

6. DoktorandInnen Workshop

Allgemeine Psychologie

30. 06. – 02.07.2017

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Grußwort und Danksagung

Liebe A-Dok-TeilnehmerInnen,

wir freuen uns sehr, Euch zum 6. DoktorandInnen-Workshop der Allgemeinen Psychologie in Ulm begrüßen zu dürfen.

Auf uns wartet in den kommenden Tagen ein spannendes Programm und wir freuen uns über die zahlreichen Anmeldungen aus ganz Deutschland.

Besonders bedanken möchten wir uns bei den diesjährigen GastrednerInnen Frau Dr. Birgit Bedenk, Herrn Prof. Dr. Arnd Engeln und Herrn Prof. Dr. Josef Lukas. In ihren Vorträgen werden sie uns die Möglichkeiten einer Karriere in der Industrie, die Karriereoption einer Fachhochschulprofessur sowie wichtige Meilenstein im Lebenslauf vorstellen und diskutieren.

Für die finanzielle Förderung dieses Workshops bedanken wir uns herzlich bei der Fachgruppe Allgemeine Psychologie der Deutschen Gesellschaft für Psychologie sowie dem Lehrstuhl Allgemeine Psychologie der Universität Ulm unter Leitung von Frau Prof. Dr. Anke Huckauf.

Für die hilfreiche Unterstützung und Ratschläge in der Planung des Workshops möchten wir uns herzlich bei den DoktorandInnen der Allgemeinen Psychologie der Universität Freiburg bedanken, die den A-Dok letztes Jahr ausgerichtet haben. Herzlicher Dank für die planerische Unterstützung gebührt auch Prof. Dr. Anke Huckauf und unserer gesamten Arbeitsgruppe, insbesondere den studentischen und wissenschaftlichen Hilfskräften, die uns tatkräftig bei der Durchführung des Workshops unterstützen.

Wir freuen uns auf einen spannenden DoktorandInnen-Workshop und bedanken uns bei Euch für Euer großes Interesse und die Vielfalt an eingereichten Beiträgen.

Euer Organisationsteam:

Lisa Eberhardt
Ferdinand Pittino
Christoph Strauch

Programm

Friday, June 30th 2017

09:00 - 12:15	Preworkshop	Dr. Krzysztof Krejtz Preworkshop: A Gentle Introduction on Eye-Tracking Data		
13:15 - 13:45	Organization Team Welcome and getting to know each other			
13:45 - 15:00	1 st Session	Pia Hauck Having a drink with Tchaikovsky: The crossmodal influence of background music on the taste of beverages.	Sophie Scharf Influences of information presentation on automatic decision-making: Söllner, Bröder, and Hilbig (2013) revisited	Liliane Wulff Stereotype-reliance in source guessing: a stable cognitive trait?!
15:00 - 15:15	Coffee-break			
15:15 - 16:30	2 nd Session	Ruben Ellinghaus Construction of an Internal Reference in Stimulus Discrimination Experiments	Ruth Freitag Einflussfaktoren auf distraktorbasierte Abrufprozesse: Stimulusintensität und Stimulussalienz	Tarini Singh Distraktor-Reaktionsbindungen: Sind alle Distraktoren gleich stark gebunden?
16:30 - 17:30	Poster Session I	Stefanie Aufschnaiter P1, Christian Böffel P2, Christoph Freiherr von Castell P3, Lisa Eberhardt P4, Sonja Ehret P5, Dennis Reike P6, Christoph Strauch P7		
18:30 - 19:30	City-tour			
20:00	Dinner			

Saturday, July 1st 2017

9:30 - 11:15	3 rd Session	Christoph Naefgen Working Memory Support Facilitates the Generation of Free Choices	Franziska Orscheshek Dual-Memory Retrieval Efficiency after Practice: Effects of Strategy Manipulations	Philipp Schaper Commission Errors – Determined to do the wrong thing?	Moritz Durst Identifying the locus of no-go based backward crosstalk: Evidence from an extended PRP paradigm
11:15 - 11:30	Coffee-break				
11:30 - 12:45	4 th Session	Martin Aßmann Schreibaufgaben und deren Einfluss auf den Schreibprozess	Miles Tallon Gaze Mapping und „areas of interest“ von Novizen und Experten bei Lösungsstrategien zur Messung von Bildkompetenz	Robin Welsch Why Psychopaths do not Stand Back: Understanding Personal Space Violations through Equilibrium Theory	
12:45 - 14:00	Lunch-break				
14:00 - 15:00	Keynote I	Dr. Brigit Bedenk Karriere in der Industrie?			
15:00 - 16:15	5 th Session	Kevin Janson Der Einfluss impliziter Motive auf Aufmerksamkeitsorientierungsprozesse und assoziierte Lernprozesse	Klara Sailer Neural correlates of error processing in a non-motor Simon task	Franz Wurm Learning in uncertainty: Neural markers of model-free and model-based learning in probabilistic environments	
16:15 - 16:30	Coffee-break				
16:30 - 18:00	Poster Session II	Madeleine Stepper P1, Elisa Straub P2, Angelika Sommer P3, Vanessa Jurczyk P4, Victor Mittelstädt P5, Nikolai Pärsch P6, Ferdinand Pittino P7, Andrea Polzien P8, Margot Popp P9, Steffen Theobald P10, Ann-Kathrin Wesslein P11, Sven Thönes P12			
18:00 - 19:00	Keynote II	Prof. Dr. Arnd Engeln Karriereoption Fachhochschulprofessur			
19:00	Barbecue				

Sunday, July 2nd 2017

10:00 - 11:15	6 th Session	Eva Riechelmann Oculomotor action control in social and non-social information processing contexts	Carmen Hefer How performance-contingent reward prospect modulates cognitive control: Enhanced usage and maintenance of non-predictive contextual cues	Susann Ullrich The muscle feedback from smiling makes you put many /i:/s into names for positive things
11:15- 11:30	Coffee-break			
11:30 - 12:45	7 th Session	Carla Elizabeth Contreras Saavedra Implicit modality switching in a property selection task	Mareike Hoffmann Priorisierung von Effektorsystemen in Doppelaufgaben: Evidenz aus dem PRP-Paradigma	Julia Seibold The sequence of attention- and task-switches
12:45 - 13:00	Coffee-break			
13:00- 14:00	Keynote III	Prof. Dr. Josef Lukas Akademische Karriere – wichtige Meilensteine im CV		
14:00- 14:30	Closing and Determination of Next A-Dok Organizers			

Tagungsort und -umgebung

In Ulm, um Ulm und um Ulm herum ... findet der diesjährige A-Dok statt. Am südöstlichen Rand der schwäbischen Alb gelegen ist das schöne Ulm vor Allem bekannt für das Ulmer Münster, dessen Turm mit einer Höhe von über 160 m der höchste Kirchturm der Welt ist. Die wohl bekanntesten Ulmer sind Albert Einstein und die Geschwister Scholl. Doch auch außerhalb des Münsters und klugen Köpfen hat Ulm viel zu bieten. Wer keine sportlichen Höchstleistungen beim Besteigen des Münsters zeigen will, kann bei schönem Wetter an der Donau spazieren, in der Friedrichsau picknicken oder eines der Cafés/Bars in der Innenstadt besuchen. Im Fischerviertel kann man wunderschöne Fachwerkhäuser bewundern (inklusive einem sehr schiefen Exemplar), das Rathaus ist mit seiner opulenten Außenbemalung ebenfalls sehenswert und das Theater ist das älteste Stadttheater der Welt.

Die Universität Ulm ist ganz im Gegensatz zum Theater sehr jung: Sie feiert dieses Jahr ihr 50-jähriges Jubiläum und ist damit die jüngste Universität in Baden-Württemberg. Sie liegt auf dem Eselsberg und ist in ca. 20 Minuten zu erreichen über:

Bus Linie 3 und Linie 5 Richtung Wissenschaftsstadt oder Science Park II

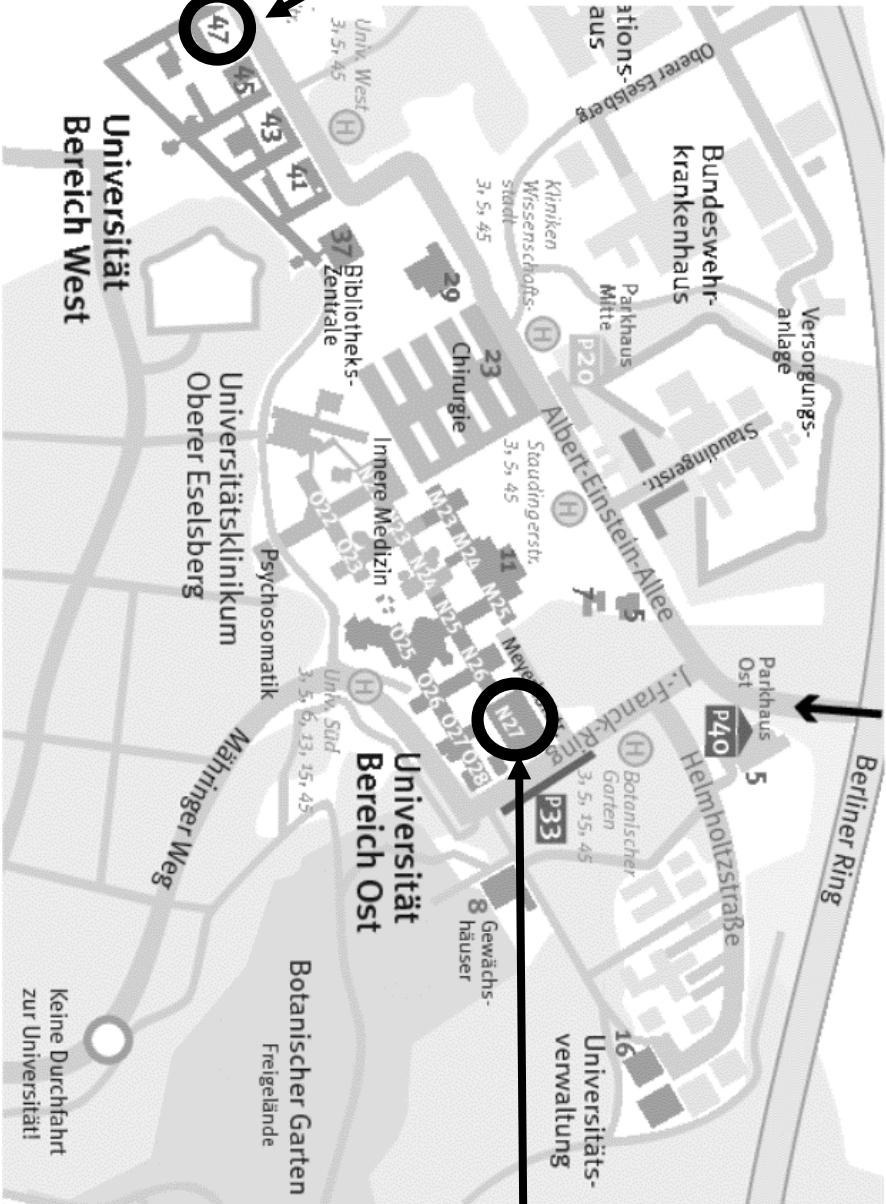
(ca. 5-Minuten Taktung)

ab „Hauptbahnhof Ulm“ oder „Ehinger Tor“

Ein paar Adressen, um sich dort etwas zum Mittagessen zu kaufen sind:

