KOGWIS 2018

TECHNISCHE UNIVERSITÄT DARMSTADT

Centre for Cognitive Science

14TH BIANNUAL CONFERENCE OF THE GERMAN SOCIETY FOR COGNITIVE SCIENCE, GK

COMPUTATIONAL APPROACHES TO COGNITIVE SCIENCE

KEYNOTE SPEAKERS:

FRANCES EGAN (RUTGERS UNIVERSITY)
TESSA DEKKER (UNIVERSITY COLLEGE LONDON)
NOAH GOODMAN (STANFORD UNIVERSITY)
MÁTÉ LENGYEL (UNIVERSITY OF CAMBRIDGE)
IRIS VAN ROOIJ (RADBOUD UNIVERSITY NIJMEGEN)
CHRISTOPHER SUMMERFIELD (UNIVERSITY OF OXFORD)

ORGANIZING COMMITTEE:

CONSTANTIN ROTHKOPF (GENERAL CHAIR), DIRK BALFANZ, RALF GALUSKE, FRANK JÄKEL, KRISTIAN KERSTING, JAKOB MACKE, BETTY MOHLER (CO-CHAIRS)

03 - 06 SEPTEMBER 2018, CENTRE FOR COGNITIVE SCIENCE, TECHNISCHE UNIVERSITÄT DARMSTADT, DARMSTADT, GERMANY
S1-05 MASCHINENHAUS, MAGDALENENSTRASSE 12, 64289, DARMSTADT

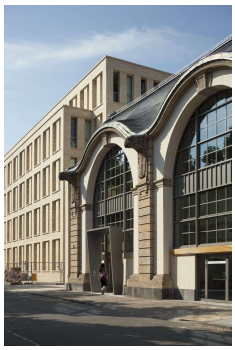
WWW.GK-EV.DE **WWW.TU-DARMSTADT.DE/KOGWIS2018**

Content

1. Conference Locations

Main conference location

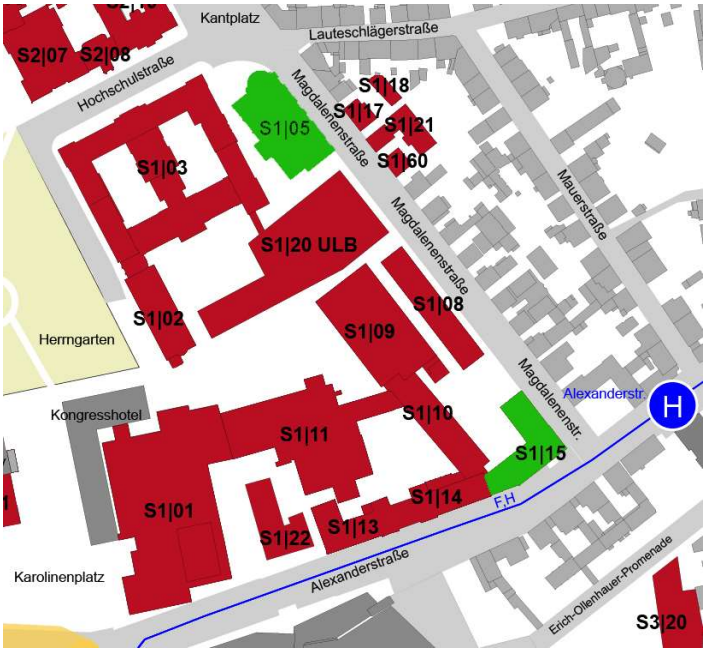
S1|05 Maschinenhaus, Magdalenenstraße 12, Darmstadt



