at the "Waldschlösschen"*

10:00-11:00   *Social get together*

11:15-11:45   Franziska Hübner
The link between cognition and fitness in a small primate, the Grey mouse lemur (Microcebus murinus)

11:45-12:15   Klara Kittler
Understanding of pointing cues in lemurs

12:15-12:45   Christoph von Borell
Somatic and social dependency of personality variation

12:45-14:00   *Lunch break*

14:00-15:30   Guest Speakers: Gregor Bucher & Christiana Werner
Academics and children – it's not easy but it's worth it

15:30-16:00   *Coffee break*

16:00-16:30   Julia Jünger
The effects of ovulatory cycle shifts in steroid hormones on female mate preferences

16:30-17:00   Tobias Kordsmeyer
Effects of male testosterone and cortisol reactivity on self- and observer-rated personality states in a competitive mating context

17:00-17:15   *Short break*

17:15-17:45   Elisabeth Volk
Discourse functions of the gesture *palm-up* in German Sign Language (DGS)

17:45-18:15   Wiebke Hammerschmidt
Early Effects of Emotions Associated to Human Faces in Event-related Brain Potentials

18:30   *Dinner*

20:00   *Social program*

Time Schedule – Thursday, 20 October 2016

09:30-10:00 **Simon Stephan**
Answering causal queries about singular cases

10:00-10:30 **Johanna Prüfer**
The influence of personality on advice taking

10:30-10:45 *Short break*

10:45-11:15 **Anja Ebenau**
Personality in wild Assamese macaques

11:15-11:45 **Antonio Calapai**
A cage-based training, cognitive testing and enrichment system optimized for Rhesus Macaques in Neuroscience Research

11:45-12:00 *Short break*

12:00-12:30 **Barbora Kubenova**
Infant handling in Barbary Macaques

12:30-13:00 **Daria Gutleb**
Integrating Behavior, Hormones & Genes associated with the Primate HPA-Axis

13:00-14:00 *Lunch break*

14:00-15:30 *Social program: Exploring the forest*

15:30-15:45 *Coffee break*

15:45-17:15 **Guest Speaker: Thomas Schultze-Gerlach**
Open Science

17:15-17:30 *Short break*

17:30-18:00 **Kristina Miloserdov**
Visual misperceptions in Parkinson's disease

18:30 *Dinner*

20:00 *Social program*

Time Schedule – Friday, 21 October 2016

09:00-09:30   **Ben Schmid**
Learning from reliable and unreliable speakers

09:30-10:00   **Vivien Radtke**
Infant directed speech matters! Different accounts for the impact of IDS on language acquisition

10:00-10:30   **Sarah Eiteljörge**
Associating objects with words and actions in infancy

10:30-10:45   *Coffee break*

10:45-12:15   **Guest Speaker: Laura Desirée Di Paolo**
Lichtenberg-Kolleg

12:15-12:45   **Sarah Placì**
Intuitive statistics in long-tailed macaques

12:45-14:00   *Lunch break*

14:00-14:30   **Federica Dal Pesco**
The role of greeting behavior in regulating male-male relationships in wild guinea baboons

14:30-15:30   *Final discussion with coffee*

15:30   *Departure*

Abstracts

Anja Ebenau

Interaction of personality and social relationships in wild male Assamese macaques

In many animal species, individuals of the same sex, age and size differ in behavior patterns consistently in time and across context, comparable with human personalities. Personality traits of the social domain such as partner choice for mating or cooperation are critical for an individual's fitness. However, social personality traits are understudied to date. Personality is embedded in a social network where an individual's behavior is affected by the interaction between its own personality, its dominance rank, the presence or absence of close kin and the personalities of other individuals with whom it interacts. In humans, it is well known that personality influences the formation and maintenance of social relationships. The underlying mechanisms and the importance of personality in friendship formations remain unclear. The aim of my PhD project is two-fold: I will first describe the personality structure focusing particularly on social personality traits in a population of nonhuman primates, Assamese macaques (*Macaca assamensis*) living in their natural habitat at the Phu Khieo Wildlife Sanctuary, Thailand. I will combine established human-conducted questionnaire measures with detailed behavioral observation of macaques of our long-term study groups. Studies in natural nonhuman primate populations are particularly rewarding because they provide a comparative context against which data from human populations can be evaluated. In a next step I will investigate the effect of personality similarity in several personality dimensions on the probability of bond formation and bond maintenance. To do so I collected detailed focal observations of social interactions of adult males of four social groups of Assamese macaques. In addition, experienced observers rated all individuals using an established 54-item human personality questionnaire modified for non-human primates. I will present preliminary data on the personality structure extracted from the questionnaire ratings and first results on the interplay between personality and social relationships.