- Biergarten am Botanischen Garten (<http://www.biergarten-am-botanicum.de/>)
- Café Montreux (<http://www.cafe-montreux.de/>)
- Rewe am oberen Eselsberg (Virchowstraße 1-9)

Preworkshop
(Haltestelle „Universität West“)



Tagungsstätte
(Haltestelle „Botanischer Garten“)

Rahmenprogramm

Wir haben für Euch ein abwechslungsreiches Rahmenprogramm zusammengestellt, das euch die Möglichkeit zum gegenseitigen Austausch und Kennenlernen geben soll.

30.06.2017 (Freitagabend)

18:30 – 19:30 City-tour: Treffpunkt Stadthaus (auf dem Münsterplatz rechts)

20:00 Dinner: Tanivera Pizza e Pasta (Weinhofberg 7)

01.07.2017 (Samstagabend)

19:00 Barbecue in der Nähe der Tagungsräume

Keynote I

Karriere in der Wirtschaft

Dr. Birgit Bedenk



Birgit Bedenk leitet seit Mitte 2015 den Bereich Marketing für die D-A-CH-Region bei Elanco, einem Unternehmen, welches weltweit Produkte für die Tiergesundheit vertreibt. In ihrer Position ist Birgit Bedenk unter anderem verantwortlich für die Analyse der Markt- und Wettbewerbsdynamik, die Planung und Durchführung von Markteinführungskonzepten sowie die Kommunikation mit Kunden. Vor ihrer Tätigkeit bei Elanco war Birgit Bedenk bei Novartis Animal Health für die globale Marktforschung verantwortlich. Weitere Stationen waren Bayer Healthcare sowie ein Unternehmen für Motiv- und Marketingforschung.

Birgit Bedenk hat an der Julius-Maximilians-Universität Würzburg und der RWTH Aachen Psychologie studiert und an der RTWH Aachen im Rahmen einer Forschungszusammenarbeit mit der Firma Philips promoviert.

Wir freuen uns sehr auf ihren Vortrag und die anschließende Diskussionsrunde, in der sie über ihre Erfahrungen zur Karriere in der Wirtschaft mit sprechen wird.

Keynote II

Karriereoption Fachhochschulprofessur

Prof. Dr. Arnd Engeln (Hochschule der Medien)



Prof. Dr. Arnd Engeln studierte Erziehungswissenschaften und Psychologie an der Universität GH Essen und der TU Dresden. Nach seiner Promotion zum Thema „Aktivität und Mobilität im Alternsprozess“ an der TU Dresden, hatte er mehrere leitende Funktionen in der Wirtschaft inne (z.B. Leitung der "User Experience Academy", Robert Bosch GmbH) und übernahm ebenfalls zahlreiche Lehr- und Forschungsaufträge. 2011 habilitierte er sich zum Thema „Beiträge der Psychologie zur nutzerorientierten Entwicklung von Fahrerassistenzsystemen im Kraftfahrzeug“ an der Universität Tübingen. Prof. Dr. Arnd Engeln ist Mitgründer und wissenschaftlicher Leiter der 2012 gegründeten Do UX GmbH, die sich mit Projekten und Fragestellungen zur User Experience beschäftigt.

2014 nahm er den Ruf der Hochschule der Medien auf die Professur für Markt- und Werbeforschung an.

Wir freuen uns sehr auf seinen Vortrag und die Beantwortung von Fragen über die Karriereoption Fachhochschulprofessur.

Keynote III

Akademische Karriere – wichtigste Meilensteine im CV

Prof. Dr. Josef Lukas (Martin-Luther-Universität Halle-Wittenberg)



Prof. Dr. Josef Lukas hat in Regensburg Psychologie und Mathematik studiert. Nach seiner Promotion zum Thema „Die Struktur des Sehraumes: Ein Entscheidungsexperiment zu den Theorien der visuellen Frontalparallelen von Blank, Foley und Luneburg“ wurde er Hochschulassistent an der Universität Heidelberg, an der er sich 1992 habilitierte („Psychophysik der Raumwahrnehmung“).

1994 nahm er den Ruf für Allgemeine Psychologie an die Martin-Luther-Universität Halle-Wittenberg an. Von 2012 bis 2016 war er außerdem geschäftsführender Direktor des Zentrums für multimediales Lehren und Lernen der Martin-Luther-Universität Halle-Wittenberg, seit 2016 ist er emeritiert.

Wir freuen uns sehr auf seinen Vortrag und die Beantwortung von Fragen über die zentralen Meilensteine im akademischen Lebenslauf.

Pre-Workshop

A Gentle Introduction On Eye-Tracking Data

Dr. Krzysztof Krejtz

(University of Social Sciences and Humanities, Warsaw, Poland)



Krzysztof Krejtz is an assistant professor of Psychology at SWPS University of Social Sciences and Humanities in Warsaw, Poland, where he is running Eye Tracking Research Center. Currently Dr. Krejtz is associated as a Visiting Professor to the Department of General Psychology of Ulm University. His research and teaching interests include visual attention and its dynamics, eye movement models, eye tracking method and statistics, as well as the use of eye tracking in computer interaction control and multimedia learning. He holds a Psychology PhD from University of Warsaw, Poland.

It is a great pleasure that he will introduce us to eye-tracking data analysis, a field of his special interest and personal expertise.

The pre-workshop will provide participants with the introduction to the eye tracking method guiding from psychophysiological basis of human attention and vision system through the method basics and finishing at the use cases in psychological and interdisciplinary e.g., human-computer interaction research applications. We will point out benefits of eye tracking method deployment in the research process as well as its limitations. The pre-workshop will consist of lecture and hands-on session. During the later attendees will have a chance to participate in the process of eye tracking research construction, data acquisition and their preprocessing and simple visualizations.

Abstracts - Vortrag und Poster



Having a drink with Tchaikovsky: The crossmodal influence of background music on the taste of beverages.

Pia Hauck (Johannes-Gutenberg-Universität Mainz)

Previous research has shown that correspondences between sensual modalities exist for diverse pairings of senses. Accordingly, beverage color – but also background color – influences the taste of wine. We investigated whether an auditory background can likewise modify the taste of a beverage. First, we collected ratings of the subjective "flavor" of different music pieces. Then we used a between-subjects design to cross the music backgrounds with taste evaluations of several beverages. If descriptive and evaluative aspects of musical pieces are crossmodally transmitted from auditory to gustatory perception, the "flavor" of the background music should – to some extent – carry over to perceived taste. Participants tasted four different samples of beverages under two contrasting audio conditions and rated their taste experiences. The emotional "flavor" of the music had the hypothesized effects on the taste of the beverages. We hypothesized that such an effect is stronger for musical novices than for musical experts, and that it is weaker for aqueous solutions than for wines. However, neither group differences nor differences between wines and solutions could be found. We discuss implications of this audio-gustatory interaction for food industry and catering services.

Influences of information presentation on automatic decision-making: Söllner, Bröder, and Hilbig (2013) revisited

Sophie Scharf (Universität Mannheim)

In the classic mouse lab paradigm, information is usually displayed ordered by its validity. Söllner, Bröder, and Hilbig (2013) showed that when information was unordered in a mouse lab task, sequential decision strategies rather than an automatic decision-making model accounted for decision behavior. Their reasoning was that these tasks elicit information search processes that were not featured in the automatic model tested. Jekel, Glöckner, and Bröder (2017) now extended this automatic model to the parallel constraint satisfaction model for decision-making and search (PCS-DM+S). PCS-DM+S is an automatic decision-making model that assumes that the relevant information is represented in a network and decisions are made via an iterative spread of activation through this network. The new feature of PCS-DM+S is that it can account for information search processes and predicts a unique attraction search effect: it predicts that the direction of search is influenced by the valence of the already available information. We hypothesize that the new PCS-DM+S can explain decision-making behavior in tasks with unordered information displays. In our experiment, we will replicate Söllner et al. (2013)'s set up and present the cue information of a fictitious city size task either with ordered or unordered information in an open mouse lab between participants. In two additional conditions, we will introduce explicit information search in form of a concealed mouse lab with ordered vs. unordered information, which allows us to trace participants' information search. We expect to replicate Söllner et al.'s results in the conditions without information search and to find evidence for the attraction search effect in both conditions with information search, irrespective of the information order. Further, we expect that most participants are classified as PCS-DM+S users in conditions with information search. These results would support the claim that PCS-DM+S can account for decision-making in tasks with unordered information.

Stereotype-reliance in source guessing: a stable cognitive trait?!

Liliane Wulff (Universität Mannheim)

According to the source-monitoring framework, individuals assign information to sources based on prior knowledge, for example stereotypes, when they do not remember the source of information in a source-monitoring task. So far, the temporal stability of stereotype-reliance in source guessing has not yet been investigated. We, therefore, faced the question, whether the bias to guess in line with stereotypes when source memory fails, is stable across distinct situations, thus indicating a manifestation of a cognitive trait. In the present study, we tested the stability of stereotype-biased source guessing across two separate source-monitoring tasks, held either ten minutes or seven days apart. We used two comparable sets of normed statements rated to be either typical-old or typical-young. Half of typical-old and typical-young statements were presented by two adult sources. Participants (undergraduates) saw each source-statement combination for four seconds in the study phase. At test, age stereotypes were activated and, subsequently, participants had to remember statement- and source information. We hypothesized that the tendency to rely on stereotypic knowledge when source memory fails is an intra-individually stable cognitive trait. Individuals who show biased source guessing in the first source-monitoring task should do so in the second task, irrespective of the time interval between the two source-monitoring tasks. We addressed our research question by using hierarchical multinomial processing tree models to estimate distinct source-guessing parameters for each test and their correlation on an individual level. Preliminary results suggest that individuals, on average, guessed the source for whom the statement was age-typical when they did not remember the source. Source-guessing bias was substantively correlated across the ten-minute interval, but showed only little relation across seven days. Variance in source-guessing bias was restricted for participants with the seven-day interval between the tests though. Furthermore, bias showed no substantial correlations with personality traits and cognitive processing styles. Results will be discussed with regard to their implications on the interpretation of source-guessing bias.