Registration on Sunday afternoon

S1|15, Psychology Building,

Alexanderstraße 10, Darmstadt



2. Program Overview

KOGWIS 2018 - Schedule (updated 15.08.2018)

h	Sun. 2nd Sep.	Mon. 3rd Sep.	Tue. 4th Sep.	Wed. 5th Sep.	Thu. 6th Sep.	h
08:00		**Registration**	**Registration**	**Registration**	**Registration**	08:00-09:00
08:45-09:00		**Welcome Address**				
09:00-10:00		**Keynote: Tessa Dekker**	**Keynote: Christopher Summerfield**	**Keynote: Máté Lengyel**	Doctoral Symposium	09:00-10:00
10:00-10:30		*Coffee Break*	*Coffee Break*	*Coffee Break*		10:00-10:30
10:30-12:00		Main track: Philosophy of Cognition / Symposium: Cognitive Technical Systems - Towards Fluid Assistants?	Main track: Judgment and Decision Making / Symposium: Multinodal Processing in the Visual System	Main track: Cognitive Neuroscience / Tutorial: Bayesian Modeling		10:30-12:00
12:00-14:00		*Lunch Break*	*Lunch Break*	*Lunch Break*	*Lunch Break*	12:00-14:00
14:00-15:00		**Keynote: Frances Egan**	**Keynote: Iris van Rooij**	**Keynote: Noah Goodman**		14:00-15:00
15:00-15:30		*Coffee Break*	*Coffee Break*	*Coffee Break*		15:00-15:30
15:30-17:30		Poster Session	Main track: Thinking and Reasoning / Tutorial: Deep Learning	Main track: Language and Communication / Symposium: Cognitive Modeling in Comp. Science and Psychology		15:30-17:00
17:30-19:00	**Registration**	**GK Society Meeting**	**Paper Award + Presidential Address**	Poster Session		17:00-19:00
19:00			**Social Event**			19:00

3. Main Program Schedule

Sunday, 2 September 2018
Location: S1|15, Psychology Building, Alexanderstraße 10, Darmstadt

17:30 Registration until approx. 19:00

Monday, 3 September 2018
Location: S1|05 Maschinenhaus, Magdalenenstraße 12, Darmstadt

08:00 Registration
08:45 Welcome Address
09:00 Keynote: Tessa Dekker (University College London)
10:00 *Coffee Break*
10:30 Parallel Sessions
Main track: Philosophy of Cognition
Symposium: Cognitive Technical Systems - Towards Fluid Assistants?
12:00 *Lunch Break*
14:00 Keynote: Frances Egan (Rutgers University)
15:00 *Coffee Break*
15:30 Poster Session
17:30 GK Society Meeting
19:00 End of Day 1

Tuesday, 4 September 2018
Location: S1|05 Maschinenhaus, Magdalenenstraße 12, Darmstadt

08:00 Registration Desk available
09:00 Keynote: Christopher Summerfield (University of Oxford)
10:30 *Coffee Break*
11:00 Parallel Sessions
Main track: Judgement and Decision Making
Symposium: Multinodal Processing in the Visual System
12:00 *Lunch Break*
14:00 Keynote: Iris van Rooij (Radboud University Nijmegen)
15:00 *Coffee Break*
15:30 Parallel Sessions
Main track: Thinking and Reasoning
Tutorial: Deep Learning
17:00 Paper Award & Presidential Address
18:00 *Break*
19:00 Social Event

Wednesday, 5 September 2018

Location: S1|05 Maschinenhaus, Magdalenenstraße 12, Darmstadt

08:00 Registration Desk available
09:00 Keynote: Máté Lengyel (University of Cambridge)
10:30 *Coffee Break*
11:00 Parallel Sessions
- Main track: Cognitive Neuroscience
- Tutorial: Bayesian Modeling

12:00 *Lunch Break*
14:00 Keynote: Noah Goodman (Stanford University)
15:00 *Coffee Break*
15:30 Parallel Sessions
- Main track: Language and Communication
- Symposium: Cognitive Modeling in Computer Science and Psychology: Bridging the Gap

17:00 Poster Session
19:00 End of Day 3

Thursday, 6 September 2018

Location: S1|05 Maschinenhaus, Magdalenenstraße 12, Darmstadt

08:00 Registration Desk available
09:00 Doctoral Symposium
12:00 *Lunch Break*
14:00 End of Conference

4. Key Notes

Tessa Dekker (University College London)

Monday, Sep 3, 9:00-10:00

How do we develop an optimised sensorimotor system?

