

# **JAHRESBERICHT 2013**

## **Allgemeine Psychologie und Methodologie**

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**Fakultät für Psychologie  
Universität Basel**

# JAHRESBERICHT 2013

## *Allgemeine Psychologie und Methodologie*

### **Mitarbeiterinnen und Mitarbeiter der Abteilung (per 31.12.2013)**

<i>Abteilungsleitung</i>	Prof. Dr. Klaus Opwis
<i>Sekretariat</i>	Dipl. Psych. Natalia Adamski
<i>Wissenschaftliche Mitarbeitende</i>	PD Dr. Iris-Katharina Penner Dr. Markus Stöcklin
<i>Assistierende</i>	Dipl. Psych. Natalia Adamski M.Sc. Silvia Heinz M.Sc. Martina Hubacher M.Sc. Markus Hug M.Sc. Elisa Mekler M.Sc. Mirjam Seckler Dr. Alexandre Tuch M.Sc. Dominik Zwahlen
<i>Hilfsassistierende</i>	B.Sc. Matthias Adler B.Sc. Florian Brühlmann B.Sc. Sebastian Hunziker B.Sc. Thomas Keller B.Sc. Patrick Kessler B.Sc. Anja Martig stud. psych. Livia Müller
<i>Lehrbeauftragte</i>	Dr. Javier Bargas-Avila (FS 2013, HS 2013) Prof. Dr. Andreas Gold (FS 2013) Christian Hübscher (FS 2013) Dr. Stefan Leuthold (HS 2013) Prof. Dr. Christian Rösler (FS 2013, HS 2013) Prof. Dr. Hans Spada (FS 2013)

## Kurze Chronologie des Jahres 2013

*Kurzer chronologisch geordneter Gesamtüberblick über bemerkenswerte Vorkommnisse im Jahr 2013 Sicht der Abteilung für Allgemeine Psychologie und Methodologie*

### *Januar 2013*

Die *Stefanie und Wolfgang Baumann Stiftung* verlängert das Promotionsstipendium für Milena Sotirova-Kohli zum Thema *Collective unconscious (archetypal) memory* (Förderung für 6 Monate mit CHF 10'000).

### *Februar 2013*

Die *Neue Zürcher Zeitung* (NZZ) verlängert die bestehende Projektzusammenarbeit mit Klaus Opwis und Markus Hug im Bereich der Mensch-Maschine-Interaktion (Förderung für 6 Monate mit CHF 45'000).

### *Juni 2013*

Am 28. und 29. Juni findet in Zürich der *2nd Conference of the International MS Cognition Society* unter der Leitung von Iris-Katharina Penner statt. Insgesamt nehmen rund 200 Spezialistinnen und Spezialisten aus 31 Ländern an der Konferenz teil, die u.a. von Bayer, Biogen, Genzyme, Novartis und Teva finanziell unterstützt wird.

### *September 2013*

Die *Neue Zürcher Zeitung* (NZZ) verlängert die bestehende Projektzusammenarbeit mit Klaus Opwis und Markus Hug im Bereich der Mensch-Maschine-Interaktion (Förderung für 4 Monate mit CHF 30'000).

## **Ehrungen/Auszeichnungen**

Iris-Katharina Penner wird für zwei Jahre zur Präsidentin der *International MS Cognition Society* gewählt (Juni 2013).

Die Bachelorarbeit von Katarzyna Iwona Hongler mit dem Titel *Is work-related mobile learning in public spaces effective? Acknowledging disruptions and human attention* wird im Rahmen des von MakingScienceNews ausgeschriebenen Wettbewerbs „Top-Bachelor Schweiz 2013“ mit dem 2. Platz ausgezeichnet (Oktober 2013).

## Personalia in 2013

### *August 2013*

Sharon Steinemann beendet ihre Tätigkeit als Hilfsassistentin in der Abteilung (und wechselt für zunächst sechs Monate nach YouTube in San Francisco, USA). Als neue Hilfsassistentin beginnen Anja Martig und Livia Joanna Müller ihre Tätigkeit in der Abteilung.

Dominik Zwahlen beginnt nach seinem erfolgreichen Studienabschluss als neuer Doktorand in der Abteilung.

### *Oktober 2013*

Alexandre Tuch kehrt von seinem Auslandsstipendium bei Professor Kasper Hornbæk, Department of Computer Science, Universität Kopenhagen (Dänemark), nach Basel zurück.

## Drittmittel

2013 konnten Drittmittel im Umfang von rund CHF 125'000 erfolgreich eingeworben werden, die insbesondere zur Finanzierung zusätzlicher Personalanstellungen (Lehrbeauftragte, Assistierende, Doktorierende, Hilfsassistenten) genutzt wurden.

## Lehrveranstaltungen

### *Frühlingssemester 2013*

#### *Bachelorstudium*

Forschungsmethoden und Statistik II (Propädeutische Vorlesung mit Übung; Stöcklin & Opwis)

Kognitive Neuropsychologie und Entwicklungsneuropsychologie (Penner)

Emotion, Motivation, Kommunikation (Spada, LA)

Lernschwierigkeiten: Ursachen, Diagnose, Prävention und Intervention (Gold, LA)

Empirisch-Experimentelles Projektseminar (Heinz, Hubacher & Mekler)

Wie schreibe ich eine Bachelorarbeit in der Mensch-Maschine-Interaktion?

(Heinz, Mekler, Opwis & Seckler)

Wie schreibe ich eine Bachelorarbeit in der kognitiven Neuropsychologie und

Entwicklungsneuropsychologie? (Hubacher, Opwis & Penner)

Einführung in die Analytische Psychologie C.G. Jung (Roesler, LA)

Praxis der analytischen Psychotherapie C.G. Jungs: Anwendung und Vertiefungen (Roesler, LA)

#### *Masterstudium*

Persuasives Design im Web: Wie man den User zu seinem Besten dressiert (Heinz & Mekler)

Aktuelle Forschungsthemen der Mensch-Maschine-Interaktion (Heinz, Mekler & Seckler)

Usability-Testing: Evaluation der Mensch-Maschine-Interaktion (Bargas-Avila)

Konzeption und Design von User Interfaces II (Hübscher, LA)

Praxis der empirischen Forschung: Komplexere varianzanalytische Designs (Stöcklin)  
E-Prime: Computerbasierte experimentelle Psychologie (Stöcklin)

### *Masterprojekte*

Kognitive Neuropsychologie und Entwicklungsneurologie (Opwis/Penner)  
Mensch Maschine Interaktion (Heinz/Mekler/Opwis/Seckler)

### *Doktoratskolloquium am 20. Februar 2013*

Determinants of digital game enjoyment (Elisa Mekler)  
The effects of goal orientation, content congruence and placement on memory of  
online banner advertising (Silvia Heinz)  
Komplexitätsreduktion im Designprozess am Beispiel eines Redesign  
Projekts (Mirjam Seckler & Christian Hübscher)  
Kognitives Training bei pädiatrischen MS-Patienten (Martina Hubacher).