Construction of an Internal Reference in Stimulus Discrimination Experiments

Ruben Ellinghaus (Eberhard Karls Universität Tübingen)

Comparing and discriminating stimuli is a basic cognitive ability traditionally investigated with psychophysical methods such as the two-alternative-forced-choice task (2AFC task). In this task participants are instructed to choose the larger of two successively presented stimuli, one of which is the standard s with constant magnitude and one of which is a comparison c with magnitude varying from trial to trial. According to prominent psychophysical models (e.g., Signal Detection Theory) participants base their judgment on the internal representations of the two stimuli presented in a given trial. However, contradictory to these models, discriminability of a stimulus pair does not only depend on the physical magnitude difference of the stimuli but also on the presentation order of s and c as well as on the magnitudes of stimuli presented on previous trials. Such order and sequence effects can be explained by the Internal Reference Model (IRM) according to which participants compare the internal representation of the second stimulus against an internal reference which consists of both previous and present stimulus instances and updates dynamically from trial to trial. From a theoretical perspective it is interesting to further investigate the nature of the internal reference. Therefore I will present experiments which address a) the stability and b) the coding of the internal reference.

Einflussfaktoren auf distraktorbasierte Abrufprozesse: Stimulusintensität und Stimulussalienz

Ruth Freitag (Universität Trier)

Um eine zielorientierte Handlungssteuerung zu ermöglichen ist unser kognitives System mit unterschiedlichen Mechanismen zur Verarbeitung, Selektion und Enkodierung von Reizen ausgestattet. Einer dieser Mechanismen ist die Bindung zwischen Reizen und Reaktionen. Nach der Theory of Event Coding (Hommel, Müsseler, Aschersleben & Prinz, 2001) wird ein Stimulus und dessen Eigenschaften, mit der darauf ausgeführten Reaktion in ein Event File integriert. Durch eine erneute Präsentation des Stimulus kann die zuvor enkodierte Reaktion abgerufen werden. Die bisherige Forschung konnte zeigen, dass auch reaktionsirrelevante Reize (Distraktoren) mit einer Reaktion in ein Event File integriert werden und die zuvor enkodierte Reaktion abrufen können; ein Effekt der als Distraktor-Reaktions-Bindung bezeichnet wird (Frings & Rothermund, 2011). In der vorgestellten Studie wird der Einfluss von Stimulusintensität und –salienz auf den Distraktor-Reaktions-Bindungseffekt untersucht. Die Ergebnisse zeigen, dass der Bindungsprozess von einer hohen Stimulusintensität und -salienz profitiert.

Distraktor-Reaktionsbindungen: Sind alle Distraktoren gleich stark gebunden?

Tarini Singh (Universität Trier)

Laut Bindungstheorien wird ein Stimulus und eine darauf erfolgende Reaktion in ein Event File (Hommel, Müsseler, Aschersleben, & Prinz, 2001) oder eine Instance (Logan, 1988) integriert, und diese beeinflussen unsere Handlungen. Außerdem, nicht nur relevante Stimuli, sondern auch irrelevante Stimuli werden in Event Files oder Instances integriert, und beeinflussen ebenfalls unsere Handlungen. Wird ein irrelevanter Stimulus wiederholt dargeboten, dann ruft dieser die Reaktion ab, mit welcher es zuvor assoziiert war. Im Fall, dass auch die Reaktion wiederholt wird, gibt es ein Reaktionszeit Vorteil, da die abgerufene Reaktion der erfordernten Reaktion entspricht. Wenn allerdings eine andere Reaktion ausgeführt werden muss, entsteht ein Nachteil, da die abgerufene Reaktion in Konflikt mit der richtigen Reaktion steht. Auch einzelne Eigenschaften des Stimulus, die nicht relevant sind, werden gebunden und rufen die vorherige Reaktion ab, wenn sie wiederholt dargeboten werden. Werden aber alle irrelevanten Eigenschaften gleich stark gebunden? Laut der Object File Theory (Kahneman, Treisman, & Gibbs, 1992) und der Theory of Feature Coding (Hommel et al., 2001) ist die räumliche Position des Stimulus eine wichtige Eigenschaft für die Integration. Diese Studie untersucht, ob alle irrelevanten Stimulus-Eigenschaften gleich stark gebunden werden und, ob auf Grund ihrer Wichtigkeit für die Integration, die Position stärker gebunden wird als andere irrelevante Stimulus-Eigenschaften. In zwei Experimenten wurden drei irrelevanten Stimulus-Eigenschaften (Farbe, Positionen, und Form) systematisch variiert und die Distraktor-Reaktions-Bindungseffekte für jede dieser Eigenschaften berechnet.

Time-based expectancy in temporally structured task switching: Underlying cognitive mechanisms

Stefanie Aufschnaiter (Universität Freiburg)

In many situations we have to switch between different tasks. Previous research has shown that task switching leads to relatively slow responses and high error rates. In many real life task switching contexts, tasks are not randomly distributed over time, but the temporal distribution of tasks carries information. Often the delay before a task predicts to some degree which task it will be, like when a longer browser loading time for a website makes loading failure, and hence the search for an alternative more likely. Results of a previous study revealed that participants indeed seemed to be able to adapt their response behavior implicitly to the predictability of the task, when the inter-task-delays predicted the task in the upcoming trial (Aufschnaiter, Kiesel, Dreisbach, Wenke, & Thomaschke, in prep.). However, in previous studies on time-based expectancy in task switching the task always coincided with the task cue (i.e. the color of the stimulus). This means that the task cue was always predictable to the same degree as the task itself; any effect of task predictability might have been due to cue predictability. In order to decide between these options, we used four cue colors instead of two in the present study. Two of the colors signaled a parity judgement task, while the other two colors signaled a magnitude judgement task. As in the study by Aufschnaiter et al., the task was predictable by the duration of the interval, but crucially, two of the colors (signaling different tasks) were predicted deterministically by interval, while the other two colors were not predictable by interval. The results indicated that the time-based task expectancy effect seems to be due to time-based expectancy of post-perceptual components of the task set and not to perceptual cue expectancy. Apart from contributing to our basic understanding of cognitive processes underlying time-based expectancy in task switching, our results offer important practical implications for interface design in human machine interaction.

Stimulus-Response Compatibility in the Presence of an Avatar

Christian Böffel (RWTH Aachen)

Modern computer applications occasionally require interactions with avatars, sometimes causing spatial dissociations between the orientation of the user and the orientation of the avatar. We examined spatial compatibility relationships with a Simon task to quantify the influence of avatars with objective performance measures. In Experiment 1 we show that the spatial Simon effect in orthogonal S-R ensembles is influenced by the presence of an avatar, cancelling the established up-right down-left advantage. In Experiment 2 we introduced stimulus laterality, resulting in a stabilization of the Simon effect. In Experiment 3 we incorporated avatar hand movements as action effects, increasing the avatar's influence and causing an interaction between spatial S-R compatibility and avatar position even with clearly lateralized stimulus-positions. Overall results indicate that users do in fact incorporate the perspective of avatars into their mental representation of a task, even when it is unhelpful. This effect is strongly enhanced by the addition of corresponding action effects.

Ambient color does not affect cognitive performance and emotional state

Christoph Freiherr von Castell (Johannes-Gutenberg-Universität Mainz)

Folklore has it that ambient color has the power to relax or arouse the observer and enhance performance when executing cognitive tasks. Such would-be powers of color have indeed been reported in numerous empirical studies, typically looking at a single performance parameter. We picked a number of commercially available colors which allegedly have the power to alter cognitive performance and the emotional state, and exposed subjects to them while solving a battery of cognitive tasks. The colors were Cool-Down-Pink, which is said to produce relaxing effects and reduce effort, Energy Red, allegedly enhancing performance via increased arousal, Relaxing Blue, which is said to enhance attention and concentration, as well as white as a control. In a between-subjects design, a total of 172 high school students carried out five tasks (number series completion, mental rotation, and memory for word categories, word pairs, and geometrical figures) while exposed to one of the four colors. The emotional state of the subjects was measured before the beginning and at the end of the experiment. The ambient colors did not have the predicted effects, neither on cognitive performance nor on the emotional state of the participants.

Modulation of Crowding Effects by Depth and Emotion

Lisa Valentina Eberhardt (Universität Ulm)

Crowding refers to the phenomenon of reduced recognition of peripherally presented targets when flanked by similar stimuli. The extent of crowding effects considerably depends on the spatial configuration of stimuli, e.g. target eccentricity, target-to-flanker spacing and their interaction. Based on these findings, we question whether also the manipulation of stimuli's configuration in the third spatial dimension, depth, affect crowding. To present stimuli in real depth we use two screens, observed via a semi-transparent mirror. One screen displays the fixation depth at a distance of 190 cm, while the other screen is displayed blockwise either in front or behind the fixated depth, which results in defocused depths. Isolated and flanked Landolt rings of 0.6° are presented for 20 ms at an eccentricity of 2° either in the fixated or in defocused depths. Four experiments are presented. In Experiment 1 target and flankers were defocused to the same depth and binocular and monocular observations were assessed. In Experiment 2 only flankers were defocused in depth, while the target was presented on the fixation depth. To examine the interplay of lower and higher level processes, in Experiment 3 and 4 targets or flankers were conditioned negatively and neutrally using the evaluative conditioning paradigm. In Experiment 3 only flankers were defocused in depth, in addition either targets or flankers were conditioned negatively and neutrally. In Experiment 4 only targets were defocused in depth, while flankers remained on the fixation depth, and either targets or flankers were conditioned negatively or neutrally. In sum we found evidence that stimuli's depth has a specific influence on the crowding effect. Depth perception seemed more likely to emerge from binocular disparity than by retinal blur. Furthermore, there was an interaction of stimuli's depth and conditioned emotion. However, the direction of the interaction of depth and emotion is not clear yet.