Humans are born with exceptionally poor visual and motor skills but by the time they reach adulthood, most vision and action is highly proficient and near-automatic. My lab investigates the processes that support this development. I will present data showing that adults are highly adept at accounting for the noise in their sensory estimates and the imprecisions of their movements. This allows them to form judgments and choose actions with a high chance of success – even in highly complex environments. Our recent research shows that this is not a trivial ability to acquire – using a combination of model-driven neuroimaging and behavioural methods, we demonstrate that children as old as 10-11 years do not correctly account for the noise in their system during vision and visually-guided action, and are placed at unnecessary risk of failing at basic tasks as result. I will present some examples of tasks that are substantially affected by this development, and present modelling work aimed at disentangling which processes drive this shift from suboptimal sensorimotor processing in childhood to the highly optimised performance in adults.

Frances Egan (Rutgers University)

Monday, Sep 3, 14:00-15:00

The role of representation in computational models

Much of cognitive neuroscience construes cognitive capacities as representational capacities, or as involving representation in some way. Computational theories of vision, for example, typically posit structures that represent edges in the world. Neurons are often said to represent elements of their receptive fields. Despite the widespread use of representational talk in computational theorizing there is surprisingly little consensus about how such claims are to be understood. Some argue that representational talk is to be taken literally; others claim that it is merely a useful fiction. In this talk I sketch an alternative account of the nature and function of representation in computational cognitive models that rejects both of these views.

Christopher Summerfield (University of Oxford)

Tuesday, Sep 4, 9:00-10:00

Ingredients of intelligence in minds and machines

There is considerable current excitement about advances in machine learning. However, artificial systems fail on a number of problems that humans master. For example, humans efficiently generate temporally extended behaviours (planning), can generalise abstract information (far transfer) and can perform multiple tasks in quick succession (multitasking). I will describe recent experiments that examine the neural and computational mechanisms underpinning these abilities,
and discuss how the resultant insights might be used to build stronger AI.

Iris van Rooij (Radboud University Nijmegen)

Tuesday, Sep 4, 14:00-15:00

Why cognitive scientists should care about computational complexity

Computational complexity theory studies the computational resources (e.g., time, space, randomness, etc.) required for solving computational problems. Its analytical tools aren't yet commonly taught in cognitive science and many still go about their business without much concern for the computational resources presupposed by their theories and models. Yet, there are good reasons for cognitive scientists to care more about computational complexity. In this talk I will explain how computational complexity theory provides useful analytical tools to guide and constrain computational-level theorizing and how it can help bring rigor and clarity to long-standing debates that center on the notion of computational intractability—e.g., rationality vs. irrationality, modularity vs. domain-generality, cognitivism vs. enactivism.

Christoph Hölscher (ETH Zürich)

Tuesday, Sep 4, 17:00-18:00

Presidential Address

Máté Lengyel (University of Cambridge & Central European University)

Wednesday, Sep 5, 9:00-10:00

A Bayesian approach to internal models

Our percepts rely on an internal model of the environment, relating physical processes of the world to inputs received by our senses, and thus their veracity critically hinges upon how well this internal model is adapted to the statistical properties of the environment. We use a combination of Bayesian inference-based theory and novel data analysis techniques applied to a range of human behavioural experiments, as well as electrophysiological recordings from V1, to reveal the principles by which complex internal models (1) are represented in neural activities, (2) are adapted to the environment, (3) can be shown to be task-independent, and (4) generalise across very different response modalities.

Noah Goodman (Stanford University)

Wednesday, Sep 5, 14:00-15:00

How language works

5. Symposia

Cognitive Technical Systems – Towards Fluid Assistants?