Antonio Calapai

Standardized automatic training of rhesus monkeys in their housing environment with cage-based touchscreen system.

From basic research to clinical trials, scientific investigation often involves research with Non-Human Primates (NHP), either directly or indirectly. The three *Rs principle* proclaims that to reach a more ethical use of animals in testing, researchers must take into account putative alternative methods if available (Replacement), make use of the least number of animals possible (Reduction) and try to alleviate or minimize pain, suffering and distress of the animal, while enhancing their welfare (Refinement). Regulating animal testing is not only an essential ethical choice, but also helps increase the quality of the scientific output. In the first part of the presentation I will describe our efforts in refining NHP training and housing through a cage-based stand-alone device (XBI), designed for positive reinforcement training, cognitive testing, and environmental enrichment of rhesus macaques. In the second part of the talk I will present a follow-up study on how animals performed on an algorithm-based automated training protocol, directly from their own housing environment. Throughout the presentation I will show that XBI allows computer-controlled training of monkeys in a variety of behavioural tasks and reward protocols. I will finally argue that rhesus monkeys stay engaged with the XBI over months and learn cognitive tasks of sufficient complexity for common cognitive neuroscience research. Finally, the XBI and the automated protocol implemented allowed for both the training and the testing to take place directly in the animals' housing environment without human supervision and without fluid control.

Barbora Kubenova

Male infant handling in Barbary macaques: paternal care or mating effort?

Long infant dependency in mammal species favours big maternal investment. Involvement of the male parent on the other hand is extremely variable across different taxa. Kin selection theories assume that animals take care of their offspring in order to maximise own fitness. Thus intensity of male care should reflect the extent of the paternity certainty (paternal investment hypothesis). Whereas intensive male care in monogamous callitrichids confirms this theory, male interest in infants in some promiscuous species points out its limits: e. g despite extreme promiscuity in Barbary macaques, males take care of infants more than in any other papionin species and tend to establish relationship with particular infants. It has been suggested, that this helps them to increase future mating opportunities with the infants' mothers (mating effort hypothesis). We investigate relationship between distribution of mating activities, male care during previous and following birth seasons and female and male hierarchy and address the question, whether the pattern is in accord with mating effort and/or paternal investment hypothesis. We use two different perspectives for evaluation mating activities (male and female perspective) and two different perspectives for assessing infant-male relationship (male and infant perspective) and evaluate separately male-then-care and care-then-mate pattern.

Benjamin Schmid

Learning from reliable and unreliable speakers – early roots and cognitive underpinnings

Preschoolers selectively learn from previously accurate over inaccurate informants, and even toddlers learn more when information is provided by a reliable speaker. While the phenomenon is well documented, less is known about its cognitive underpinnings and early developments. How is information from unreliable sources treated differently from that of reliable ones? Do children simply block any information from unreliable sources, do they generally encode and employ it differently or do they only differentiate when confronted with contradictory information from reliable sources? And to what extent do toddlers rely on the same strategies as preschoolers? In order to investigate that, we study 2- and 5-year-olds, using an eye-tracking paradigm. We introduce each child to a reliable and an unreliable informant. Both informants then provide novel labels without their testimony being contradicting, each labelled a different target using a different label. In three subsequent tasks of varying difficulty, we compare children's performance at identifying the novel objects among distractors based on the information provided by the two speakers. As our data collection is still ongoing, only preliminary data will be presented. We expect children to show some evidence of learning from both speakers, especially in the simple, more associative task. But we also expect to see differences based on the prior reliability of the informant - despite there being no conflicting testimony - in the more difficult tasks. This pattern of findings would exclude a simple blocking strategy as explanation for children's performance when learning words from reliable and unreliable individuals. It would reiterate that children in situations without conflicting information also learn from unreliable individuals, even when juxtaposed with a reliable individual. And furthermore, it would suggest that emerging word-objects links are weaker when learning new labels for unknown objects from a previously unreliable informant.