Effect of contemplative rooms on the perception of time

Sonja Ehret (Universität Freiburg)

It was shown that the environment of a waiting room can influence the affect and the perception of the waiting time. The goal of the current study was to examine whether and how spending time in a contemplative room would change the perception of time compared to a less contemplative more typical waiting room. As contemplative states like mindfulness are known to affect time perception by the increase of self-awareness, there are rooms particularly constructed to create these states. In the present study, 24 participants had to spend 90 minutes of time in a church, as a contemplative room, and in a doctor's waiting room, as control condition, on two different days. All timers (e.g. clock, notebook, watch, smartphone) were removed from the rooms as well as from the participants. During waiting time the participants were instructed to stay inside the room while it was entirely left to them how to spend the time. In order to measure time perception, awareness of time, passage of time judgements, and duration of time were assessed. The results suggest that participants show a higher awareness of time while they were waiting in the church compared to the doctor's waiting room. The duration of time was underestimated in the waiting room condition whereas the estimation of duration in the church didn't significantly differ from the actual passed time. This suggests that the contemplative architecture of a room can modify the perception of time spend in that room. A possible explanation for this effect is that waiting in a contemplative room evokes a mindfulness-related state that enhances the awareness of the time. Further research should focus on the factors that determine this effect of contemplative rooms on the experience of time.

Exploring the origin of the number size congruency effect: Sensitivity or response bias?

Dennis Reike (Universität Potsdam)

Physical size modulates the efficiency of digit comparison, depending on whether the relation of numerical magnitude and physical size is congruent or incongruent (Besner & Coltheart, 1979), the number-size congruency effect (NSCE). In addition, Henik and Tzelgov (1982) first reported an NSCE for the reverse task of comparing the physical size of digits such that the numerical magnitude of digits modulated the time required to compare their physical sizes. Does the NSCE in physical comparisons simply reflect a number-mediated bias mechanism related to making decisions and selecting responses about the digit's sizes? Alternatively, or in addition, the NSCE might indicate a true increase in the ability to discriminate small and large font sizes when these sizes are congruent with the digit's symbolic numerical meaning, over and above response bias effects. We present a new research design that permits us to apply signal detection theory to a task that required observers to judge the physical size of digits. Our results clearly demonstrate that the NSCE cannot be reduced to mere response bias effects, and that genuine sensitivity gains for congruent number-size pairings contribute to the NSCE.

Pupil Diameter Changes and Microsaccades: Two Indicators of Similar Underlying Activation?

Christoph Strauch (Universität Ulm)

The eyes are a window to our minds. By moving our eyes and changing the eye's lens, the pupil, we communicate and direct our attention. In non-verbal communication, we estimate the intention by looking each other into the eyes. Pupil size is considered one of the substantial parameters in this communication, e.g. dilated pupils are rated as attractive, even to the extent that belladonna (Italian: beautiful woman) received its name due to the praxis that women used the poison to keep their pupils dilated by applying it to their eyes. The second parameter that we monitor are dynamic changes of the eye-gaze, e.g. microsaccades. Microsaccades are small eye-movements, usually under 2° visual angle, that are characterized by a very high velocity. A remarkable amount of psychological research has been conducted on both, pupil size changes and microsaccades. It is suggested that these parameters can indeed indicate central nervous activity and more particularly activation in Locus Coeruleus and Superior Colliculus and herewith connected psychological processes, e.g. intention. Both, pupil size changes and microsaccades, are associated with partially common neural foundations. However, up to now those two areas of research have only very seldom been combined. It therefore remains open what interplay those variables show. This dissertation project investigates similarities and differences in pupil size changes and microsaccade occurrence and orientation. For this purpose, underlying factors should be identified. The prospects of this project are manifold, ranging from basic understanding to applications, such as new implicit gaze based human-computer interfaces.

Identifying the locus of no-go based backward crosstalk: Evidence from an extended PRP paradigm

Moritz Durst (Eberhard Karls Universität Tübingen)

A frequent observation in dual-task studies is the backward crosstalk effect (BCE), meaning that aspects of a secondary task influence Task 1 performance. Up to this point, two major types of the BCE were investigated: a BCE based on dimensional overlap between both stimuli and/or responses (the compatibility-based BCE), and a BCE based on whether Task 2 is a go or no-go task (the no-go BCE). Recently, Janczyk, Renas, and Durst (2017, JEP:HPP) localized the compatibility-based BCE inside the response selection stage, which contradicts the widely accepted notion that a capacity-unlimited stage of response activation preceding response selection proper is the locus of the compatibility-based BCE. However, because the available evidence for the locus of the no-go BCE is still mixed, the present study aimed to localize the no-go BCE inside the bottleneck model, applying the logic of the Janczyk et al. study. To this end, two experiments employed an extended psychological refractory period (PRP) paradigm with three subsequent tasks. Applying the locus of slack logic in Experiment 1, the no-go BCE was not absorbed into the cognitive slack, and thus a locus before response selection could be ruled out. Subsequently applying the effect propagation logic in Experiment 2 the no-go BCE arising in Task 1 was even inverted in Task 3. Because no propagation of the no-go BCE was observed, a locus before or in response selection could be ruled out. Thus, we tentatively conclude that the no-go BCE results during motor execution.

Working Memory Support Facilitates the Generation of Free Choices

Christoph Naefgen (Eberhard Karls Universität Tübingen)

Background: Free choice tasks are tasks in which two or more equally valid response options per stimulus exist. In investigations on the putative difference between voluntary and stimulus-determined actions, free choice tasks are often used in contrast to forced choice tasks, in which only one response option is considered correct. A robust observation is that of longer response times (RTs) in free compared to forced choice tasks. The results of previous experiments from our lab suggest that the RT difference is not due to a difference in processing efficiency but to additional cognitive processes which take an amount of time independent of the stimulus presented. Methods: The experiments presented here are part of an investigation into the nature of these processes. Specifically, we investigated whether previously given responses influence new responses through working memory load. To this end, participants performed a free choice task, but were in some conditions provided with external memory support about their previous three or seven responses. Results and conclusion: Results suggest that working memory indeed plays a role in the generation of free choice responses: In conditions without memory support, free choices were generated slower than in both the low and high memory support conditions, between which no difference was observed. Furthermore, the way any given choice was influenced by its previous choice was changed by memory support.

Dual-Memory Retrieval Efficiency after Practice: Effects of Strategy Manipulations

Franziska Orscheschek (Medical School Hamburg)

The study investigated the role of practice-effects, instruction manipulations and the associated cognitive architecture of dual-memory retrieval from a single cue. Even though there has been an established body of research concerning practice in choice reaction-time tasks and associated dual-task costs, the knowledge about such effects in long-term memory tasks with dual retrieval has still been limited. Additionally, there has been no focus on the effects of instruction manipulations on the efficiency of dual memory retrieval from a single cue. To enhance the understanding about these concepts and to aid the development of adjunct cognitive models we tested predictions about the presence of learned parallelism of dual-memory retrieval within the framework of the set-cue bottleneck model. The present study realized three experimental laboratory sessions including computerized assessments of dual-memory retrieval performance with a large number of practice trials as well as additional measures of cognitive functioning and personality domains. The results of this study will be discussed with respect to the set-cue bottleneck model.

Commission Errors – Determined to do the wrong thing?

Philipp Schaper (Julius-Maximilians-Universität Würzburg)

Executing an intention in response to a certain cue in the environment is referred to as prospective memory. Forgetting to execute such prospective memory task can be costly or even dangerous, yet this is equally true for erroneously continued execution of a prospective memory task. In a series of five experiments, we tested the dual mechanism account. This theory considers commission errors as a result of spontaneous retrieval and subsequent failure to suppress the associated action. In the first two experiments, we found that commission errors still occurred after a delay of 45 seconds between the no longer relevant cue and the window of opportunity to execute the intention. The two subsequent studies used a response delay of one or two seconds within each trial allowing additional time to suppress execution of the intention, which also did not significantly reduce commission errors. In the last experiment, two manipulations were used. In the first condition, an additional task was added during the experiment, which increased commission error occurrence. In contrast, facilitating implementation of the erroneous intention by a different key mapping did not increase error rates. Overall, the results indicate that commission errors are highly affected by the cognitive load during the cue presentation and therefore on first erroneous retrieval of the intention and are far less dependent on subsequent suppression processes. An adaption of the established suppression based dual mechanism account of commission errors is presented to accommodate all five experiments.

Schreibaufgaben und deren Einfluss auf den Schreibprozess

Martin Aßmann (Leibniz Universität Hannover)

Texte sind das Ergebnis eines Prozesses, der hohen kognitiven Aufwand erfordert. Die Textproduktion erfolgt schrittweise und ist durch mehrere Subprozesse (Planen, Formulieren und Revidieren; s. Hayes & Flower, 1980) gekennzeichnet. Neben kognitiven und sprachlichen Faktoren bestimmt insbesondere die Schreibaufgabe selbst die Qualität der entstehenden Schreibprodukte. In der Schreibprozessforschung existiert bislang jedoch keine Übersicht von Schreibaufgabentypen und deren Beziehung zu Teilprozessen (und Ergebnissen/Produkten) des Schreibprozesses. Um die bestehende Forschungslücke zu schließen, wird ein systematisches Review zum Aufbau einer Taxonomie von Schreibaufgaben der Schreibprozessforschung erstellt. Dazu werden relevante Artikel aus sieben einschlägigen Journals des Forschungsbereichs im Zeitraum von 2010 bis 2017 untersucht und mithilfe eines Bewertungsrasters kategorisiert. Von 232 gesichteten Forschungsartikeln berichten 88 Studien den Einsatz von Schreibaufgaben. Daraus können 17 unterschiedliche Schreibaufgabenkategorien gebildet werden, die sich mittels 63 kategorialen Variablen beschreiben lassen. Eine Aussage über (positive oder negative) Effekte von extrahierten Aufgabentypen auf einzelne Subprozesse des Schreibens lässt sich nachfolgend anhand der berichteten Prozessdaten aus den entsprechenden Erhebungsverfahren treffen. Dazu wird im zweiten Schritt das restriktive Auswahlkriterium der Schreibprozessdatenorientierung – und somit ein Ausschluss der Artikel, die Daten der Schreibproduktqualität berichten – angewendet. Durch die Reduzierung auf 15 Studien können lediglich 7 Aufgabenkategorien abgeleitet werden. Dies verdeutlicht zunehmend den Mangel an Schreibprozessdaten in den ursprünglich gebildeten Kategorien und erhöht ferner den Bedarf nach höherer Forschungsaktivität in diesem Bereich. Aus den Ergebnissen dieses Reviews wird folgendes Forschungsvorhaben skizziert: Um den Einfluss verschiedener Schreibaufgabentypen auf Subprozesse der Textproduktion hinreichend genau beschreiben zu können, sind kognitive Schreibprozessdaten für alle abgeleiteten Kategorien notwendig. Dazu werden kritische Experimente, die den Einfluss von Schreibaufgaben auf die abhängige Variable der Textqualität (zumeist in Form von Ratings) untersuchen, entsprechend adaptiert und repliziert. Hierzu wird ein Mix aus synchron aufzeichnenden Erhebungsmethoden, bestehend aus Keystroke Logging, digitalen Stift- und Schreibtablets, Eye-Tracking-Aufzeichnungen, Dual/Triple Tasks und/oder Lautem Denken verwendet.