Monday, Sep 3, 10:30-12:00

Stefan Kopp & Ute Schmid

Modern Artificial Intelligence and Cognitive Systems are on the verge of penetrating the everyday life of human users and to free them of many tasks that are cumbersome, dangerous or exceed their abilities and resources. We are witnessing such systems being developed for, e.g., entertainment, healthcare, educational, or workplace settings, and they are being deployed by commercial players at an increasing pace. The goal is to assist users in their tasks and the systems attain a variety of roles and interaction paradigms in doing so, from responding to user instructions, to providing recommendations, engaging in negotiations, to carrying tasks or subtasks autonomously. In result, we expect to see a variety of integrated ("hybrid") settings in which humans and technical systems come to collaborate in different ways in order to solve even time- or safety-critical tasks. However, and in spite of the apparent technology push, a number of crucial questions are far from being sufficiently understood or solved: How can cognitive systems recognize and represent the state of users adequately? How can assistants support their users in a non-distracting, unobtrusive way? How do systems need to adapt to the specific requirements of the user and the demands of a given situation and task? How can machine learning and computational cognitive science help to obtain deeper user models and policies for suitable assistance? How to evaluate and validate the acceptance and efficacy of such systems? How to ensure safety and reliability of human-machine systems in safety- critical environments? How can users understand and be kept aware of the abilities and limitations of an assistance system? Can systems themselves assess their current limitations and effects (supportive or harmful) and use this to choose a suitable assistive behavior? This symposium aims to bring together researchers from different disciplines, from Cognitive Science and Artificial Intelligence, Engineering and Control, to Psychology and Human Factors, to discuss the state-of-the-art in technical approaches to developing and applying cognitive systems for user assistance. It is thus closely related to KogWis 2018's special focus on computational approaches to Cognitive Science. A special focus will be put on the notion of "fluid assistance" – the ability of technical cognitive systems to uphold a deep understanding of the dynamically changing situation, task demands and the user's internal states (cognitive, affective, or physiological) and to adapt flexibly and continuously the way in which to support the user. This vision, representing a next stage of user-adaptive assistive systems, combines and resolves the boundary between different roles, interaction modes and assistive effects a cognitive system can realize.

List of speakers:

- Ute Schmid (Cognitive Systems Group, University of Bamberg): Explaining Classifier Decisions in an Interactive Learning Environment
- Meike Jipp (Human Factors and Testing, Institute of Transportation Systems, DLR): User-state recognition as challenge for empathic assistants and automization
- Andreas Wendemuth (Cognitive Systems, Institute for Information Technology and Communication, University of Magdeburg): Intelligent driver assistants

- Dirk Söffker (Dynamics and Control, Fac. Of Engineering, University of Duisburg-Essen): Intention and option: Modelling and Recognition of human driver behavior
- Stefan Kopp (Social Cognitive Systems, Center of Excellence Cognitive Interaction Technology, Bielefeld University): Cognitive Systems for deep and fluid assistance and collaboration

Multinodal Processing in the Visual System

Tuesday, Sep 4, 10:30-12:00

Ralf Galuske

The aim of this symposium is to elucidate the functional and dynamical interactions between different centers in the mammalian visual system and to identify their relevance for information processing in the central nervous system.

List of speakers:

- Julien Vezoli (Ernst Strüngmann-Institute, Frankfurt/M, Germany): The Relation between Anatomical Connection Strength and Inter-areal Functional Connectivity through Rhythmic Synchronization
- Ralf Galuske (Centre for Cognitive Science, TU Darmstadt, Darmstadt, Germany): Functional Topography of Cortical Feedback Connections in the Visual System
- Miriam Müller (Ernst Strüngmann-Institute, Frankfurt/M, Germany): Revising the Interhemispheric Imbalance Model of Neglect
- Ricardo Kienitz (Dept. of Neurology, Frankfurt University Medical School, Frankfurt/M, Germany): Theta Rhythmic Spiking and Attentional Sampling Arising from Cortical Receptive Field Interactions
- Michael Wibral (Dept. of Psychiatry, Frankfurt University Medical School, Frankfurt/M, Germany): Neural Information Dynamics from Cells to Systems

Cognitive modeling in computer science and psychology: Bridging the gap

Wednesday, Sep 5, 15:30-17:00

Rebecca Albrecht & Mikhail Spektor

Formal modeling approaches to human cognition is the cornerstone method of cognitive science. Its various subdisciplines, including computer science, neuroscience, and psychology, rely on the computational perspective as a window to cognition. However, the methods and models that are being used as well as the goals of using cognitive modeling differ between them. For example, cognitive models in computer science rely on the assumption that cognitive processes are the result of general learning mechanisms that are able to find systematic patterns in unstructured data. These machine learning methods span from low-level connectionist mechanisms to high-level logical representations. The former aim to describe basic cognitive and biological functions such as vision and motor action, whereas the latter describe higher level cognitive and executive functions, like reasoning and planning. In psychology, cognitive models are used in conjunction with behavioral data and fall on the continuum between the poles measurement models and process models. Process models explicitly formalize the assumed underlying cognitive processes such as attention, perception,