### *Lehrauftrag an der Universität Fribourg*

Allgemeine Psychologie II (Opwis)

### *Herbstsemester 2013/14*

#### *Bachelorstudium*

Kognitive Psychologie I: Wahrnehmung, Gedächtnis (Propädeutische Vorlesung; Opwis)  
Forschungsmethoden & Statistik I (Propädeutische Vorlesung mit Übung; Stöcklin & Opwis)  
Einführung in die MMI (Tuch)  
Forschungsmethoden & Statistik III (Stöcklin & Opwis)  
Empirisch-Experimentelles Projektseminar (Heinz, Hubacher, Mekler)  
Wie schreibe ich eine Bachelorarbeit in der Mensch Maschine Interaktion?  
(Heinz, Mekler, Opwis & Orsini)  
Wie schreibe ich eine Bachelorarbeit in der kognitiven Neuropsychologie und  
Entwicklungsneurologie? (Hubacher, Opwis & Penner)  
Einführung in die Analytische Psychologie C.G. Jung (Roesler, LA)  
Praxis der analytischen Psychotherapie C.G. Jungs: Anwendung und Vertiefungen (Roesler, LA)

#### *Masterstudium*

Wahrnehmungsforschung aus kognitions- und entwicklungspsychologischer Sicht (Opwis)  
Experimentelle Ansätze in der Neuropsychologie über die Lebensspanne (Penner)  
Online Forschung in der Mensch-Maschine Interaktion (Seckler)  
Theoretische Grundlagen und Modelle der Mensch-Maschine-Interaktion (Leuthold)  
Aktuelle Forschungsthemen der Mensch-Maschine Interaktion (Heinz, Mekler & Orsini)  
Eye-Tracking Methoden in der Mensch-Maschine Interaktion (Heinz & Mekler)  
Praxis der empirischen Forschung: Strukturgleichungsmodelle (Stöcklin)

### *Masterprojekte*

Kognitive Neuropsychologie und Entwicklungsneurologie (Opwis/Penner)  
Mensch Maschine Interaktion (Heinz/Mekler/Opwis/Orsini)

### *Doktoratskolloquium am 25. September 2013*

Soziale Kognition und Neuropsychologie der Multiple Sklerose (Dominik Zwahlen)  
Cognitive profiles in patients with eating disorders (Natalia Adamski)  
FUS-Form Usability Scale: Entwicklung eines Kurzfragebogens zur Messung  
der Benutzerfreundlichekeit von Onlineformularen (Sébastien Orsini)  
Der Weg zum Partizipationserfolg: Motivationale Anreize in virtuellen  
Communities (Esther Federspiel)  
Human factors in aviation security X-ray screening (Marcia Mendes)

### *Master of Advanced Studies in Human Computer Interaction Design (MAS-HCID)*

Psychologie: Einführung in die Kognitive Psychologie (Opwis & Mekler)  
Übungsbetreuung (Seckler)

## Publikationen in 2013

### In der bibliometrischen Datenbank SCOPUS erfasste Artikel und Beiträge <sup>1</sup>

Achtnichts, L., Gonen, O., Rigotti, D.J., Babb, J.S., Naegelin, Y., Penner, I.-K., Bendfeldt, K., Hirsch, J., Amann, M., Kappos, L., & Gass, A. (2013). Global *N*-acetylaspartate concentration in benign and non-benign multiple sclerosis patients of long disease duration. *European Journal of Radiology*, 82, e848-e852. <sup>2</sup>

*Background and objective.* To examine whether clinically benign multiple sclerosis patients (BMS) show similar losses of their global *N*-acetylaspartate (NAA) neuronal marker relative to more clinically disabled patients of similar disease duration.

*Methods.* The whole-brain NAA concentration (WBNA) was acquired with whole-head non-localizing proton MR spectroscopy. Fractional brain parenchymal volume (fBPV), T2 and T1 lesion loads, were obtained from the MRI in: (i) 24 BMS patients: 23.1±7.2 years disease duration, median Expanded Disability Status Scale (EDSS) score of 2.0 (range: 0–3); (ii) 26 non-benign MS patients (non-BMS), 24.5±7.4 years disease duration, median EDSS of 4.0 (range: 3.5–6.5); (iii) 15 healthy controls.

*Results.* Controls' 12.4±2.3mM WBNA was significantly higher than the BMS's and non-BMS's 10.5±2.4 and 9.9±2.1 mM (both  $p < 0.02$ ), but the difference between the patients' groups was not ( $p > 0.4$ ). Likewise, the controls' 81.2±4.5% fBPV exceeded the BMS and non-BMS's 77.0±5.8% and 76.3±8.6% ( $p < 0.03$ ), which were also not different from one another ( $p > 0.7$ ). BMS patients' T1-hypointense lesion load, 2.1±2.2cm<sup>3</sup>, was not significantly different than the non-BMS's 4.1±5.4cm<sup>3</sup> ( $p > 0.08$ ) and T2-hyperintense loads: 6.0±5.7cm<sup>3</sup> and 8.7±7.8cm<sup>3</sup>, were also not different ( $p > 0.1$ ).

*Conclusions.* WBNA differentiates normal controls from MS patients but does not distinguish BMS from more disabled MS patients of similar disease duration. Nevertheless, all MS patients who remain RR for 15+ years suffered WBNA loss similar to the average RR MS population at fourfold shorter disease duration suggesting relative global neuronal sparing or leveling-off of the neurodegeneration rate.

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<sup>1</sup> Nachfolgende Angaben zu den einzelnen Zeitschriften sind entnommen dem *Journal Citation Reports (JCR) Science Edition* resp. *Social Science Edition* aus dem **ISI Web of Science** (Impact Factor der Zeitschrift / durchschnittlicher Impact Factor der letzten 5 Jahre / Kategorie: Rangplatz - Anzahl Zeitschriften - Quartil) respektive - nach dem doppelten Trennstrich (//) - dem *SCImago Journal & Country Rank Portal* auf der Grundlage von **SCOPUS** (Bereich/Schwerpunkt: Rangplatz - Anzahl Zeitschriften - Quartil).