Gaze Mapping und „areas of interest“ von Novizen und Experten bei Lösungsstrategien zur Messung von Bildkompetenz

Miles Tallon (Hochschule Döpfert Köln)

Bildkompetenz bezeichnet die Fähigkeit Bilder zu lesen, und sich mit und durch Bilder ausdrücken zu können. Wie jedoch misst man Bildkompetenz? Im Teilprojekt „Assessment“ des Verbundprojekts „Bildkompetenz in der kulturellen Bildung“ (BKKB) soll ein Messinstrument entwickelt und validiert werden, welches „Bildkompetenz“ erfasst. Es besteht bislang nur eine unzureichende Querverbindung zwischen Erkenntnissen und Verfahren der Wahrnehmungspsychologie und der kulturellen Bildungsforschung. Von der Bildungsforschung nur unzureichend integriert sind die biologischen Grundlagen und die kognitiven Prozesse, die der Bildinterpretation vorgelagert sind. Auf Seiten der Wahrnehmungspsychologie liegt kaum eine Systematik der ästhetischen Kategorien oder des visuellen Designs vor. Eine besondere Herausforderung der geplanten Studie besteht daher darin, ein empirisch überprüfbares Assessment Tool zu entwickeln, welches dem interdisziplinären Bildkompetenzbegriff gerecht wird. In der Studie soll erfasst werden, welche Lösungsstrategien Experten (Kunstpädagogen/innen) und Novizen (Schüler/innen der 9.Klasse) bei der Bearbeitung einer visuellen Aufgabe einsetzen. Wir präsentieren generische Aufgabenstrukturen für die Teilkompetenzen und erste Ansätze zur Vermessung. Das Lösungsverhalten soll mittels Eye tracking erfasst werden. Welche Suchstrategien führen zur erfolgreichen Lösung der Aufgaben? Wie groß sind die Unterschiede der Lösungswege in Form von Blicksprüngen oder „areas of interest“ (AOI) zwischen den Gruppen? Lassen sich in Abhängigkeit der Teilkompetenzen von Bildkompetenz unterschiedliche Lösungsstrategien abbilden? Weisen die im Eye tracking gewonnenen gaze durations auf die gleichen Bereiche (AOIs) als wichtig zur Lösung hin, wie a priori von Experten gedacht? Das Forschungsvorhaben soll diesen Fragen nachgehen, sie empirisch überprüfen und somit einen Beitrag der Klärung des Kompetenzbegriffs leisten.

Why Psychopaths do not Stand Back: Understanding Personal Space Violations through Equilibrium Theory

Robin Welsch (Johannes-Gutenberg-Universität Mainz)

Psychopathic traits are paired with interpersonal and affective deficits. This study examined the impact of psychopathy on interpersonal spatial behavior. To study spatial behavior under highly controlled conditions, participants were immersed into virtual reality. In our first experiment, participants approached a virtual person with angry or happy facial expression until a comfortable distance for conversation was reached (egocentric approach). In our second experiment, participants adjusted a comfortable distance between two avatars (exocentric approach). A student-sample was tested and we measured psychopathy via self-report. Our results suggest that regulation of interpersonal distance as a function of facial expression of the approached is impaired in psychopathy, although psychopathic individuals know how to regulate proper interpersonal distance in a dyad.

Der Einfluss impliziter Motive auf Aufmerksamkeitsorientierungsprozesse und assoziierte Lernprozesse

Kevin Janson (Friedrich-Alexander-Universität Erlangen-Nürnberg)

Das Promotionsprojekt soll das Zusammenwirken von Aufmerksamkeits-, Motivations- und Lernprozessen experimentell erforschen. Menschen richten ihre visuelle Aufmerksamkeit vor allem auf Reize mit belohnenden oder aversiven Qualitäten (s. g. attentional bias; Hikosaka, 2007; Mogg & Bradley, 1999). Welche Reize mit diesen Qualitäten assoziiert werden, bestimmt unter anderem das implizite Machtmotiv, eine nicht verbalisierbare, motivationale Disposition (Schultheiss, 2008). Entsprechend konnten motivmodulierte attentional biases in Bezug auf Dominanz- und Submissionssignale gezeigt werden (Schultheiss & Hale, 2007). Trotz bestehender Zusammenhänge anreizgesteuerter Lernprozesse mit impliziten Motiven und Aufmerksamkeitsorientierungsprozessen (Hikosaka, 2007; Schultheiss & Köllner, 2014), ist nicht klar, wie derartige attentional biases entstehen. In einer ersten Studie sollen Erkenntnisse zu motivmodulierten attentional biases anhand aktueller Methoden abgesichert werden. In zwei Folgestudien sollen motivmodulierte instrumentelle und klassische Konditionierungsprozesse als zugrundeliegende Mechanismen bei deren Entstehung identifiziert werden.

Neural correlates of error processing in a non-motor Simon task

Klara Sailer (Katholische Universität Eichstätt-Ingolstadt)

The error related negativity (Ne/ERN) and the error positivity (Pe) are two well-known neural correlates of error processing. Both can usually be observed after an erroneous response in speeded-choice tasks with the Ne/ERN peaking around 50 ms, and the Pe peaking around 300 – 400 ms after the response. The aim of our study was to investigate whether these neural correlates of error processing can be observed in a similar way for mental responses that occur without any overt response. This allows us to determine whether motor activity or motor conflict is a necessary precondition for these components to emerge. To this aim, we used a vertical Simon task where participants had to respond either in mind, thinking the words “up” or “down”, or with a corresponding button press. The participants had to indicate whether the response was correct or not after each trial. As event-related potentials cannot be time-locked to mental responses, we identified the Ne/ERN and Pe in stimulus-locked potentials. Our results indicate that the Ne/ERN and Pe can also be observed for non-motor responses, and therefore, that motor activity or motor conflict is not necessary for these neuronal correlates of error processing to emerge.

Learning in uncertainty: Neural markers of model-free and model-based learning in probabilistic environments

Franz Wurm (Katholische Universität Eichstätt-Ingolstadt)

In the present study we used ERPs to investigate feedback-related neural markers of model-free and model-based learning. In contrast to a model-free system, in which actions are habitual and stimulus-driven, a model-based learning system expresses flexible, goal-directed actions by mapping environmental contingencies via an internal world model. Only this model-based system should be able to generate distinct predictions that vary with the environmental uncertainty. Low uncertainty, allowing both model-free and model-based learning, should yield clear prediction errors and judgments on future choices regarding subjective expectations on outcome valence. High uncertainty, allowing only model-free learning, should yield contrasting effects. We hypothesized this pattern to be reflected in the Feedback-related Negativity (FRN) and the P3. Participants had to work through a modified two-stage Markov-Decision Paradigm consisting of two independent sets with uncertain transition contingencies. Contingencies were predictable in one set (75%), but random in the other (50%). We found clear evidence for both model-free and model-based behavior in predictable sets but only model-free learning in random sets. Both FRN and P3 amplitudes varied between the predictable and random sets. This suggests that neural markers of feedback processing are specifically modified by our experimental manipulation of transition contingencies. Additionally we found evidence for correlates of prediction errors generated by the two learning systems.

The influence of automatic spatial attention on feature biases in object correspondence

Madeleine Stepper (Eberhard Karls Universität Tübingen)

The sensory input that our visual system receives is ambiguous and needs to be interpreted. For example, if we want to keep track of a butterfly, it continuously moves around and sometimes even disappears behind trees or is occluded by conspecifics. Nevertheless, our visual system is able to establish associations between the individual images sampled across time and to maintain the identity of an object (e.g. the butterfly) even when it is changing its location or is not continuously visible. A variety of factors, including higher-level factors such as the scene context (Hein & Moore, 2014; He & Ooi, 1999) or visual working memory content (Hein, Hollingworth & Moore, 2013), can influence how this correspondence process is solved. It has therefore been suggested that attention might influence correspondence. To directly investigate the influence of spatial attention on correspondence we oriented attention automatically with peripheral cues to particular elements of the Ternus display (Ternus, 1926; Pikler 1917). This ambiguous apparent motion display consists of three elements presented next to each other and shifted by one element position from one frame to the other. Depending on how the visual system solves correspondence it can be perceived either as all elements moving together (group motion) or as one element jumping across the others. In addition to the classic Ternus display, in which all elements are identical, we used a biased Ternus display, in which the color of the elements was changed in such a way that the percept was biased towards element motion for one color and towards group motion for another color (competitive bias). We expected that a stronger weighting of the attended element's color and thereby its bias would lead to a change in the proportion of perceived group motion in the competitive biased Ternus display, but not in the classical Ternus display. The results, however, showed no effect of automatic attentional shifts on correspondence for both Ternus displays. This lack of an influence could indicate that automatic spatial attention operates at another processing level than correspondence and thus does not necessarily provide evidence against an attention mediated correspondence process.

Welche Faktoren beeinflussen kognitive Kontrolle im Multitasking?