or memory. These models are then evaluated relative to alternative models, rigorously selecting the processes that are essential and ruling out those that are not. In contrast, the mechanisms underlying measurement models are inherently agnostic with respect to the psychological processes they reflect. The associated model parameters gain psychological content through behavioural differences across experimental conditions. The question of how the different approaches to cognitive modeling may inform and benefit each other has been subject of discussion in the literature. The arguably most popular approach is the cognitive architecture ACT-R (Anderson, 2004, Psychol. Rev). ACT-R combines high-level rule representations with process assumptions about memory retrieval. However, ACT-R models suffer from various difficulties, including interpretation and falsifiability. The aim of the proposed symposium is to discuss different cognitive-modeling approaches from the various sub-disciplines of cognitive science, identify the overlaps between them, and critically reflect existing hybrid models. To do so, it comprises a total of five speakers from computer science and psychology, each representing a different aspect of the cognitive-modeling spectrum. The cornerstones of modeling techniques from computer science will be presented by Fabian Schrodt, introducing a neural-network model of social action understanding based on embodied simulation, and Ute Schmid, presenting a rule-learning framework with inductive programming as its basis. From psychology, Gidon Frischkorn will show the merits and limitations of using cognitive models as measurement tools and Mikhail Spektor will show an example of how process models are developed and evaluated. The symposium will conclude with a brief introduction about the ACT-R and will transition into an overarching discussion.

Speakers:

- Mikhail S. Spektor (University of Freiburg): Implementing value-based attentional capture in a computational process model of cognition
- Gidon Frischkorn (University of Heidelberg): Using cognitive models as measurement tools: The appropriate representation of a person's cognitive processes
- Fabian Schrodt (University of Tübingen): A neurocomputational model of action understanding
- Ute Schmid (University of Bamberg): Inductive programming: A generic approach to rule learning on the knowledge level
- Rebecca Albrecht (University of Basel): Is ACT-R enough? The merits and flaws of hybrid cognitive architectures

6. Tutorials

Neural and Probabilistic Deep Learning

Tuesday, Sep 4, 15:30-17:00

Kristian Kersting

Our minds make inferences that appear to go far beyond standard machine learning. Whereas people can learn flexible representations and use them for a wider range of learning tasks, traditional machine learning algorithms have been mainly employed in a rigid way, constructing a single function from a table of training examples. In this tutorial, I shall review deep learning approaches, a more flexible function approximation. Specifically, I will touch upon function approximators like convolutional neural networks that are robust and allow for real-time inference. However, they requiring fixed inputs and outputs and do not provide probabilities. Therefore I will also touch up upon Sum-product networks (SPNs). They are deep models that are suitable for both function approximation and probability estimation. Overall, I will review generative and discriminative deep learning approaches, both in a neural and (explicit) probabilistic fashion.

Bayesian Modeling

Wednesday, Sep 5, 10:30-12:00

Constantin Rothkopf & Frank Jäkel

The first part of the course is a basic introduction to probability theory from a Bayesian perspective. We will also discuss how Bayesian inference differs from frequentist inference. In the second part of the course we will discuss why Bayesian Decision Theory provides a good starting point for probabilistic models of perception and cognition. The focus here will be on Rational Analysis and Ideal Observer models that provide an analysis of the task, the environment, the background assumptions and the limitations of the cognitive system under study. We will go through several examples from signal detection to categorization to illustrate the approach.