Christoph von Borell

Somatic and Social Dependency of Personality Variation

How can we explain personality variation among individuals in the light of evolution? One line of reasoning is built around the hypothesis that additional to mechanisms of genetic transmission of behavioural traits, individuals will also calibrate their behaviour based on cues of their body or social environment. Following this theory, behavioural differences are (partly) a product of *reactive heritability*: an adjustment of behaviour as reaction to inherited traits or social positions. I will present the interdisciplinary theoretical framework behind this mechanism and results of studies, where we tested this theory in humans and rhesus macaques.

Daria Gutleb

Integrating behaviour, hormones and genes associated with the primate HPA-axis

In social species stressful encounters are omnipresent. Consequently, behavioural and physiological responses to stress play a crucial role for maintaining homeostatic balance. In vertebrates the HPA-axis is the central physiological pathway activated in response to stress. Experimental studies on humans have shown that variations in the genes coding for the HPA-axis affect individual stress responsiveness. However, genetic influences on individual stress types have been largely neglected in non-human primates. The aim of this PhD project is to investigate the links between an individual's genetic setup and its behavioural and physiological responses to naturally occurring stressors in the Assamese macaque (*Macaca assamensis*). For this purpose we screen several genes coding for the main elements of the HPA-axis and set them in relation to individual stress- and aggression-related behaviour and endocrine stress levels. Considering the interplay of genes, hormones and behaviour in wild primates will increase our current understanding of individual stress responsiveness. We apply only non-invasive methods of behaviour observation and assessment of stress levels and genotypes using faecal samples. So far, we detected three polymorphisms in the 3'UTR of the serotonin transporter gene, indicating that our study population is heterogeneous. Previous studies have shown that functional variants in serotonergic neurotransmission play a role in stress- and aggression related behavioural traits. After completed determination of genetic variants we will link detected genotypes to behaviour and endocrine stress levels and compare them between periods of high and low social stress.

Elisabeth Volk

Discourse functions of the gesture *palm-up* in German Sign Language (DGS)

Manual and nonmanual gestures used in social interactions by hearing non-signers may become incorporated into the linguistic system of sign languages. For instance, sign languages systematically include manual gestural elements such as pointing signs, question markers, and discourse markers that are also essential in structuring communicative interaction in spoken language communication. The gesture *palm-up* is one of these elements, which has been described as a co-speech gesture in spoken languages (cf. Kendon 2004; Müller 2004) and is also attested to fulfill various functions within sign language discourse (cf. Engberg-Pedersen 2002; Conlin, Hagstrom, and Neidle 2003; McKee and Wallingford 2011; van Loon 2012). Due to the observation that signers of different age groups use palm-up for different discourse functions in New Zealand Sign Language and the Sign Language of the Netherlands (cf. McKee and Wallingford 2011; van Loon 2012), van Loon, Pfau, and Steinbach (2014) further argue for a grammaticalization path from gesture to functional linguistic element. Accordingly, palm-up enters the grammatical system of sign languages as a turn-taking marker, which may further develop more grammatical meanings paving the way for discourse markers, conjunctions, and epistemic markers, among others. Following this line of argumentation, I will present the first results of a thorough investigation of palm-up in German Sign Language (DGS), which evaluates its discourse functions in relation to different age groups.

Federica Dal Pesco

Male-male relationship dynamics and the role of ritualized male-male greeting behavior in wild guinea baboons (Papio Papio) in the Niokolo-Koba National Park, Senegal