Elisa Straub (Universität Freiburg)

Willentliche Handlung dient dem Erreichen eines bestimmten Ziels. In vielen Situationen sind wir jedoch auch gesteuert von Bedürfnis- und Motivationszuständen. Stehen diese im Konflikt zur Intention können Fehler auftreten. Um dies zu vermeiden bedarf es Kontrollsysteme, die perzeptuelle, motorische und emotionale Prozesse in Hinsicht auf das Erreichen eines bestimmten Ziels selektieren und steuern. Es stellt sich die Frage, welche kognitiven Mechanismen der Handlungssteuerung zu Grunde liegen und wie diese durch explizite Modelle ausgedrückt werden können. Im Fokus der vorliegenden Untersuchung steht eine der komplexesten kognitiven Leistungen des Menschen: die Handlungsplanung und Koordination multipler Aufgaben. Das übergeordnete Ziel besteht darin, Konflikt zweier konkurrierender Reaktionen zu vermindern um die gewählte Intention in eine Handlung umsetzen zu können. Eine Möglichkeit zur Untersuchung solcher Konflikte im Labor bietet der Stroop-Test, bei dem Probanden Farbwörter hinsichtlich ihrer Druckfarbe klassifizieren müssen. Diese können dabei entweder mit der semantischen Bedeutung der Farbwörter übereinstimmen (*kongruent*) oder im Widerspruch stehen (*inkongruent*). Typischerweise machen Probanden bei inkongruenten im Vergleich zu kongruenten Reizen mehr Fehler und benötigen mehr Zeit. Ein solcher *Kongruenzeffekt* zeigt zusätzlichen Kosten, die entstehen, wenn Irrelevantes kontrolliert wird. Mit der Analyse dynamischer Veränderungen des Kongruenzeffekts von einem Durchgang zum nächsten kann untersucht werden, wie Kontrolle reguliert wird. Probanden zeigen nach Durchgängen mit inkongruenten Reizen im darauf folgenden Durchgang geringere Kongruenzeffekte als nach kongruenten Reizen. Ein solcher *Konflikt-Adaptations-Effekt* demonstriert, dass kognitive Kontrolle verstärkt mobilisiert wird, wenn ein Reaktionskonflikt zuvor ausgelöst wurde. Die Frage, die sich nun stellt ist: Wie funktioniert kognitive Kontrolle im Multitasking - Ist der Konflikt-Adaptations-Effekt spezifisch für eine Aufgabe (Stroop-Stroop) oder zeigt sich ein Transfer über mehrere Aufgaben hinweg (Stroop-Flanker)? Bisherige Studien haben sowohl Evidenz für Spezifität, als auch für Transfer gezeigt. Damit bleibt unklar, welche Faktoren kognitive Kontrolle im Multitasking ausmachen. In meinem Promotionsvorhaben möchte ich untersuchen inwiefern Emotionen, Instruktion und Intention + x einen Einfluss auf die kognitiven Kontrollmechanismen bei multiplen Aufgaben nehmen.

The Integration of Task Effects in a Task Set and the Role of Anticipatory Saccades

Angelika Sommer (PH Weingarten)

In everyday life we are often confronted with competitive situational affordances. Our environment in which we interact may offer different tasks which are mentally represented in so called task sets which is the mental representation of the relevant external stimuli in order to execute a task. As Lukas et al. (2013) had shown in her study task effects elicited by specific responses may play a crucial role in action planning and action selection. In the present study a task switching paradigm was combined with a spatial response-compatibility paradigm. Additionally eye-tracking data were analyzed in order to further investigate the role of task effects in action planning. Pfeuffer et al (2016) found evidence for the monitoring function of eye movements in simple stimulus-response-effect associations. It is thus hypothesized that task-effect associations may also play a role in more complex task environments in the process of task selection, like in a task switching paradigm. Especially the question of whether task effects are anticipated on the task or on the response level will be discussed.

Reward and task difficulty: Sequential increases in reward prospect promote switching to the difficult task

Vanessa Jurczyk (Universität Regensburg)

Recent evidence from our lab suggests that reward does not only increase stability of behavior, but that specific reward schemes can also enhance flexible behavior. Using the task switching paradigm, it has been shown that an increase in reward prospect is associated with smaller switch costs and a higher proportion of voluntary switches – both of which can be seen as indices for increased flexibility. We were now interested whether this sequential reward effect is further moderated by task difficulty. In the present study, we therefore used the voluntary task switching with an easy and a difficult task (adapted from Yeung, 2010). We again varied the reward prospect for a given trial – thereby creating different reward sequences (increase, decrease, remain low, remain high). We also used the hybrid design of intermixed voluntary and cued task switch trials (see also Fröber & Dreisbach, 2016) that enabled us to both investigate switch costs and the voluntary switch rate. Motivation intensity theory by Brehm and Self (1989) predicts that the invested effort should increase with increasing task difficulty. Therefore, we hypothesized a rather counterintuitive interaction between task difficulty and reward sequence: The prospect of increasing reward should promote flexible behavior, especially so for the difficult task. That is, participants should specifically be inclined to switch to the difficult task, but not to the easy task, when reward prospect increases. Our results confirmed our predictions: The prospect of increasing reward promoted voluntary switching to the more difficult task. Theoretical implications as well as potential moderating variables are discussed.

Self-organized task switching

Victor Mittelstädt (Universität Freiburg)

Many studies have demonstrated that humans respond more slowly when switching than repeating tasks. So far, however, little is known about how we adapt to our individual task-switching performance limitations (i.e., switch costs) in our actual behavior. In the voluntary task switching paradigm (Arrington & Logan, 2004) subjects' task choice is restricted due to the global instructions (i.e., random task selection). We present a new paradigm to investigate self-organized task-switching. The key manipulation of our paradigm is that the chosen task appears delayed and this delay increases with task repetitions. Thus, if subjects choose to repeat a task, they have to wait longer for the stimulus and the stimulus-onset asynchrony (SOA) increases the more often they repeat. We conducted four experiments to investigate how subjects trade off their switch costs against the decreasing availability of the stimulus needed for a task repetition. Results showed that the tendency to avoid task switching was positively correlated with switch costs across subjects. This suggests that subjects took into account their individual switch costs when selecting tasks. Overall, the present studies demonstrate that our new paradigm is well-suited to investigate cognitive mechanisms involved in self-organized task-switching.

Workload-Indikation einer zukünftigen Mensch-Maschine-Schnittstelle im Fahrzeug in frühen Entwicklungsphasen: Validierung, Vergleich und Weiterentwicklung bestehender analytischer Methoden

Nicolai Pärsch (Hochschule der Medien Stuttgart)

Im Rahmen des Dissertationsprojekts sollen analytische Methoden zur Prognose der mentalen Belastung bei einer Mensch-Maschine-Schnittstelle (Human-Machine-Interface, kurz HMI) im Fahrzeug untersucht und weiterentwickelt werden. Zu diesem Zweck wird eine prototypische HMI aufgebaut und eine Reihe an Experimenten im Fahrsimulator durchgeführt. Die Experimente lassen sich in drei Phasen einteilen:

Phase 1:

- Evaluation bestehender analytischer Methoden zur Prognose von mentalem Workload

Phase 2:

- Weiterentwicklung eines analytischen Modells zur Erhöhung der Prognosegüte
- Identifikation von Gestaltungsfaktoren einer HMI zur Senkung des mentalen Workloads

Phase 3:

- Methodenvergleich von empirischen Messungen, analytischen Methoden und Expertenbeurteilungen zur Prognose von mentalem Workload

Im Kolloquium soll insbesondere Phase 1 ausführlicher vorgestellt und diskutiert werden.

Crowding depends on emotion associated with targets and flankers

Ferdinand Pittino (Universität Ulm)

The prospect of the present study was to investigate the influence of target and flanker emotion on crowding effects. Therefore, Landolt Rings with a certain opening direction were conditioned with neutral and those with the opposite direction with negative pictures. These conditioned stimuli were afterward used in a visual crowding task, in which the critical spacing (75% threshold) was assessed, for emotional targets as well as for emotional flankers. We observed smaller crowding effects for negatively relative to neutrally conditioned targets, indicating enhanced identification of negative stimuli. Additionally, we found larger crowding effects for negatively relative to neutrally conditioned flankers, that is, more interference with negative flankers. In conclusion, crowding effects are modulated by both target and flanker emotion, suggesting that semantic features survive crowding and influence recognition performance. The study demonstrates that evaluative conditioning can be used to study the effect of emotion on rather early perceptual processes.

Gaze Behavior in Combat Sports

Andrea Polzien (Universität Paderborn)

Introduction: In many team and combat sports, visual perception is of particular relevance for the anticipation of action intentions of team members and opponents. Therefore several studies examined athletes' gaze behavior in various kinds of sports. A meta-analysis by Mann and colleagues (2007) revealed that athletes use fewer fixations of longer duration compared to non-athletes. However, only a few heterogeneous studies investigated visual perception in combat sports. This study aimed to examine combat athletes' gaze behavior. **Method:** Twelve combat sports athletes (1 female, mean age 27.0, $SD = 6.1$) with an average of 12.7 years ($SD = 6.3$) of training experience in different combat sports and 12 non-athletes (3 female, 2 left-handed, mean age 23.1, $SD = 1.9$) with no experience in combat sports participated in the experiment. The participants were instructed to respond to pictures of a combat sport athlete on a screen. The pictures showed 4 distinct offensive techniques (straight kicks and punches with either the left or the right hand) at four different points in time during movement execution. For the purpose of inducing an apparent motion, another picture of the combat athlete standing in a fighting position was presented before the target picture. Each technique was assigned to one response button. The eye movements were recorded by an eye tracker. Number of fixations, fixation durations and reaction times were measured. **Results:** Mixed analysis of variance with the between-subjects factor expertise (non-athletes vs. athletes), and the within-subjects factor point in time revealed main effects of point in time for reaction time ($F_{1,233}, 18.488 = 22.166, p < .00, \eta^2 = .596$), fixation duration ($F_{1,779}, 24.902 = 15.318, p < .00, \eta^2 = .522$) and fixation rate ($F_{2,56}, 35.84 = 12.673, p < .00, \eta^2 = .475$). Participants responded slower and used more fixations of shorter duration while reacting to early points in time of movement execution compared to later ones. No significant group differences were found. However, the absolute results seem to indicate differences between combat athletes and non-athletes with regard to reaction times (1066 vs. 932 ms), fixation rates (2.4 vs. 2.0 fixations per minute) and fixation durations (432 vs. 347 ms). **Discussion:** Longer reaction times for pictures of the beginning of the movement might, on the one hand, indicate lack of experience with the movement. On the other hand, athletes might not be used to observe static postures of a movement during movement execution and dynamic information might have been missing. More fixations of shorter duration for early movement sequences might indicate participants' search for useful cues. The indicated differences between combat sport athletes and novices should be examined with a larger number of subjects in future studies