*Erläuterung:* Beispielsweise hat die Zeitschrift *Computers in Human Behavior* laut JCR für das Jahr 2010 einen Impact Factor (IF) von 1.9. Der durchschnittliche IF der vorausgegangenen fünf Jahre (2006 bis 2010) beträgt 2.3. Die Zeitschrift ist im JCR in zwei verschiedenen Kategorien gelistet: In der Kategorie *Psychology, Experimental*, wo sie nach ihrem IF den Rangplatz 37 von den dort insgesamt 81 gelisteten Zeitschriften belegt und damit einen Rangplatz im 2. Quartil (Q2). Ebenfalls gelistet ist die Zeitschrift in der Kategorie *Psychology, Multidisciplinary*. Dort belegt sie mit ihrem Rangplatz 26 von insgesamt 120 Zeitschriften einen Platz im 1. Quartil (Q1). SCImago listet die Zeitschrift *Computers in Human Behavior* in drei verschiedenen Kategorien (Angaben für das Jahr 2010): Im Bereich (*subject area*) *Computer Science* und dort im Schwerpunkt (*subject category*) *Computer Science Applications* (Rangplatz 54 von 194 Zeitschriften, Q2); im Bereich *Psychology* und dort im Schwerpunkt *Developmental and Educational Psychology* (Rangplatz 29 von 91 Zeitschriften, Q2) sowie im Bereich *Psychology* und dort im Schwerpunkt *Experimental and Cognitive Psychology* (Rangplatz 36 von 53 Zeitschriften, Q3). Die Rankreihung erfolgt jeweils auf der Grundlage des *SCImago Journal Rank Indicator* (SJR), einem speziell normierten Mass für den Impact einer Zeitschrift auf Basis der Einträge in SCOPUS.

Durch Fettdruck im folgenden hervorgehoben sind **Rangplätze im 1. Quartil (Q1)**.

<sup>2</sup>  $IF(2012) = 2.5 / IF(5\text{-Year}) = 2.6 / \textit{Radiology, Nuclear Medicine \& Medical Imaging}: 41 - 120 - Q2 // \textit{Medicine/Radiology, Nuclear Medicine and Imaging}: 36 - 179 - Q1.$

Bromundt, V., Wirz-Justice, A., Kyburz, S., Opwis, K., Dammann, G., Cajochen, C. (2013). Circadian sleep-wake, well-being and light treatment in borderline personality disorder. *Journal of Personality Disorders*, 27, 680-696. <sup>3</sup>

Individuals with borderline personality disorder (BPD) frequently suffer from sleep disturbances. The authors investigated circadian rhythms, sleep, and well-being in women with BPD in their habitual life conditions during 3 weeks with morning light therapy (LT) and 3 weeks without LT (oLT). Sleep-wake cycles were measured using wrist actimetry, proximal skin temperature as an indirect index of relaxation, as well as weekly salivary melatonin to document the internal circadian rhythm phase. Questionnaires assessed clinical state throughout the 6-week protocol. Ten matched healthy women followed the same 6-week protocol without light treatment. Women with BPD had significantly worse subjective sleep quality and reduced daytime alertness compared to controls. Sleep-wake cycles in BPD ranged from highly disturbed to extremely regular patterns. Melatonin and proximal skin temperature profiles revealed appropriate synchronization of the circadian system with the sleep-wake cycle in most BPD women and in all controls. Morning LT significantly phase-advanced activity in BPD compared to oLT, shortened sleep duration, decreased movement time, and increased skin temperature during sleep (a marker of relaxation). Although general depression scores and borderline symptoms did not change, daytime alertness improved with morning LT, and atypical depression scores were attenuated. Morning LT is a potential adjunct treatment for BPD.

Datta, A. N., Oser, N., Bauder, F., Maier, O., Martin, F., Ramelli, G. P., Steinlin, M., Weber, P. & Penner, I.-K. (2013). Cognitive impairment and cortical reorganization in children with benign epilepsy with centrotemporal spikes. *Epilepsia*, 54, 487-494. <sup>4</sup>

Purpose Benign epilepsy with centrotemporal spikes (BECTS) is associated with mild cognitive deficits, especially language impairment. This study aimed to clarify whether children with BECTS with left- or right-hemispheric, or bilateral focus have specific neuropsychological language deficits when compared to healthy controls, whether these deficits correlate functionally with language network organization (typical vs. atypical), and whether cofactors such as duration, handedness, and medication have a relevant impact on language reorganization processes. Methods Twenty-seven patients and 19 healthy controls were examined with several neuropsychological tests (German version of the Wechsler Intelligence Scale for Children [WISC-IV], Regensburger verbal fluency test [RWT], Corsiblock forward and backward and Hand-Dominanz-Test [HDT]) and with two language paradigms on functional magnetic resonance imaging (fMRI): silent reading of word-pairs and silent generation of simple sentences. Key Findings Although neuropsychological test results only differed by trend between BECTS patients and controls, language laterality indices (LIs) in fMRI were significantly lower in patients than in controls. In particular, the anterior language network with Broca's area and the supplementary motor area (SMA) revealed the lowest LIs and showed the most bilateral or right hemispheric activations in the sentence generation task. Medication and duration of epilepsy did not have any significant effect on language reorganization and patients' performances. Significance Language reorganization in BECTS patients takes place in bilateral or right hemispheric language networks, with a strong focus in anterior language regions. These functional changes can be interpreted as important compensatory strategies of the central nervous system (CNS) to stabilize cognitive, especially language performance.

Datta, A. N., Oser, N., Ramelli, G. P., Gobbin, N. Z., Lantz, G., Penner, I.-K. & Weber, P. (2013). BECTS evolving to Landau-Kleffner Syndrome and back by subsequent recovery: A longitudinal language reorganization case study using fMRI, source EEG, and neuropsychological testing. *Epilepsy & Behavior*, 27, 107-114. <sup>5</sup>

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<sup>3</sup> IF(2012) = 3.0 / IF(5-Year) = 3.6 / *Psychiatry*: 28 – 121 – Q1 // *Medicine/Psychiatry and Mental Health*: 16 – 354 – Q1.

<sup>4</sup> IF(2012) = 3.9 / IF(5-Year) = 4.0 / *Clinical Neurology*: 33 – 193 – Q1 // *Medicine/Neurology (clinical)*: 14 – 248 – Q1.

<sup>5</sup> IF(2012) = 1.8 / IF(5-Year) = 2.1 / *Clinical Neurology*: 110 – 193 – Q3 / *Behavioral Sciences*: 36 – 49 – Q3 / *Psychiatry*: 74 – 135 – Q3 // *Medicine/Neurology (clinical)*: 67 – 248 – Q2.



By means of a longitudinal case study, we demonstrated the course of cerebral reorganization of language representation due to epilepsy in a child with benign epilepsy with centro-temporal spikes (BECTS) evolving to Landau Kleffner Syndrome (LKS) and returning to BED'S.

The child underwent the following procedures at the ages of 8.2, 8.6, and 9.3 years: 3D source EEG imaging, language fMRI (sentence generation and reading), and neuropsychological testing. He had a follow-up testing at the age of 10.8 years. Further, 24-h EEGs were regularly performed.

At the age of around 8 years, the child was diagnosed initially with left-hemispheric BED'S, which evolved to LKS with continuous bilateral discharges. In addition, 3D source imaging data revealed a left anterior temporal focus with a spreading to the right parietal and left centro-parietal areas. The patient had verbal agnosia with poor verbal yet good performance indices. Functional magnetic resonance imaging (fMRI) showed a left-hemispheric reading network but sentence generation was impossible to perform. After initiation of adequate treatment, continuous discharges disappeared, and only very rare left-hemispheric centro-temporal spikes remained. Verbal IQ and performance IQ increased at the age of 8.6 years. Functional magnetic resonance imaging showed, at this time, a right-hemispheric language activation pattern for sentence generation and reading. At the ages of 9.3 and 10.8 years, language tasks remained right-hemispheric and verbal IQ remained stable, but right-hemispheric non-verbal functions decreased due to possible crowding-out mechanisms.