Papio spp. present diverse social systems and very different male dynamics. In this genus ritualized greeting behavior is one of the most striking male-male social interactions. These male interactions, defined as exchanges of non-aggressive signals between two individuals (Kutsukake et al. 2006), can be less or more intense, involving behaviors with high physical risks such as genital fondling and mounting. Greeting occurrence is particularly intriguing in this genus, as intense greetings can lead to negative effects on males' future reproductive potential in species characterized by such high male aggressiveness. However, several past attempts to investigate greeting function led to different conclusions. The aim of this study was to investigate male-male dynamics in wild Guinea baboons, with a specific focus on the question of whether their ritualized greetings function to assess and maintain relationship quality (Whitham & Maestripieri, 2003) and/or buffer tension (Colmenares 1990, 1991a, 1991b) among males. Wild Guinea baboons live in nested multilevel societies characterized by a high degree of spatial tolerance and female-biased dispersal (Kopp et al. 2015; Patzelt 2013; Patzelt et al. 2014). In this species greetings are one of the most frequent male-male social interactions (Dal Pesco 2013; Patzelt 2013). Adult males maintain affiliative relationships with specific males whom they support in agonistic events and, most interestingly, most social interactions among males occur regardless of kinship (Patzelt 2013; Patzelt et al. 2014). We collected data in the Niokolo-Koba National Park, Senegal, during 19 consecutive months between 2014 and 2015. During this period, we studied the social behavior of 24 adolescent and adult male Guinea baboons (>800h of focal observations and >6200 proximity scans), with a specific focus on the effect on greeting occurrence of affiliative preferential relationships (grooming and contact-sit) and close spatial association (>1m to 5m proximity) among males and aggressive context within the party. If greeting is related to relationship quality we would expect preferential and closely spatially associated partners to greet at a higher rate, while if greeting is used by males to reduce tension, more greetings should occur in temporal association with aggressive context. While dyadic affiliative relationships were not predictive of greeting rate, males that spent a greater proportion of time in close spatial association greeted at a higher rate. Aggressive contexts did not seem to be a major predictor of greeting occurrence as greetings were not restricted to aggressive events. As greeting behavior was not confined to preferential partners or the occurrence of aggression, it appears to have a more general function in social relationships among males. For instance, males might use this behavior with non-preferential partners with whom the relationship is not as predictable.

Franziska Hübner

The link between cognition and fitness in a small, free-living primate, the grey mouse lemur (*Microcebus murinus*)

Animals differ in their cognitive abilities not only on the species level, but also on the individual level differences in cognitive abilities are pronounced. However, the causes and consequences of this variation, shedding light on the evolution of cognition, are still poorly understood.

In order to further investigate this adaptive value of cognitive traits, we study the link between cognitive abilities and fitness outcomes in a small, wild living strepsirrhine primate, the grey mouse lemur (*Microcebus murinus*). During short-term captivity we test individuals in different ecologically relevant cognitive abilities involving problem-solving skills, spatial learning, reversal learning and inhibitory control. For the fitness measurements we assess individual survival in the following seasons, reproductive success and body condition. Preliminary analyses of the link between cognitive performance and two body condition measures failed to reveal consistent correlations. Therefore, our first results strengthen the need of further unraveling how natural selection acts on cognition to finally answer the question if it pays to be smart.

Johanna Prüfer

The influence of personality on advice taking

Using advice plays an important role in everyday decisions. For example, a customer might ask a friend for a recommendation before purchasing an expensive product or a patient receives advice from a doctor on treating a medical condition. Although decision makers can potentially benefit from the use of advice, its underutilization was shown consistently in the literature (e.g. Yaniv & Kleinberger, 2000, OBHDP). How do interindividual differences drive advice taking? This research question remained relatively unaddressed in the literature (cf. Bonaccio & Dalal, 2006, OBHDP). First studies on this topic provide some evidence that narcissism as well as agency is negatively related to advice taking (Klausel, Culbertson, Leiva, Slaughter & Jackson, 2015, OBHDP; Schultze, Gerlach & Rittich, in press). Following this line of research, this contribution presents a preliminary research idea discussing the potential predictive power of several other personality traits on advice taking. Among others, the effect of the Big Five, explicit and implicit power motive as well as testosterone is considered.

Julia Jünger

The effects of ovulatory cycle shifts in steroid hormones on female mate preferences for body masculinity, voice masculinity and social dominant behavior

Unlike other primates, human females exhibit no sexual swellings advertising their fertility. Moreover, they appear equally sexually receptive and proceptive throughout the menstrual cycle, whereas sexual receptivity and proceptivity peaks around ovulation in other primate females. Several accounts of this human phenomenon have been given, varyingly describing the phenomenon as hidden, non-advertised or lost estrus. These theories vary in the role they allot to ovulatory shifts. Previous research has documented ovulatory cycle shifts in naturally cycling women that are assumed to be regulated by steroid hormonal changes (primarily by estradiol and progesterone). There is evidence that there are adaptive cycle shifts in human females' mate preferences for several male physical and behavioral traits (e.g. Gangestad, Simpson, Cousins, Garver-Apgar& Christensen, 2004; Gangestad, Garver-Apgar, Simpson & Cousins, 2007; Pawlowski & Jasienka, 2005; Thornhill & Gangestad, 2015, see Gildersleeve, Haselton & Fales, 2014a for a meta-analysis). However, recent research casts doubt on this evidence, particularly because of several studies reported null effects (e.g. Peters, Simmons & Rhodes, 2009; Gangestad et al. 2015) and divergent opinions about meta-analyses of this literature (Gangestad, 2015; Gangestad & Haselton, 2015; Gildersleeve, Haselton & Fales, 2014b; Harris, Pashler & Mickes, 2014; Hyde & Salk, 2014; Jones, 2014; Wood& Carden, 2014; Wood, Kressel, Joshi & Louie, 2014; Wood, 2015). Therefore, the exact association between menstrual cycle shifts, steroid hormones and females' mate preferences remains unclear. Therefore, the project's aim is to contribute to the scientific discourse about the robustness of ovulatory cycle shifts. The current status of the data collection will be presented.