Die Repräsentation von Vorgangsbegriffen im auditiven und motorischen System

Margot Popp (Universität Ulm)

Das Repräsentationsformat von konzeptuellem Wissen im menschlichen Gehirn ist Thema einer aktuellen kontroversen Debatte in der Kognitionspsychologie und der kognitiven Neurowissenschaft. Hierbei haben sich zwei übergeordnete Erklärungsansätze gebildet. Ältere Theorien besagen, dass Begriffe in einer amodalen Art und Weise in einem einheitlichen System repräsentiert werden, welches Informationen unabhängig von Wahrnehmungs- und Handlungssystemen abspeichert. Die mentale Repräsentation von Begriffen erfolgt demnach symbolisch und abstrakt. Neuere Theorien, die sich aus Befunden der modernen neurowissenschaftlichen Forschung ableiten, bekräftigen dagegen die Idee einer „verkörperten“ Kognition (auch: Embodiment). Es wird angenommen, dass Begriffe in Abhängigkeit ihrer Modalität in den entsprechenden Kortextarealen verkörpert repräsentiert werden. Gedanken an ein konkretes Objekt oder eine abstrakte Entität lösen eine partielle Aktivierung genau der neuronalen Netzwerke aus, die auch reale sensomotorische Empfindungen abbilden. Gute Evidenz, die für die verkörperte Kognition spricht, liegt bereits für die mentale Repräsentation von handlungs- und akustikbezogenen Objektbegriffen vor. Im Vergleich dazu sind die empirischen Daten für durch Verben ausgedrückte Vorgänge bislang inkonsistent. Mit Hilfe zweier Elektroenzephalographie-Experimente, eines Psychophysik-Experiments und zweier Experimente mit funktioneller Magnetresonanztomographie wird daher die Repräsentation von Vorgangsbegriffen im auditiven und motorischen System untersucht. Hiermit sollen die erforderlichen typischen zeitlichen und räumlichen Signaturen der Begriffsverarbeitung charakterisiert und zudem funktionale Zusammenhänge zwischen Sensomotorik und konzeptuellem Wissen gezeigt werden. Relevant ist die vorliegende Fragestellung nicht nur für die Kognitionswissenschaft. Auch für andere Disziplinen wie Soziologie, Philosophie, Kulturwissenschaft oder Informatik wird die Frage nach dem Ausmaß der Beteiligung des Körpers an Denkprozessen immer interessanter.

Numbers in Space: How Depth Cues impact Number Perception

Steffen Theobald (Technische Universität Kaiserslautern)

When thinking about numbers, we usually imagine them written down or projected on a 2D surface, like a price label, calculator output or an excel file. While scenarios like this represent the majority of our interaction with numbers, situations where numbers are presented in a 3D environment are getting more and more common, like presentation of numbers in 3D computer games and VR, or superimposed on the environment by means like google glass. Since it has already been shown that visual size can interact with the perception of number size and that depth perception of distant items is strongly dependent on comparing the size of objects we perceive, we investigated if the combination of depth cues and number size can interact with each other. In our study we superimposed numbers of a fixed visual size on a varying background. This background was used to provide depth cues so that the visual size of the number appeared to change while actually staying the same to manipulate the aspect of magnitude. In a second experiment we changed the aspect of space by using the background to manipulate the apparent position of the observer. The depth cues were only presented in the parafoveal visual field while the foveal visual field only contained a white number on grey background to reduce the possibility of grouping and crowding effects. Depending on the task condition participants were asked to answer via button presses whether the stimulus was larger or smaller than 5 or about their position relative to the presented number. The presented background was either task irrelevant or relevant in form of an additional no-go task. Our results suggest that information about visual size does manipulate magnitude in a different way than information about space, indicating a process that takes place before the different formats of information get unified.

Who you touch is who you trust?

Ann-Katrin Wesslein (Eberhard Karls Universität Tübingen)

Soziale Interaktionen finden heutzutage vermehrt Computer- oder Smartphone-vermittelt statt. Anders als in face-to-face Situationen können hier nicht unmittelbar Berührungen eingesetzt werden, um Nähe herzustellen und Emotionen auszudrücken. Diese beeinflussen aber maßgeblich unser Verhalten: Bereits kurze Berührungen stärken prosoziale Verhaltensweisen und reduzieren das Stresslevel (z.B. Crusco & Wetzel, 1984; Ditzen et al., 2007). Auch bei der Exploration von Objekten spielt die haptische Exploration eine große Rolle: Die Berührung von Objekten hat einen positiven Effekt auf die Objektbewertung und erhöht den wahrgenommenen Besitz (Peck & Shu, 2009). Dies gilt auch im Kontext von Online-Shopping bei der Interaktion mit Bildern von Produkten via Touchscreen (vs. unter Verwendung einer Computermouse; Brasel & Gips, 2014). Bislang ist eine offene Frage, ob die Touchscreen-basierte Interaktion mit Bildern von Personen auch ähnliche Effekte haben kann wie echte zwischenmenschliche Berührungen. Als Annäherung an diese Fragestellung werden in der hier vorgestellten Studie erstmals Effekte der Interaktion mit Fotos von Personen via Touchscreen untersucht. Als abhängige Variable wird die Kooperationsbereitschaft in einem Social-Dilemma Game gemessen; getestet wird, ob die Kooperationsbereitschaft gegenüber unbekannten Personen davon abhängt, ob die Fotos der Personen lediglich betrachtet oder auch berührt wurden (within-participants). Individuelle Unterschiede in der Vorliebe, die Umwelt haptisch zu explorieren (need for touch; Nuszbaum, Voss, Klauer, & Betsch, 2010) werden berücksichtigt.

Does time production benefit from chronometric counting?

Sven Thönes (Johannes-Gutenberg-Universität Mainz)

It is common to use counting strategies in order to accurately produce short time intervals. But does counting indeed improve the accuracy (deviation of mean produced duration from veridical duration) and precision (variability of produced duration) of time productions in the range of seconds to minutes? Cognitive models of time perception indicate positive as well as negative effects of counting on duration judgments. In two experiments, we compared chronometric counting to intuitive timing (no counting) and to attentional control (simultaneously performing mental arithmetic). In Experiment 1, subjects had to produce time intervals of 60 s duration in a class-room setting. Counting did not improve the accuracy of time productions. To the contrary, productions tended to be most accurate in the intuitive timing condition and duration was over-produced in the conditions counting and mental arithmetic. Experiment 2 tested the effects of counting on time production of 10, 30, and 60-s intervals in a laboratory setting. Again, counting did not improve the accuracy of time production. However, counting had a positive effect on temporal precision, especially at the shortest duration of 10 s. As expected, mental arithmetic significantly impaired accuracy as well as precision and led to overproduction of duration. Based on the results from a third experiment, we rule out a potential word length-effect on time production (word length-effect due to the subvocal production of numbers containing multiple syllables) and discuss the results in terms of attentional processes.

Oculomotor action control in social and non-social information processing contexts

Eva Riechelmann (Julius-Maximilians-Universität Würzburg)

In accordance with ideomotor control theories efficient gaze control is assumed to be associated with the anticipation of its effects (i.e., the perception of the postsaccadic object), which requires the acquisition of learned associations between saccades (i.e., actions) and their visual effects. However, only few eye movement studies have addressed the underlying mechanisms of this phenomenon. While previous research predominantly focused on the investigation of non-social effect signals, the present study incorporated social (the perception of faces that respond to the participant's gaze with either direct vs. averted gaze) and non-social targets as effect signals. In two eye tracking experiments, we focused on the question of whether social information processing in the anticipation of saccadic action-effects (Experiment 1 and 2) is special, and on the impact of exogenously vs. endogenously triggered saccades when acquiring action-effect associations (Experiment 2). To examine the occurrence of anticipation, both experiments included congruency manipulations to prime or interfere with any anticipated representation of the subsequent effect signal. We hypothesized to observe congruency effects for both social and non-social stimuli as indicators of effect anticipation, with different temporal dynamics for social stimuli. The anticipated gaze type (direct vs. averted) was predicted to affect behavior in terms of a facilitating approach signal in the case of the potentially rewarding (direct gaze) stimulus. Data collection is still ongoing. Our results will serve to contribute to a better understanding of gaze control mechanisms and social gaze interaction.

How performance-contingent reward prospect modulates cognitive control: Enhanced usage and maintenance of non-predictive contextual cues

Carmen Hefer (Universität Regensburg)

Growing evidence suggests that performance-contingent reward promotes cognitive stability in terms of increased cue maintenance. In a recent study, Hefer and Dreisbach (2017) showed that this typical reward effect comes at the cost of decreased flexibility. Subjects assigned to the reward group perseverated in using contextual cues even when their predictive value changed from highly predictive to non-predictive. The aim of the present study was to investigate whether performance-contingent reward also impairs the flexibility to adapt to changed task conditions when the predictive value of contextual cues changes from non-predictive to highly predictive. To this end a modified version of the AX-continuous performance task was used. In this task, the cue A or B is followed by a probe X or Y resulting in AX, AY, BX, and BY trials. The letters B and Y are variables for any letter other than A or X. Only on AX trials, participants give a target response, otherwise a non-target response. In the AX-70 version, AX sequences occur with a frequency of 70%, the other sequences with 10% each. In the AX-40 version, the A-cue is followed by an X-probe and Y (variable)-probe with equal probability (AX-40%, AY-40%, BX-10%, BY-10%). Thus, in both versions the A-cue is predictive of the X-probe but only in the AX-70 version it is also predictive of the target-response. In two experiments the reward groups showed highly increased errors on AY trials already in the first AX-40 block. The results therefore are not suited to decide whether reward impairs the flexibility to adapt from non-predictive to predictive cues. Instead they show that reward enhances the usage of contextual information even when it is not helpful because it does not predict required actions but only events.