7. Main Track

Speakers: *

Philosophy of Cognition

Monday, Sep 3, 10:30-12:00

- Albert Newen*. Cognitive penetrability of perceptual experience: how the activation of concepts (or background information) can modify our perceptual experience
- Wanja Wiese*. Computing the valence of pleasure and pain
- Leda Berio*. Mental state terms, conceptual acquisition and mismatching representations
- Anna Strasser*. Joint actions and artificial agents

Judgment and Decision Making

Tuesday, Sep 4, 10:30-12:00

- Pablo León-Villagrá*, Irina Preda and Christopher G. Lucas. Data availability and function extrapolation
- Rebecca Albrecht*, Janina A. Hoffmann, Timothy J. Pleskac, Jörg Rieskamp and Bettina von Helversen. Explaining quantitative judgments with a mixture model combining exemplar retrieval and cue-abstraction
- Ulrike Senftleben*, Martin Schoemann and Stefan Scherbaum. Modulation of choice perseveration in delay discounting decision making
- Sayan Gul, Paul Krueger, Frederick Callaway, Tom Griffiths and Falk Lieder*. Discovering rational heuristics for risky choice

Thinking and Reasoning

Tuesday, Sep 4, 15:30-17:00

- Kai Hamburger* and Markus Knauff. Visual imagery in human reasoning
- Lukas Elflein* and Marco Ragni. Diversity in reasoning: A challenge for cognitive modeling
- Parthena Kounatidou, Mathis Richter*, Jonas Lins and Gregor Schöner. A neural dynamic architecture autonomously builds mental models and makes inferences on them
- Stefan Depeweg, Constantin Rothkopf and Frank Jäkel*. A visual language for solving Bongard problems

Cognitive Neuroscience

Wednesday, Sep 5, 10:30-12:00

- Sen Cheng*, Mehdi Bayati and Amir Hossein Azizi. Intrinsic sequences in the hippocampus for spatial navigation and episodic memory
- Daniel Schad* et al. A selective neuronal representation of incentive salience in Pavlovian conditioning
- Zahra Moradi, Keyvan Yahya* and Eckart Altenmüller. The effects of music-based interventions on Parkinson disease
- Heiko Schütt*, Lars O. M. Rothkegel, Hans A. Trukenbrod, Ralf Engbert and Felix A. Wichmann. Predicting the fixation density over time

Language and Communication

Wednesday, Sep 5, 15:30-17:00

- Mark Blokpoel* et al. Ambiguity helps higher-order pragmatic reasoners communicate
- Jan Pöppel* and Stefan Kopp. Towards satisficing mental models for behavior understanding
- Simon Kirsch* and Lars Konieczny. The psychological reality of verb-argument constructions: A visual world eyetracking study
- Milena Rabovsky* and James L. McClelland. How event probability impacts sentence comprehension: Modeling N400 amplitudes in reversal anomalies

8. Poster Sessions

- Monday, 3 September 2018
  15:30-17:30 Poster Session 1
- Wednesday, 5 September 2018
  17:00-19:00 Poster Session 2

All posters can be presented in both poster sessions.

9. Abstracts

Abstracts marked (X) are presented as talks during the Main Track. All other abstracts are presented during the Poster Sessions. The numbering refers to the proceedings document.

Abstracts (Alphabetical by First Author)

1. Olga Abramov, Stefan Kopp, Ulrich Mertens, Anne Németh, Katharina Rohlfing and Friederike Kern: Towards a Computational Model of Child Gesture-Speech Production
2. (X) Rebecca Albrecht, Janina A. Hoffmann, Timothy J. Pleskac, Jörg Rieskamp and Bettina von Helversen: Explaining Quantitative Judgments with a Mixture Model Combining Exemplar Retrieval and Cue-abstraction.
3. Benjamin Angerer: The cognitive utility of flawed metaphors in mathematical problem-solving
4. (X) Leda Berio: Mental State Terms, Conceptual Acquisition and mismatching representations
5. (X) Mark Blokpoel, Mark Dingemanse, George Kachergis, Sara Bögels, Linda Drijvers, Lotte Eijk, Mirjam Ernestus, Naomi de Haas, Judith Holler, Stephen Levinson, Rui Lui, Branka Milivojevic, David Neville, Asli Ozyurek, Marlou Rasenberg, Herbert Schriefers, James Trujillo, Tobias Winner, Ivan Toni and Iris van Rooij: Ambiguity helps higher-order pragmatic reasoners communicate
6. Bettina Bläsing and Elizabeth Waterhouse: How spectators watch dancers moving together: effects of experience, intention and preference on visual attention
7. Hendrik Buschmeier and Stefan Kopp: Efficient Communication through Attentive Speaking
8. Caterina Bérubé, Svetlana Ognjanovic and Christoph Hölscher: Predicting financial risk judgment performance with heart rate variability
9. (X) Sen Cheng, Mehdi Bayati and Amir Hossein Azizi: Intrinsic sequences in the hippocampus for spatial navigation and episodic memory
10. (X) Stefan Depeweg, Constantin Rothkopf and Frank Jäkel: A Visual Language for Solving Bongard Problems
11. Christian Ebert, Cornelia Ebert and Robin Hörnig: Vocabulary Learning Improves with Interactive Finger Gestures
12. (X) Lukas Elflein and Marco Ragni: Diversity in Reasoning: A Challenge for Cognitive Modeling
13. Julia Frankenstein and Constantin Rothkopf: Does my GPS want me to turn now or at the next intersection? Testing the ability to detect mismatches between the map view and the egocentric view of intersections