Klara Kittler

Understanding of pointing cues in lemurs

One of the advantages of group living is the exchange of information among group members. In this context, it might be beneficial to be able to follow the gaze of conspecifics and understand their gestures. This ability has been studied in various non-human primates by conducting object-choice experiments offering social-visual cues by human demonstrators for locating a reward. However, compared to conspecifics, human demonstrators may not be an appropriate model for some species. Therefore, we used an object-choice task to compare the performance of three lemur species (*Microcebus murinus*, n=13; *Lemur catta*, n=27; *Varecia variegata*, n=13) with the cues (looking or looking & pointing) for the location of a hidden food reward either given by a human or a conspecific model depicted in pictures. The same methodology has already been used with children, apes and monkeys, but only using humans

as demonstrators. All three lemur species performed equally well or even better than the ape and monkey species when dealing with a human demonstrator. However, since we worked with several lemur groups living under different housing conditions, our results additionally indicate that performance may depend on general experience with previous interactions with humans. Lemurs performed considerably better with a human experimenter when they were used to regular close contact with humans, whereas individuals of the other population performed better with a depicted conspecific as a demonstrator. Thus, lemurs can make use of social-visual cues. However, the exact nature of the stimulus (conspecific/human), as well as the experience with demonstrators (human), seems to have important consequences for performance in these experiments.

Kristina Miloserdov

Visual misperceptions in Parkinson's disease with stimulus processing outside of awareness

Besides motor impairments, patients with Parkinson's disease (PD) often experience non-motor symptoms such as visual hallucinations (VH) and misperceptions. In the current study we asked whether misperceptions in PD rely on consciously accessed visual information and how they relate to clinical features and low-level visual functioning. Twenty-four non-demented patients with PD (10 PD-VH and 14 PD-non-VH) and 19 age-matched healthy controls underwent psychophysical testing with continuous flash suppression (CFS) that renders visual stimuli perceptually invisible for prolonged periods of time. Images (faces, cars, scrambled) with slowly increasing contrast were presented to one eye, while dynamic Mondrian patterns were flashed into the other eye. In the 'visible' condition, the same images were shown without the rivaling pattern. Subjects were instructed to press a pre-assigned button when they recognized a car or a face. PD-VH patients exhibited a higher proportion of image recognition errors, and reported objects in scrambled images more frequently as compared to PD-nonVH and controls. Most strikingly, PD-VH patients showed higher trial-by-trial fluctuations in recognition times as compared to PD-nonVH. All effects were more pronounced in the 'visible' condition and could not be explained by differences in motor performance, medication or lower-level vision. Our findings suggest that misperceptions in PD are triggered by consciously accessed visual information. In addition, fluctuating visual performance seems to be a signature of PD patients with visual hallucinations.

Sarah Eiteljoerge

The meaning of life: arbitrariness and reference in word and action learning

Successful communication often involves comprehension of both spoken language and observed actions. While even very young infants can learn associations between actions and objects (Hunnius & Bekkering, 2010) as well as between words and objects (e.g., Bergelson & Swingley, 2012; Mani & Plunkett, 2008), the extent to which infants preferentially associate objects with linguistic or non-linguistic information remains as yet unclear. In the current study, 12- and 24-month-olds participated in an eye-tracking paradigm consisting of a training and a test phase. In eight training trials, infants were presented with two novel objects presented in motion accompanied by a novel label (e.g., blue object called *"Tanu"* moving up and down). Across twelve test trials, infants were then tested on their learning of the different association dyads (word-object, action-object, word-action). After one week, infants' retention was tested in the same manner. In addition, vocabulary and fine motor skills were administered offline. Analyses indicate that infants looked longer to the target object in word-object trials than in action-object trials, suggesting that word-object associations appear to be more dominant, also at retention. These results are in line with previous research suggesting that words appear to be highly relevant markers in early language acquisition. However, this might be due to the actions' arbitrariness (similar to the sound of words) while goal-directed actions include additional meaning (similar to the reference of words), and might therefore be easier to learn. This cross-domain comparison provides new perspectives for current theories on both word and action learning.