Orsini, S., Opwis, K. & Bargas-Avila, J. A. (2013). Response to the reviews on Bargas-Avila et al. (2009) – Intranet satisfaction questionnaire: Development and validation of a questionnaire to measure user satisfaction with the intranet. *Interacting with Computers*, 25, 304-306.<sup>6</sup>

This article contains the response to the reviews regarding the development and validation of the Intranet satisfaction questionnaire (ISQ), which measures user satisfaction with the Intranet. Where appropriate additional data analysis and interpretation is provided, the data show further evidence for the good validity, reliability and sensitivity of this tool. In addition, we provide a short preview of a follow-up publication and show that the ISQ can differentiate effectively between bad and good Intranets.

Papadopoulou, A., Müller-Lenke, N., Naegelin, Y., Kalt, G., Bendfeldt, K., Kuster, P., Stoecklin, M., Gass, A., Sprenger, T., Radue, E.W., Kappos, L. & Penner, I.-K. (2013). Contribution of cortical and white matter lesions to cognitive impairment in multiple sclerosis. *Multiple Sclerosis Journal*, 19, 1290-1296.<sup>7</sup>

*Background.* Cortical lesions (CLs) have been reported to be a better predictor for cognitive impairment than white matter (WM) lesions in relapsing–remitting multiple sclerosis (RRMS).

*Objectives.* The objectives of this article are to investigate the contribution of CLs and WM lesions to cognitive impairment in 91 patients with MS and clinically isolated syndrome, and to test potential associations of CLs and WM lesions with fatigue and depression.

*Methods.* Lesions were scored and segmented on 3D double inversion recovery sequences, according to their location (cortical, WM). Normalised grey matter volume was also determined. Cognitive performance was assessed with the SDMT and PASAT-3, fatigue with the FSMC and depression with the German version of the CES-D.

*Results.* CL volume did not correlate with fatigue or depression, but correlated significantly with both neuropsychological outcome measures: PASAT-3 ( $r = -0.275$ ,  $p = 0.009$ ) and SDMT ( $r = -0.377$ ,  $p < 0.001$ ). Multiple regression analyses with age, WM lesions, CLs and GM volume as independent variables, however, did not reveal CL volume as a significant predictor of neuropsychological outcomes, whereas WM lesion volume significantly predicted SDMT and by trend PASAT performance.

*Conclusions.* These findings suggest a role of WM lesions in the development of cognitive deficits, especially information-processing speed, which may be higher than previously assumed.

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<sup>6</sup> IF(2012) = 1.2 / IF(5-Year) = 1.5 / *Ergonomics*: 8 – 16 – Q3 // *Computer Science/ Human-Computer Interaction*: 12 – 45 – Q2.

<sup>7</sup> IF(2012) = 4.5 / IF(5-Year) = 4.0 / *Clinical Neurology*: 26 – 193 – Q1 // *Medicine/Neurology (clinical)*: 24 – 248 – Q1.

Penner, I.K., Hubacher, M., Rasenack, M., Sprenger, T., Weber, P. & Naegelin, Y. (2013). Utility of neuropsychological testing for guiding treatment decisions in paediatric multiple sclerosis. *Multiple Sclerosis Journal*, 19, 366-368.<sup>8</sup>

In the past years, there has been growing awareness about childhood onset multiple sclerosis (MS) and the relevance of psychosocial aspects such as cognitive disturbances, fatigue and depression in this population. We describe a case of a 16-year-old patient with relapsing–remitting multiple sclerosis (RRMS) who presented at our clinic with severe fatigue symptoms and who underwent repeated neuropsychological examinations. A sudden significant slowing indicated a new relapse while neurological examination did not. This case highlights the high sensitivity and clinical relevance of neuropsychological testing in patients with juvenile MS even in the context of treatment decisions.

Pirotta, R., Jeanmonod, D., McAleese, S., Auffenberg, C., Opwis, K., Jenewein, J. & Martin-Soelch, C. (2013). Cognitive functioning, emotional processing, mood and personality variables before and after stereotactic surgery: A study of eight cases with chronic neuropathic pain. *Neurosurgery*, 73, 121-128.<sup>9</sup>

*Background.* Stereotactic central lateral thalamotomy (CLT) has been applied as a treatment for chronic intractable neuropathic pain. However, it is not clear whether this intervention influences the emotional and cognitive impairments observed in patients who have chronic neuropathic pain.

*Objective.* To investigate neuropsychological functions and emotional processing in patients with chronic neuropathic pain compared with healthy volunteers and to explore the neuropsychiatric effect of the CLT.

*Methods.* We investigated pain ratings, cognitive functions, emotional processes, and personality variables before and after surgery in 8 patients with intractable neuropathic pain. Patients were tested before and 3 months after CLT by the use of neuropsychological tests; clinical scales for depression, anxiety, anhedonia, and anger regulation; a personality test; and 2 experimental tasks testing the theory of mind as well as the ability to recognize facial emotional expressions. Nine age- and sex-matched control subjects were tested once using the same procedure.

*Results.* The comparison of the patient group before surgery with the control group evidenced significant differences on the cognitive assessments, the depression and anxiety scores, as well as on the somatic complaint subscale of the personality test. Three months after CLT, patients experienced a significant improvement in their depression scores. There were no additional postsurgical cognitive impairments.

*Conclusion.* For our patients with chronic neuropathic pain, CLT provided pain relief and reduction of their depression scores without causing postsurgical cognitive impairments.

Reimann, G., Stöcklin, M., Lavalee, K., Gut, J., Frischknecht, M.-C. & Grob, A. (2013). Cognitive and motivational profile shape predicts mathematical skills over and above profile level. *Psychology in the Schools*, 50, 37-56.<sup>10</sup>

The interpretation of subtest profiles from intelligence testing remains popular among many practitioners who use subtest performance to draw diagnostic conclusions, in spite of criticism by some researchers, who point to the low reliability and predictive validity of subtest scores in predicting achievement outcomes. Prior research outlines two approaches to the study of subtest variation: the examination of interindividual variation in specific cognitive domains or subtests as compared to a standard sample, and the examination of intraindividual strengths and weaknesses, regardless of overall level. The present study seeks to add to knowledge in this field with data from 567 children ages 5 to 10 years who exhibit meaningful subtest variation on a new test of intellectual abilities. Results from the present sample point to statistically significant utility, with small to medium effects, of intraindividual cognitive and motivational profile shape over and above profile level in predicting mathematical skills. We discuss implications for school psychological and educational assessment research.