The muscle feedback from smiling makes you put many /i:/s into names for positive things

Susann Ullrich (Universität Erfurt)

Research in the field of phonological iconicity has revealed accumulating evidence for systematic relationships between attributes of objects and their names – contrary to the widespread linguistic assumption that this relationship be arbitrary. A big criticism, however, is that those studies mostly employ pseudo-names that could be biased in their selection. In the group of Prof. Rummer, a new active naming paradigm is being used to prevent such potential bias. A series of active naming studies for faces or objects showed that people consistently choose names containing the vowel /i:/ preferably for positive objects, and names with /o:/ for negative objects. The articulatory feedback hypothesis (Rummer et al., 2014), which suggests that strong neural associations between muscle movements during facial emotion display (in particular the smile/i-face and the antagonistic o-face) and articulation are responsible for these effects, offers a plausible explanation for those phenomena. However, those first explorative studies had not controlled for other potentially influential object attributes such as arousal, brightness, size or shape. Also the number of /i:/s and /o:/s in the German names of the shown objects could have confounded the results. Hence, in the most recent study, we gathered ratings of the dimensions of these object attributes and used them together with the vowel occurrences as extensive controls. 45 object pictures were chosen for each valence category (positive, negative, neutral) and 218 subjects produced new names for those objects. Again, /i:/s were preferably used in new names for objects with positive valence, and /o:/s in names for objects with negative valence. For the other vowels no significant valence effects were found. This strengthens the idea that this surprisingly robust vowel-valence link specifically found for vowels corresponding to the i- and o-face is based on the articulatory feedback hypothesis.

Implicit modality switching in a property selection task

Carla Elizabeth Contreras Saavedra (RWTH Aachen)

The theory of embodied cognition assumes that conceptual knowledge is grounded in the perceptual-motor system so that information about perceptual and motor aspects are important elements of the word's semantic representation (e.g., Barsalou, 2008). Thus, when processing words, semantically induced sensory or motor modalities (e.g., the word “loud” semantically implies the auditory modality whereas “yellow” mainly implies the visual modality) should be activated. When switching between semantically induced modalities, implicit modality switch costs (i.e., higher RT and error rates in modality switches than in modality repetitions, see, e.g., Pecher, Zeelenberg & Barsalou, 2003) can occur. In a first experiment was tested a new task for implicit modality switching. In this property selection task, participants had to decide which of two attributes (like loud and quiet for induced sensory modalities) or two action verbs (like grasping and catching for induced motor modalities) better fits a simultaneously presented object word. The experiments were performed in the native language (German). Two sensory blocks used stimuli inducing the auditory or gustatory modality, two others blocks used stimuli related to hand actions and mouth actions. The results show that the property selection task could be an effective task to produce implicit modality switch costs for sensory modalities as well as for motor modalities, but also indicates a possible relationship between the size of the implicit modality switch cost and the level of semantic complexity used in the stimuli. More specifically, a higher semantic complexity led to larger implicit modality switch costs. A high semantic complexity means that stimuli include a high number and variety of semantic fields (e.g., auditory stimuli induced semantics field like “means of transportation”, “music”, “sounds”, “animals”, etc.), while a low semantic complexity means that stimuli induce only one semantic field (e.g., gustatory stimuli implied the semantic field “food”). Two further experiments focus on this aspect of semantic complexity by using different levels of semantic complexity in blocks with implicit sensory switches. The results are expected to lead to a better understanding of the role of semantic complexity in language processing and, thus, to embodied language processing in general.

Priorisierung von Effektorsystemen in Doppelaufgaben: Evidenz aus dem PRP-Paradigma

Mareike Hoffmann (Julius-Maximilians-Universität Würzburg)

Neuste Forschungsergebnisse legen nahe, dass die kognitive Verarbeitung von zwei Reaktionen in unterschiedlichen Effektorsystemen bei Doppelaufgaben mit gleichzeitiger Stimuluspräsentation einem ordinalen Priorisierungsmuster folgt. Demnach werden okulomotorische Reaktionen über pedale, vokale, und manuelle Reaktionen priorisiert, während pedale Reaktionen sowohl über vokale als auch manuelle Reaktionen dominieren, was auf eine flexible Ressourcenzuteilung in Abhängigkeit der konkreten Effektorkombination hindeutet. Ein etabliertes Verfahren (neben der gleichzeitigen Stimuluspräsentation), um Mechanismen der Ressourcenzuteilung zwischen zwei Aufgaben zu untersuchen, ist das Paradigma der psychologischen Refraktärperiode (PRP). Hierbei wird der zeitliche Versatz (das sog. Stimulus Onset Asynchrony = SOA) zwischen zwei sequentiellen Stimuli variiert, auf die jeweils so schnell wie möglich mit zwei sequentiellen Reaktionen R1 und R2 geantwortet werden soll. Während R1 weitgehend unbeeinflusst von der SOA-Manipulation bleibt, führt eine Verkürzung des SOA in der Regel zu einer höheren Reaktionszeit von R2 (PRP-Effekt). Der PRP-Effekt wird dahingehend interpretiert, dass aufgrund eines kognitiven Engpasses die Verarbeitung von R2 nicht simultan zu R1 ablaufen kann, und es somit zu einer seriellen Verarbeitung mit Priorisierung von R1 kommt. Unklar ist bisher, inwiefern sich die Priorisierung von Effektorsystemen, die bei gleichzeitiger Stimuluspräsentation auftritt, auf die Ressourcenzuteilung zwischen R1 und R2 und damit die Priorisierung von R1 gegenüber R2 im PRP-Paradigma auswirkt. Diese Fragestellung wurde in der aktuellen Studie anhand von Doppelaufgaben mit vokalen und manuellen Reaktionen untersucht, die jeweils durch einen auditiven und einen visuellen Stimulus mit einem SOA von 50, 200, 400 oder 800 ms ausgelöst wurden. Die zentrale Manipulation bestand in der Realisierung beider Aufgabenreihenfolgen, um die PRP-Effekte (d.h. die Reaktionszeitdifferenz zwischen kurzem und langem SOA für R2) beider Effektorsysteme vergleichen zu können. Unterschiede im PRP-Effekt gäben demnach Aufschluss über den Einfluss von effektor-basierter Priorisierung auf die Ressourcenzuteilung zwischen sequentiellen Reaktionen. Weiterhin wurde die Zuordnung von Stimulus- zu Reaktions-Modalität variiert, um deren Rolle vom Einfluss der Effektorsysteme zu dissoziieren. In Zukunft soll dieses Vorgehen auch auf Doppelaufgaben mit okulomotorischen und manuellen, sowie okulomotorischen und vokalen Reaktionen ausgeweitet werden.

The sequence of attention- and task-switches

Julia Seibold (RWTH Aachen)

In an auditory attention-shifting paradigm, implicit task-switches were examined. Via headphones, participants heard two dichotically presented words - one spoken by a woman and one spoken by a man. A visual cue at the beginning of each trial indicated if participants had to attend to the male or to the female voice, or to the left or right ear. The stimulus-words were a spoken letter and a digit. When the to-be-attended stimulus was a letter, participants had to indicate by a left or right key-press if it was a consonant or a vowel, whereas for a digit, participants had to indicate if the digit was odd or even. Thus, the task repeated or switched from letter- to number categorization in subsequent trials, implicitly. The results revealed significant attention-shift costs and costs of implicit task-switches. However, whenever an attention-shift was required, the implicit task-switch costs were strongly reduced. The results suggest a rather mutual influence of attention-shifts and task switches, rather than a hierarchical structure.

Übersicht/Kontaktdaten

Nr.	Titel	Referent	Kontakt
1 st S.	Having a drink with Tchaikovsky: The crossmodal influence of background music on the taste of beverages.	Pia Hauck	hauckp@uni-mainz.de
1 st S.	Influences of information presentation on automatic decision-making: Söllner, Bröder, and Hilbig(2013) revisited	Sophie Scharf	soscharf@mail.uni-mannheim.de
1 st S.	Stereotype-reliance in source guessing: a stable cognitive trait?!	Liliane Wulff	lwulff@mail.uni-mannheim.de
2 nd S.	Construction of an Internal Reference in Stimulus Discrimination Experiments	Ruben Ellinghaus	ruben.ellinghaus@uni-tuebingen.de
2 nd S.	Einflussfaktoren auf distraktorbasierte Abrufprozesse: Stimulusintensität und Stimulussalienz	Ruth Freitag	freitagr@uni-trier.de
2 nd S.	Distraktor-Reaktionsbindungen: Sind alle Distraktoren gleich stark gebunden?	Tarini Singh	singh@uni-trier.de
S. I - P1	Time-based expectancy in temporally structured task switching: Underlying cognitive mechanisms	Stefanie Aufschnaiter	stefanie.aufschnaiter@psychologie.uni-freiburg.de
S. I - P2	Stimulus-Response Compatibility in the Presence of an Avatar	Christian Böffel	Christian.Boeffel@psych.rwth-aachen.de
S. I - P3	Ambient color does not affect cognitive performance and emotional state	Christoph Freiherr von Castell	castell@uni-mainz.de
S. I - P4	Modulation of Crowding Effects by Depth and Emotion	Lisa Eberhardt	lisa.eberhardt@uni-ulm.de
S. I - P5	Effect of contemplative rooms on the perception of time	Sonja Ehret	sonja.ehret@psychologie.uni-freiburg.de
S. I – P6	Exploring the origin of the number size congruency effect: Sensitivity or response bias?	Dennis Reike	reike@uni-potsdam.de
S. I – P7	Pupil Diameter Changes and Microsaccades: Two Indicators of Similar Underlying Activation?	Christoph Strauch	christoph.strauch@uni-ulm.de

3 rd S.	Identifying the locus of no-go based backward crosstalk: Evidence from an extended PRP paradigm	Moritz Durst	moritz.durst@psycho.uni-tuebingen.de
3 rd S.	Working Memory Support Facilitates the Generation of Free Choices	Christoph Naefgen	christoph.naefgen@uni-tuebingen.de
3 rd S.	Dual-Memory Retrieval Efficiency after Practice: Effects of Strategy Manipulations	Franziska Orscheschek	franziska.orscheschek@medicalschool-hamburg.de
3 rd S.	Commission Errors –Determined to do the wrong thing?	Philipp Schaper	philipp.schaper@uni-wuerzburg.de
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4 th S.	Gaze Mapping und „areas of interest“ von Novizen und Experten bei Lösungsstrategien zur Messung von Bildkompetenz	Miles Tallon	m.tallon@hs-doeper.de
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S. II – P4	Reward and task difficulty: Sequential increases in reward prospect promote switching to the difficult task	Vanessa Jurczyk	vanessa.jurczyk@psychologie.uni-regensburg.de
S. II – P5	Self-organized task switching	Victor Mittelstädt	victor.mittelstaedt@psychologie.uni-freiburg.de

S. II – P6	Workload-Indikation einer zukünftigen Mensch-Maschine-Schnittstelle im Fahrzeug in frühen Entwicklungsphasen: Validierung, Vergleich und Weiterentwicklung bestehender analytischer	Nicolai Pärsh	n.paersch@gmail.com
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