Sarah Placì

Intuitive statistics in long-tailed macaques

The ability to compare absolute and relative quantities is a useful tool for animals across many contexts. Recent research showed that great apes, similarly to human infants, cannot only compare relative frequencies, but also use this information to form expectations about the likely outcome of sampling processes. Here we investigated whether this basic form of intuitive statistics is also present in monkeys. In a series of experiments, long-tailed macaques saw different pairs of populations containing varying proportions of two food types (preferred vs. neutral). In one population, the relative amount of preferred food items was always higher than in the other. An experimenter simultaneously drew one item out of each population, hid them in her fists and presented them to the monkey who could choose from which hand it wanted to be rewarded. We predicted that monkeys would choose the hand drawing an item out of the population with the higher relative frequency of the preferred food type. We found that monkeys succeeded in experiments in which absolute and relative amount of preferred food items were confounded. They failed, however, in experiments which required them to take into account the ratio of preferred and neutral food items in both populations. These results may suggest that Old world monkeys are not able to reason from populations to samples based on relative frequency information. However, an alternative explanation could be that the presentation format is too distracting for the monkeys to reason properly. To overcome this possible problem, ongoing experiments are testing whether monkey's performance increases if proportions of food are traded with proportions of non-edible items (pebbles). Another explanation to the poor performance of our monkeys could be that they can only process probabilities using sequentially acquired information. To test this, we are developing a statistical machine that will allow them to sequentially sample statistical information. Ultimately, we aim to contribute to a better understanding of the evolution of intuitive statistical capabilities in primate phylogeny.

Simon Stephan

Answering Causal Queries about Singular Cases

In everyday life, singular causal queries are omnipresent. One might ask, for example: was it my drinking too many glasses of wine yesterday that has caused the mean twinge in my head this morning? Was Billy's smoking causally responsible for his lung cancer? Though we are very familiar with such queries, queries about singular causation face a problem: an observed co-occurrence of two events needs to be distinguished from a mere coincidence. As a first step, it thus needs to be decided whether the two observed events are instantiations of a generic cause-effect relation (does drinking too much wine cause headaches? Does smoking cause lung cancer?). But even if this is the case, causation in a single case is not guaranteed as long as the generic causal relationship is probabilistic and alternative causes exist. In my talk, I want to present a computational model that delivers the probability that one particular event is causally responsible for another, given that both events have co-occurred. First, the model accesses generic causal knowledge either on the individual or the group level. Second, the model considers the possibility of a coincidence by adopting Cheng and Novick's (2005) power PC measure of causal responsibility. To take uncertainty about both the causal structure and the parameters into account, the causal responsibility measure was embedded within the structure induction (SI) model developed by Meder et al. (2014). I want to present the results of three experiments that show that the SI model better captures the responses of participants than alternative models in the field.

Tobias Kordsmeyer

Effects of male testosterone and cortisol reactivity on self- and observer-rated personality states in mean in a competitive mating context

Testosterone (T) regulates human competitive-vs.-nurturing behaviour, especially in mating contexts for males. Increased human T-levels have been found after intrasexual competitions and exposure to females, facilitating courtship behaviours. How exactly T reactivity, also under buffering effects of Cortisol (C), relates to personality state changes is unclear. In a preregistered study, we aimed at inducing T increases in men (N=165, M_{age}=24.3±3.2 years, n=125 in the experimental group) through exposure to a potential mate and dyadic intrasexual competitions (e.g., arm wrestling). Effects in the experimental group were compared to those in a control group (no competition, only watching a neutral documentary video). We investigated self- and video-based observer-rated personality state changes in these two conditions, as captured by the Interpersonal Circumplex and items on "social impressions" (self-display, self-assurance, cooperativeness), in relation to hormonal levels. Results revealed higher increases in self-rated competitiveness and coldheartedness, while ingenuousness decreased more, in the experimental relative to the control group. The increase in competitiveness was moderated by T reactivity and the TxC interaction. Observer-rated self-assurance increased more in the experimental group, and was positively related to T reactivity, but not to the TxC-interaction.
Thus, both self- and observer-perceived personality responses to a competitive mating context occurred in men, more in competitiveness/self-assurance and less in nurturance/cooperativeness, and were associated with T-reactivity and partly also the TxC-interaction. Implications, limitations, and follow-up studies will be discussed.