<sup>8</sup> IF(2012) = 4.5 / IF(5-Year) = 4.0 / *Clinical Neurology*: 26 – 193 – Q1 // *Medicine/Neurology (clinical)*: 24 – 248 – Q1.

<sup>9</sup> IF(2012) = 2.5 / IF(5-Year) = 3.6 / *Clinical Neurology*: 80 – 193 – Q2 / *Surgery*: 37 – 199 – Q1 // *Medicine/Neurology (clinical)*: 45 – 248 – Q1.

<sup>10</sup> IF(2011) = 0.9 / IF(5-Year) = 1.2 / *Psychology, Educational*: 34 – 51 – Q3 // *Psychology (miscellaneous)*: 193 – 359 – Q2.

Roth, S. P., Tuch, A. N., Mekler, E. D. Bargas-Avila, J. & Opwis, K. (2013). Location matters, especially for non-salient features: An eye-tracking study on the effects of web object placement on different types of websites. *International Journal of Human Computer Studies*, 71, 228-235.<sup>11</sup>

Users have clear expectations of where web objects are located on a web page. Studies conducted with manipulated, fictitious websites showed that web objects placed according to user expectations are found faster and remembered more easily. Whether this is also true for existing websites has not yet been examined. The present study investigates the relation between location typicality and efficiency in finding target web objects in online shops, online newspapers, and company web pages. Forty participants attended a within-subject eye-tracking experiment. Typical web object placement led to fewer fixations and participants found target web objects faster. However, some web objects were less sensitive to location typicality, if they were more visually salient and conformed to user expectations in appearance. Placing web objects at expected locations and designing their appearance according to user expectations facilitates orientation, which is beneficial for first impressions and the overall user experience of websites. Methods: Seventeen boys with diagnosed combined epilepsy/ADHD, 15 boys with developmental ADHD, and 15 healthy controls (aged 8–14 years) performed on working memory tasks (N-back) while brain activation was recorded using functional magnetic resonance imaging. Each patient was tested twice: once after the intake of methylphenidate and once without in a counterbalanced order.

Stangel, M., Penner, I.-K., Kallmann, B. A., Lukas, C., Kieseier, B. C., & Gold, R. (2013). Multiple Sclerosis Decision Model (MSDM): Entwicklung eines Mehrfaktorenmodells zur Beurteilung des Therapie- und Krankheitsverlaufs bei schubförmiger Multipler Sklerose. *Aktuelle Neurologie*, 40, 486-493.<sup>12</sup>

Die Einführung neuer und potenter Therapeutika für die Behandlung der schubförmigen Multiplen Sklerose (MS) hat die Ansprüche an den Therapieerfolg gesteigert. Eine alleinige Reduktion der Schubrate ist nicht mehr ausreichend, sondern das Ziel sollte eine „Freiheit von klinisch relevanter Krankheitsaktivität“ sein. Eine allgemein akzeptierte Definition liegt derzeit noch nicht vor. Ein deutsches Expertengremium formulierte hierzu die Forderung, dass ein solcher Parameter neben der Schubrate, Behinderungsprogression und MRT-Parametern auch neuropsychologische Kriterien und Lebensqualität eingeschlossen werden sollten. Wie dies unter Alltagsbedingungen gemessen werden kann, bedarf einer weiteren Präzisierung. Um die Untersuchungen standardisiert, zeitökonomisch und schematisiert durchzuführen, wird hier ein Mehrfaktorenmodell (Multiple Sclerosis Decision Model, MSDM) vorgeschlagen, welches die Domänen „Schub“, „Behinderungsprogression“, „MRT“ und „Neuropsychologie“ beinhaltet. Die vorgeschlagenen Tests bilden die Komplexität der Erkrankung auch in frühen Stadien ab, in denen eine Progression mit z.B. der EDSS (Expanded Disability Status Scale) nur schwer zu erfassen ist. Das MSDM soll eine Hilfe für Therapieentscheidungen darstellen und ein Therapieversagen frühzeitig anzeigen. Prospektive Untersuchungen sind erforderlich, um zu prüfen, ob mittels dieses Instruments zum Krankheitsmonitoring tatsächlich eine effektivere Behandlung und schnellere Krankheitsstabilisierung erreicht werden kann.

Svenningsson, A., Falk, E., Celius, E. G., Fuchs, S., Schreiber, K. Berko, S., Sun, J. & Penner, I.-K. (2013). Natalizumab Treatment Reduces Fatigue in Multiple Sclerosis. Results from the TYNERGY Trial; A Study in the Real Life Setting. *Plos One*, 8 (3), 8 pages.<sup>13</sup>

Fatigue is a significant symptom in multiple sclerosis (MS) patients. First-generation disease modifying therapies (DMTs) are at best moderately effective to improve fatigue. Observations from small cohorts have indicated that natalizumab, an antibody targeting VLA-4, may reduce MS-related fatigue. The TYNERGY study aimed to further evaluate the effects of natalizumab treatment on MS-related fatigue. In this one-armed clinical trial including 195 MS patients, natalizumab was prescribed in a real-life setting, and a validated questionnaire, the Fatigue Scale for

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<sup>11</sup> IF(2012) = 1.4 / IF(5-Year) = 2.0 / *Ergonomics*: 4 – 16 – Q2 / *Psychology, Multidisciplinary*: 44 – 126 – Q2 // *Computer Science/Artificial Intelligence*: 41 – 109 – Q2 / *Computer Science/Human Computer Interaction*: 14 – 45 – Q2 / *Psychology/Experimental and Cognitive Psychology*: 17 – 63 – Q2.

<sup>12</sup> IF(2012) = 0.3 / IF(5-Year) = 0.2 / *Clinical Neurology*: 183 – 193 – Q4 / *Neurosciences*: 244 – 252 – Q4 // *Medicine/Neurology (clinical)*: 197 – 248 – Q4.

<sup>13</sup> IF(2012) = 3.7 / IF(5-Year) = 4.2 / *Multidisciplinary Sciences*: 7 – 56 – Q1 // *Multidisciplinary*: 5 – 81 – Q1.

Motor and Cognitive functions (FSMC), was used both before and after 12 months of treatment to evaluate a possible change in the fatigue experienced by the patients. In the treated cohort all measured variables, that is, fatigue score, quality of life, sleepiness, depression, cognition, and disability progression were improved from baseline (all p values < 0.0001). Walking speed as measured by the six-minute walk-test also increased at month 12 (p = 0.0016). All patients were aware of the nature of the treatment agent, and of the study outcomes.

Conclusion: Natalizumab, as used in a real-life setting, might improve MS-related fatigue based on the results from this one-armed un-controlled stud. Also other parameters related to patients' quality of life seemed to improve with natalizumab treatment.