14. Ralf Galuske, Matthias Munk and Wolf Singer: Gamma oscillations gate synaptic plasticity in the cerebral cortex
15. L. Estefania Gazzo Castañeda, Johannes Schmid and Markus Knauff: Defeasible reasoning in online shopping
16. Tobias Grage, Simon Frisch and Stefan Scherbaum: The influence of perseveration and volatility on action dynamics in color set shifting
17. Raul Grieben, Jan Tekülve, Stephan Zibner, Sebastian Schneegans and Gregor Schöner: A neural dynamic architecture for conjunctive visual search
18. Sonja Grünauer and Ute Schmid: Investigating Michie's Operational Effectiveness Criterion of Machine Learned Models
19. (X) Sayan Gul, Paul Krueger, Frederick Callaway, Tom Griffiths and Falk Lieder: Discovering Rational Heuristics for Risky Choice
20. (X) Kai Hamburger and Markus Knauff: Visual imagery in human reasoning
21. Kilian Heck, Daniel Hofmann, Mathias Peter and Ralf Galuske: Low-dimensional feature extraction of neural activity in primary visual cortex
22. Maria Heinze, Rainer Goebel and Frieder Stolzenburg: Application of Recurrent Neural Networks on fMRI and EEG Timeline Data in Music Cognition
23. David Hoppe and Constantin A. Rothkopf: Sources of variability in eye movement sequences
24. Sebastian Kahl and Stefan Kopp: Modeling nonverbal communicative signaling in predictive social motorics
25. Karl Theodor Kalveram, Dimitri Penner, Markus Hessinger and Andre Seyfarth: Cogito, Ergo Sum? About Self-Other Discrimination and Man-Robot Cooperation
26. Ashima Keshava, Thomas Schüler and Peter König: Modelling Affordance Based Saliency Maps
27. (X) Simon Kirsch and Lars Konieczny: The Psychological Reality of Verb-Argument Constructions: A Visual World Eye-Tracking Study
28. Benjamin Knopp, Moritz Schubert and Dominik Endres: Influence of Segmentation on Movement Primitive Representations under Naturalistic Conditions
29. Heinz Koeppl and Constantin Rothkopf: Learning human discounting from observational data
30. Dirk Koester, Christoph Schütz, Iris Güldenpenning and Thomas Schack: What does the EEG reveal about how athletes process head fakes in basketball?
31. Lars Konieczny and Barbara Hemforth: The role of alternative constructions for the interpretation of quantifier scope. A crosslinguistic study
32. (X) Parthena Kounatidou, Mathis Richter, Jonas Lins and Gregor Schöner: A neural dynamic architecture autonomously builds mental models and makes inferences on them
33. Barbara Kuhnert, Felix Lindner, Martin Mose Bentzen and Marco Ragni: Causal Structure of Moral Dilemmas Predicts Perceived Difficulty of Making a Decision
34. Bernhard Lang, Guillermo Aguilar, Marianne Maertens and Felix Wichmann: Generating Photorealistic Stimuli for Psychophysical Experiments
35. Vincent Langenfeld, Rebecca Albrecht and Bernd Westphal: Introducing Model Checking to Facilitate the Search for Spatial Representations in ACT-R
36. (X) Pablo León-Villagrá, Irina Preda and Christopher G. Lucas: Data Availability and Function Extrapolation