Vivien Radtke

Segmenting new words: The influence of infants' individual preferences and mothers' input – preliminary results

In spoken language, there are very few clear word boundaries (Brent & Cartwright, 1996), however, children are still able to segment words from fluent speech without prior knowledge of the words of their native language. Indeed, the ability to segment words from fluent speech is one of the crucial steps in language acquisition with even very young children (7.5 month) being able to segment words from a fluent speech stream (Jusczyk & Aslin, 1995). Several studies suggest a preference for infant-directed over adult-directed speech (hereafter, IDS and ADS) starting immediately after birth (Pegg, Werker, & McLeod, 1992; Segal & Newman, 2015), and later, facilitated segmentation abilities of fluent IDS (Männel & Friederici, 2013; Zangl & Mills, 2007). However, the reason why infants find it easily to learn from IDS compared to ADS is still under discussion (Golinkoff, Can, Soderstrom, & Hirsh-Pasek, 2015). In an ongoing study, we conduct four different experiments to investigate whether infants' ability to extract words from fluent speech depends on their individual preference of IDS or ADS and the input they receive from their mother. Therefore, in the first experiment, mothers were are recorded imagining to tell a story to the experimenter in ADS and on a different day, imagining to tell the same story to their own child in IDS. Secondly, a preferential- listening task records the looking times of the child while listening to IDS and ADS. Here, we expect infants to look longer on the screen if their preferred speech register is being played. Thirdly, in an eye- tracking experiment, presenting an actor turns towards one of two objects after the presentation of IDS or ADS, stimuli and infants' gaze-following for the two different registers is further explored (cf.,Senju & Csibra, 2008). Finally, the last experiment investigates infants' segmentation abilities from IDS and ADS using EEG.
Preliminary results revealed that if the input infants typically receive from their mother tends to be more ADS-like, they will listen longer to the IDS passages. Hence, infants might listen longer to the stimuli opposite to what they are typically exposed to as these rather novel stimuli attract their attention. Further ongoing analyses of the eye- tracking data indicated a general preference of the infants to follow the gaze of an actor during ADS presentation if the mother tends to use more ADS -like input when addressing her infant. We expect to find similar results for the ability to segment words from a fluent speech stream. However, the presented results are currently restricted to a small number of participants.

All in all, the preliminary data suggests that there seems to be a tendency that the input the child receives plays a major role with respect to her individual motivation and her ability to learn words from different kinds of speech registers.

Wiebke Hammerschmidt

Early Effects of Emotions Associated to Human Faces in Event-related Brain Potentials

Facial expressions of emotion are preferentially processed over neutral faces due to their high relevance to the human's social life. This processing advantage has not only been demonstrated at the behavioral level but is also reflected in emotion-related modulations of several components of event-related potentials (ERPs). Recently, it has been proposed that inherently neutral stimuli might gain increased salience through learning mechanisms. In the present study, we aimed at investigating whether acquired emotional valence would result in processing advantages similar to emotional expressions by employing an associative learning paradigm. In the learning session, participants (N= 24) learned to categorize inherently neutral faces as positive, negative, or neutral by receiving monetary gain, loss, or zero outcome. ERPs were recorded in the test session while participants performed a gender decision task on these faces, as well as on faces expressing happy, angry or no emotion. Whereas ERP effects to emotional – primarily angry – expressions occurred in well-established emotion-related ERP components (EPN, LPC) around 200 ms after stimulus onset, ERP effects of associated valence occurred as early as 100 ms with distinguishable scalp distribution, indicating that learned emotional salience modulates very early perceptual processing stages. Interestingly, these P1-like modulations were restricted to reward associations. However, the absence of any later ERP modulations by associated valence indicates that elaborate, sustained relevance processing is restricted to biologically determined salience, as in the case of inherent facial expressions of emotion.