Tuch, A. N., Trusell, A. N., & Hornbaek, K. (2013). Analyzing users' narratives to understand experience with interactive products (Paper presented at the 31st Annual CHI Conference on Human Factors in Computing Systems, CHI 2013, 27. 4. – 2. 5. 2013, Paris, France). *Conference on Human Factors in Computing Systems – Proceedings 2013, 2079-2088*.<sup>14</sup>

Recent research in user experience (UX) has studied narratives, users' account of their interaction with technology. It has emphasized specific constructs (e.g., affect, needs, hedonics) and their interrelation, but rarely analyzed the content of the narratives. We analyze the content and structure of 691 user-generated narratives on positive and negative experiences with technology. We use a multi-method approach consisting of manual (structural analysis of narratives) as well as of automated content analysis methods (psycholinguistic analysis and machine learning). These analyses show converging evidence that positive narratives predominantly concern social aspects such as family and friends. In addition, technology is positively experienced when it enables users to do things more efficiently or in a new way. In contrast, negative narratives often express anger and frustration due to technological failures. Our multi-method approach illustrates the potential of automated (as opposed to manual) content analysis methods for studying text-based experience reports.

### **Weitere peer reviewed Zeitschriftenartikel und Beiträge in internationalen Conference Proceedings mit Peer-Review (nicht in der bibliometrischen Datenbank SCOPUS erfasst)**

Heinz, S., Hug, M. Nugaeva, C. & Opwis, K. (2013). Online Ad banners: The effects of goal orientation and content congruence on memory. *CHI '13 Extended Abstracts on Human Factors in Computing Systems* (CHI 2013, Paris, 27. April - 2. May 2013), 1875-1880.

Banner blindness, the phenomenon that the user will consciously or unconsciously ignore online banners while navigating a certain website, is a big problem for marketers and has been studied in the past. We present a study that tests the hypothesis whether the user's memory (recall and recognition) is influenced by the user's goal orientation during navigation on a website and whether it is mediated by the correspondence of the banner content and website content (congruence). Participants in an explorative orientation show better memory for banners than users in a broad or narrow goal orientation. No differences between the congruent and incongruent conditions with regard to recall measures were found but the congruent condition yields slightly better recognition rates. Based on these findings further implications and research possibilities are discussed.

Hubacher, M., Weiland, M., Calabrese, P., Stoppe, G., Stöcklin, M., Fischer-Barnicol, D., Opwis, K. & Penner, I.-K. (2013). Working memory training in patients with chronic schizophrenia: A pilot study. *Psychiatry Journal*, 2013, 8 pages (<http://dx.doi.org/10.1155/2013/154867>).

*Background.* There is evidence that patients with schizophrenia suffer from decline in working memory performance with consequences for psychosocial outcome.

*Objective.* To evaluate the efficacy of a computerized working memory training program (*BrainStim*) in patients with chronic schizophrenia.

*Methods.* Twenty-nine inpatients with chronic schizophrenia were assigned to either the intervention group receiving working memory training (N=15) or the control group without intervention (N=14). Training was

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<sup>14</sup> Keine Angaben vorhanden // *Computer Science (miscellaneous): 59 – 192 – Q2 / Social Sciences (miscellaneous): 85 – 408 – Q1.*

performed four times a week for 45 minutes during four weeks under neuropsychological supervision. At baseline and followup all participants underwent neuropsychological testing.

*Results.* Pre-post comparisons of neuropsychological measures showed improvements in visual and verbal working memories and visual short-term memory with small and large effect sizes in the intervention group. In contrast, the control group showed decreased performance in verbal working memory and only slight changes in visual working memory and visual and verbal short-term memories after 4 weeks. Analyses of training profiles during application of BrainStim revealed increased performance over the 4-week training period.

*Conclusions.* The applied training tool BrainStim improved working memory and short-term memory in patients with chronic schizophrenia. The present study implies that chronic schizophrenic patients can benefit from computerized cognitive remediation training of working memory in a clinical setting.

Hug, M., Suter, N., Mekler, E. & Opwis, K. (2013). Ads suit up! Effects of website and advertiser credibility on consumer responses to banners ads. *CHI '13 Extended Abstracts on Human Factors in Computing Systems* (Paris, 27. April - 2. May 2013), 1803-1808.

Effective communication on the internet is becoming increasingly difficult for advertisers, as they have to compete with many others for user attention. We examine the role of source credibility (specifically website and advertiser credibility) as a means to increase advertising effectiveness. Our results showed that website credibility affects ad credibility, whereas advertiser credibility also enhances attitude toward the brand, and users' purchase intention. Based on these findings, we discuss implications and opportunities for future research on online advertising.

Mekler, E., Brühlmann, F., Opwis, K. & Tuch, A. (2013). Disassembling gamification: The effects of points and meaning on user motivation and performance. *CHI '13 Extended Abstracts on Human Factors in Computing Systems* (Paris, 27. April - 2. May 2013), 1137-1142.

Interest in gamification is growing steadily. But as the underlying mechanisms of gamification are not well understood yet, a closer examination of a gamified activity's meaning and individual game design elements may provide more insights. We examine the effects of points – a basic element of gamification, – and meaningful framing – acknowledging participants' contribution to a scientific cause, – on intrinsic motivation and performance in an online image annotation task. Based on these findings, we discuss implications and opportunities for future research on gamification.

Mekler, E., Brühlmann, F., Opwis, K. & Tuch, A. (2013). Do points, levels and leaderboards harm intrinsic motivation? An empirical analysis of common gamification elements. *Gamification 2013: Proceedings of the First International Conference on Gameful Design, Research, and Applications* (Stratford, Ontario, Canada, 2.-4. October 2013), 66-73.

It is heavily debated within the gamification community whether specific game elements may actually undermine users' intrinsic motivation. This online experiment examined the effects of three commonly employed game design elements – points, leaderboard, levels – on users' performance, intrinsic motivation, perceived autonomy and competence in an image annotation task. Implementation of these game elements significantly increased performance, but did not affect perceived autonomy, competence or intrinsic motivation. Our findings suggest that points, levels and leaderboards by themselves neither make nor break users' intrinsic motivation in non-game contexts. Instead, it is assumed that they act as progress indicators, guiding and enhancing user performance. While more research on the contextual factors that may potentially mediate the effects of game elements on intrinsic motivation is required, it seems that the implementation of points, levels, and leaderboards is a viable means to promote specific user behavior in non-game contexts.

Pfaltz, M. C., McAleese, S., Saladin, A., Meyer, A. H., Stoecklin, M., Opwis, K., Dammann, G. & Martin-Soelch, C. (2013). The Reading the Mind in the Eyes Test: Test-retest reliability and preliminary psychometric properties of the German version. *International Journal of Advances in Psychology Research*, 2, 1-9.