37. Saskia Leymann, Verena Haser and Lars Konieczny: The Impact of Visual Context on the Understanding of Irony
38. Falk Lieder, Frederick Callaway, Paul Krueger, Priyam Das, Tom Griffiths and Sayan Gul: Discovering and Teaching Optimal Planning Strategies
39. Jonas Lins, Mathis Richter and Gregor Schöner: Mouse tracking shows behavioral signatures of spatial language grounding
40. Johannes Lohmann, Markus Janczyk and Martin V. Butz: Common Codes in in Virtual Actions
41. Polina Markina and Igor Makarov: Do you need distraction or hint in insight problem solving?
42. Manolo Martínez: Representations are rate-distortion sweet spots
43. Maria Matuszkiewicz: Grounding singular thoughts in object files
44. Kristof Meding, Michael Hirsch and Felix Wichmann: Retinal image quality of the human eye across the visual field
45. Shirley Mey, Dirk Koester and Thomas Schack: Ideomotor simulation in manual action – Combining brain activity and eye-tracking measurements
46. (X) Zahra Moradi, Keyvan Yahya, Eckart Altenmüller, Boris Kleber and Nelson Mauro Moldanato: The effects of music-based interventions on Parkinson disease
47. Romy Müller and Dennis Paul: Common Ground with Dialogue Systems for Fault Diagnosis: How Should They Ask for Clarification?
48. Nils Neupärtl and Constantin A. Rothkopf: Human judgements of size and depth show hallmarks of explaining away
49. (X) Albert Newen: Cognitive penetrability of perceptual experience: how the activation of concepts (or background information) can modify our perceptual experience
50. Robin Pröllochs, Julia Wertheim and Marco Ragni: A Neural Engineering Framework Implementation of Conditional Reasoning
51. Juan Purcalla Arrufi and Alexandra Kirsch: Extending qualitative representations of motion
52. (X) Jan Pöppel and Stefan Kopp: Towards Satisficing Mental Models for Behavior Understanding
53. (X) Milena Rabovsky and James L. McClelland: How Event Probability Impacts Sentence Comprehension: Modeling N400 Amplitudes in Reversal Anomalies
54. Nicolas Riesterer, Daniel Brand and Marco Ragni: A Machine Learning Approach for Syllogistic Reasoning
55. Vanessa Romanescu, Iva Barisic and Christoph Hölscher: Determining the Influence of Dyadic Role Relationship on a Dyad's Pedestrian Wayfinding Performance
56. Florian Röser and Kai Hamburger: Structural landmark salience in wayfinding – A comparison of left- and right-hand traffic
57. Kai Sauerwald, Marco Ragni, Tanja Bock, Gabriele Kern-Isberner and Christoph Beierle: On a Formalization of Cognitive Architectures
58. (X) Daniel Schad, Michael A. Rapp, Maria Garbusow, Miriam Sebold, Stephan Nebe, Nils B. Kroemer, Sören Kuitunen-Paul, Elisabeth Obst, Christian Sommer, Marcus Rothkirch, Nina Romanczuk-Seiferth, Hans-Ulrich Wittchen, Ulrich S. Zimmermann, Henrik Walter, Philipp Sterzer, Michael N. Smolka, Florian Schlagenhauf, Andreas Heinz, Peter Dayan and Quentin J.M. Huys: A selective neuronal representation of incentive salience in Pavlovian conditioning
59. Jona Schröder and Alisa Volkert: Prototype-based Categorization of Lego® Bricks

60. Sarah Schwöbel, Stefan Kiebel and Dimitrije Markovi: Active Inference, Belief Propagation, and the Bethe Approximation
61. (X) Heiko Schütt, Lars O. M. Rothkegel, Hans A. Trukenbrod, Ralf Engbert and Felix A. Wichmann: Predicting the fixation density over time
62. (X) Ulrike Senftleben, Martin Schoemann and Stefan Scherbaum: Modulation of Choice Perseveration in Delay Discounting Decision Making
63. Nino Silveira, Rul Von Stülpnagel and Vincent Langenfeld: How The Appearance of Adversarial Avatars Affects Player Behavior in Computer Games
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