The Reading the Mind in the Eyes test (short Eyes test) is a widely used instrument assessing theory of mind abilities in adults. The present study for the first time assesses its test-retest reliability and provides initial data on the psychometric properties of a German version. 132 nonclinical participants completed the German Eyes test, a test of facial emotion recognition, and a measure of verbal skills. 40 of the 132 participants completed the Eyes test twice, three weeks apart. Results suggest that overall, the German Eyes test is a reliable instrument. No systematic learning

effects occurred with repeated testing and measurement precision was evenly distributed across different ranges of performance. Moreover, a significant correlation between Eyes test scores and a related construct, the Facially Expressed Emotion Labeling (FEEL) test, supports the construct validity of the German translation. However, analyses of individual items (item difficulty, test-retest agreement) suggest that psychometric properties of certain items could be improved. Examining the psychometric qualities and clinical usefulness of a short version might thus prove fruitful. Furthermore, future research should assess whether the clinical strengths of the original version (in particular, the differentiation between individuals with autism spectrum disorders and nonclinical controls) also apply to the German version.

Seckler, M., Heinz, S., Bargas-Avila, J., Opwis, K. & Tuch, A. (2013). Empirical evaluation of 20 web form optimization guidelines. *CHI '13 Extended Abstracts on Human Factors in Computing Systems* (CHI 2013, Paris, 27. April - 2. May 2013), 1893-1898.

Most websites use interactive online forms as a main contact point to users. Recently, many publications aim at optimizing web forms. In contrast to former research that focused at the evaluation of single guidelines, the present study shows in a controlled lab experiment with n=23 participants the combined effectiveness of 20 guidelines on real company web forms. Results indicate that optimized web forms lead to faster completion times, less form submission trials, fewer eye fixations and higher user satisfaction in comparison to the original forms.

Sotirova-Kohli, M., Opwis, K., Roesler, C., Smith, S.M., Rosen, D. H., Vaid, J. & Djonov, V. (2013). Symbol/meaning paired-associative recall: An „archetypal memory“ advantage? *Behavioral Sciences*, 3, 541-561.

The theory of the archetypes and the hypothesis of the collective unconscious are two of the central characteristics of analytical psychology. These provoke, however, varying reactions among academic psychologists. Empirical studies which test these hypotheses are rare. Rosen, Smith, Huston and Gonzales proposed a cognitive psychological experimental paradigm to investigate the nature of archetypes and the collective unconscious as archetypal (evolutionary) memory. In this article we report the results of a cross-cultural replication of Rosen et al. conducted in the German-speaking part of Switzerland. In short, this experiment corroborated previous findings by Rosen et al., based on English speakers, and demonstrated a recall advantage for archetypal symbol meaning pairs vs. other symbol/meaning pairings. The fact that the same pattern of results was observed across two different cultures and languages makes it less likely that they are attributable to a specific cultural or linguistic context.

## **Buchkapitel, Kapitel in Sammelbänden und Handbüchern, Beiträge in wissenschaftlichen Zeitschriften ohne Peer Review, Forschungsberichte**

Penner, I.K. (2013). Kognition. In T. Berger, M. Linnebank, & H. Wiendl (Hrsg.), *25 Jahre Multiple Sklerose Forschung – Betaferon* (pp.114-125). Wien: Springer Verlag.

## **Kurzbeiträge / Vorträge / Poster/Publizierte (peer-reviewed) Abstracts**

Adamski, N., Rost, B., Di Gallo, A., Schmeck, K., Weber, P., Opwis, K. & Penner, I.-K. (2013a). BrainStim: Working memory training in patients with anorexia nervosa. *Paper Presentation at the Forschungskolloquium KJPK, Basel, Switzerland, 5. Februar 2013.*

Adamski, N., Rost, B., Di Gallo, A., Schmeck, K., Weber, P., Opwis, K. & Penner, I.-K. (2013b). Working memory training in patients with anorexia nervosa by using a computerized tool (BrainStim). *Short Paper Presentation at the Eating Disorder Conference, London, Great Britain, 19.-21. März 2013.*

- Adamski, N., Rost, B., Di Gallo, A., Schmeck, K., Weber, P., Opwis, K. & Penner, I.-K. (2013c). Cognitive profiles in patients with eating disorders: Efficacy of a computerized working memory training (BrainStim) in patients with anorexia nervosa. *Paper Presentation at the Ravello Profile Conference Disorder Conference, Ravello, Italy, 23.-25. Mai 2013.*
- Adamski, N., Rost, B., Di Gallo, A., Schmeck, K., Weber, P., Opwis, K. & Penner, I.-K. (2013d). BrainStim: Working memory training in patients with anorexia nervosa. *Poster Presentation at the Forschertagung UKBB, Basel, Switzerland, 25. August 2013.*
- D'hooghe, M.B., Van Gassen, G., Kos, D., Van Wijmeersch, B., Willekens, B., Decoo, D., Cambron, M., Penner, I.K., Loos, C., & Nagels, G. (2013). Evaluating the effect of enhanced physical activity and energy management on fatigue in patients suffering from multiple sclerosis: the MS TeleCoach study. (Poster presented at the 29th Congress of the EU Committee for Treatment and Research in Multiple Sclerosis, ECTRIMS, Copenhagen, Denmark, 2.-5. Oktober 2013). *Multiple Sclerosis Journal, 19 (11 Suppl)*, 554.
- Hardmeier, M., Hatz, F., Penner, I.K., Naegelin, Y., Bousleiman, H., Schindler, C., Kappos, L., & Fuhr, P. (2013). Complex network analysis of high-resolution EEG data in multiple sclerosis patients with mild cognitive impairment and moderate fatigue. (Poster presented at the 29th Congress of the EU Committee for Treatment and Research in Multiple Sclerosis, ECTRIMS, Copenhagen, Denmark, 2.-5. Oktober 2013). *Multiple Sclerosis Journal, 19 (11 Suppl)*, 488.
- Heinz, S. (2013). Mensch-Maschine Interaktion: Zugrundeliegende psychologische Konzepten und mögliche Anwendungen in der Neurorehabilitation. *Vortrag an der REHAB Tagung Rehabilitation von hirnverletzten Menschen, Basel, Schweiz, 7. März 2013.*
- Hubacher, M., Walter, A., Weier, K., Sprenger, T., Stippich, C., Kappos, L., Opwis, K. & Penner, I.K. (2013). Memory and working memory performance in patients with multiple sclerosis are related to hippocampal volume and hippocampal activity during fMRI. (Poster presented at the 29th Congress of the EU Committee for Treatment and Research in Multiple Sclerosis, ECTRIMS, Copenhagen, Denmark, 2.-5. Oktober 2013). *Multiple Sclerosis Journal, 19 (11 Suppl)*, 441.
- Hubacher, M., Weier, K., Stöcklin, M., Specht, K., Kappos, L., Opwis, K. & Penner, I.-K. (2013). Case-based approach to evaluate the efficacy of working memory training in juvenile Multiple Sclerosis (Poster presented at the 2nd Conference of the International-MS-Cognition-Society, Zürich, Switzerland, 28.-29. Juni 2013). *Multiple Sclerosis, 19*, 975-976.
- Mekler, E. D. (2013). Designing for motivational affordance in citizen science: Gamification and meaningful framing enhance users' intrinsic motivation and performance. *Talk presented at the 13. Biannual congress of the Swiss Psychological Society, Basel, Switzerland, 11.-12. September 2013.*
- Penner, I.K. (2013a). Cognition, Fatigue and MS: their significance and use as broader clinical indicators of treatment success. *Biogen Idec International MS Physician Summit in Berlin.*
- Penner, I.K. (2013b). Cognition – an important aspect of MS. *Bayer Health Care International Scientific Symposium in Dublin.*
- Penner, I.K. (2013c). Neuropsychologie und MS – Relevanz und Empfehlung für den Praxisalltag. *9. Interaktives MS-Symposium in Berlin: Neues zu Prognose, Diagnose und Therapie.*

- Penner, I.K. (2013d). Kognitive Einschränkung, Fatigue und Depression bei MS – Resultat einer fokalen oder Netzwerkstörung? *DGN Satellitensymposium, Merck Serono*.
- Penner, I.K., Weber, P., Stoecklin, M., Specht, K., Steinlin, M., Kappos, L., Opwis, K. & Hubacher, M. (2013). Efficacy of working memory training in juvenile multiple sclerosis (Poster presented at the 29th Congress of the EU Committee for Treatment and Research in Multiple Sclerosis,ECTRIMS, Copenhagen, Denmark, 2.-5. Oktober 2013). *Multiple Sclerosis Journal, 19 (11 Suppl)*, 94-95.
- Schreiber, H., Lang, M., Fuchs, A., Kauderer, C., Fischer, T., Freidel, M., Hofmann, W., Elias, W., Reifschneider, G., Ries, S., Bühler, B., Uttner, I., Schlegel, S., Ring, C., Penner, I.K. & Bergmann, A. (2013). 6 years follow-up of attentional and cognitive functions in early relapsing-remitting multiple sclerosis (RRMS) patients (Poster presented at the 2nd Conference of the International-MS-Cognition-Society, Zürich, Switzerland, 28.-29. Juni 2013). *Multiple Sclerosis, 19*, 973-973.
- Schreiber, H., Fuchs, A. Ulm, Lang, M., Fischer, T., Kauderer, Freidel, M., Hofmann, W., Elias, W., Reifschneider, G., Ries, S., Bühler, B., Bergmann, A., Uttner, I., Ring, C., Schlegel, S., & Penner, I.K. (2013b). Longitudinal Observation of Attentional and Fronto-Temporal Cognitive Functions in Relapsing-Remitting Multiple Sclerosis (RRMS) – 6 Years Follow-up. *Neurology, 80*, S10.003.
- Seckler, M. (2013). Mapping objective structure and color factors in web design to facets of subjective aesthetic perception. *Talk presented at the 13. Biannual congress of the Swiss Psychological Society, Basel, Switzerland, 11.-12. September 2013*.
- Tuch, A. N. (2013). First impression of web pages: factors that affect users' aesthetic perception. *Talk held at the Telekom Innovation Laboratories' research colloquium, Technische Universität Berlin, Januar 2013*.
- Tuch, A. N. (2013). Analyzing users' narratives to understand experience with interactive products. *Talk held at the Computer Science Department of the University of Copenhagen, Denmark, März 2013*.
- Tuch, A. N. (2013). Lecture 2b and Workshop 2b Statistical Analysis: Multiple Regression and Factor Analysis. *Talk held at the TwinTide AUtumn Training SchOol 2013: REsearch Methods for Human-Computer Interaction (TUTOREM 2013), Bled, Slovenia, November 2013*.
- Zwahlen, D., Schaub, S., Yaldizli, O., Opwis, K., Annoni, J. M., Kappos, L., Penner, I.-K. (2013). Theory of mind deficits in patients with multiple sclerosis - a separate entity of socio-cognitive impairment? (Poster presented at the 2nd Conference of the International-MS-Cognition-Society, Zürich, Switzerland, 28.-29. Juni 2013). *Multiple Sclerosis, 19*, 990-990.



## Qualifikationsarbeiten (Abschluss in 2013)

### Dissertationen

Beck, Irene R. (2013). *Kognitive Aspekte in der Demenzfrühdiagnostik*. (Gutachter K.O., Datum der Disputation: 27. März 2013).

Oser, Nadine (2013). *Kognition und funktionelle Reorganisation bei Kindern mit Rolando-Epilepsie*. (Gutachter I.-K. P, Datum der Disputation: 20. Dezember 2013).

Schmid, Nicole (2013). *Präklinische neuropsychologische Marker und diagnostische Aspekte der Demenz*. (Gutachter K.O., Datum der Disputation: 22. November 2013).

### Masterarbeiten

Iten, Glenna (2013). *Impact of interactive visualization in statistics: The role of interactive visualizations in improving knowledge and understanding of statistics*.

Schaub, Simeon (2013). *Multiple Sklerose und veränderte soziale Kognition: Einfluss von kognitiven Defiziten, Fatigue, Depressivität, Angst und Lebensqualität*.

Seger, Dominik (2013). *Not a question of if, but when? Choosing the right trigger to encourage keyboard shortcut use*.

Zwahlen, Dominik (2013). *Theory of mind deficits in patients with Multiple Sclerosis: A separate entity of socio-cognitive impairment?*

### Bachelorarbeiten

Brühlmann, Florian (2013). *Gamification from the perspective of self-determination theory and flow*.

Chinnow, Vera (2013). *Kritische Stellungnahme zur Bereitschaft Placebo-Effekte stärker als bisher in der Therapie zu nutzen: Am Beispiel einer inflammatorischen, affektiven und degenerativen Erkrankung im Vergleich*.

Escher, Konstantin (2013). *Schule 2.0: Wie sich die Institution Schule an den diditalen Alltag ihrer Schüler anpasst*.

Keller, Thomas (2013). *Visuelle Komplexität: Forschungsmethoden zu visueller Komplexität statischer und interaktiver Webseiten*.

Klaiber, Aaron (2013). *Psychoaktive Substanzen in der Therapie: Cannabis, MDMA und LSD*.

Knitter, Barbara (2013). *What will be stored, what gets ignored?*

Kraus, Lea (2013). *Implikationen der Embodied Cognition für das Interface von Kreditkarten-terminals*.

- Iwona Hongler, Katarzyna (2013). *Is work-related mobile learning in public spaces effective? Acknowledging disruptions and human attention.*
- Mohler, Kathrin (2013). *Gamification for the environment: Can gamified applications produce a positive behaviour and attitude change?*
- Müller, Livia (2013). *The role of psychological needs in the relationship between feedback and behavior: Opportunities for sustainable human-computer interaction.*
- Schmid, Gian-Marco (2013). *Verbesserung von digitalen Musikinstrumenten durch haptisches Feedback.*
- Steiner, Clemens (2013). *Personalised persuasion: What are the most effective user data for persuasion profiling?*