

Keynote Talks

1. A Culture-Behavior-Brain Loop Model of Human Development

Shihui Han – Professor at the Department of Psychology, PKU-IDG/McGovern Institute for Brain Research and Leader of the Culture and Social Cognitive Neuroscience Lab, Peking University, Peking, China

Increasing evidence suggests cultural influences on brain activity associated with multiple cognitive/affective processes. These findings prompt an integrative framework to account for dynamic interactions between culture, behavior, and the brain. I put forward a culture-behavior-brain (CBB) loop model of human development that proposes that culture shapes the brain by contextualizing behavior and the brain fits and modifies culture via behavioral influences. Genes provide a fundamental basis for and interact with the CBB loop at both individual and population levels. The CBB-loop model advances our understanding of the dynamic relationships between culture, behavior, and the brain, which are critical for human phylogeny and ontogeny. Future brain changes due to cultural influences are discussed based on the CBB-loop model.

2. In Sync: Creation and Perception of Rapport Across Cultures and Gender

Gary Bente – Professor of Media and Communication Psychology at the Department of Psychology of the University of Cologne, Cologne, Germany

Rapport is an essential precondition for successful interaction and collaboration among humans. It is a dimension of social interaction emergent only on the dyadic or group level. It refers to the subjective feeling of harmony in groups and the perceived entitativity of a group from an outside perspective. It could be shown that it heavily relies on the adjustment of nonverbal behaviors in interaction, including such phenomena as coordination, mimicry and synchronization. Research so far, however, has failed to disentangle the connections between nonverbal coordination and perceived rapport. Furthermore, there is only little knowledge about the diversity in the creation and perception of rapport across gender and cultures. The lecture will introduce a new paradigm for the study of nonverbal rapport using motion capture and character animation technologies and present data from a cross-cultural/cross-gender study on the production and perception of rapport.

3. Mechanisms of Mimicry – How and Why do People Spontaneously Copy

Antonia Hamilton – Reader in Social Neuroscience and Leader of the Social Neuroscience group at the Institute of Cognitive Neuroscience (UCL), London, UK

Imitation is a ubiquitous human behaviour which provides a useful model of nonverbal social interaction. Though imitation is easy to recognise, the cognitive processes underlying it are very complex. Here I describe studies of when and why people chose to copy some actions but not others. This includes studies of children, adults and people with autism. I make a key distinction between imitation of action goals (emulation) and imitation of action forms (mimicry), and suggest that there are different cognitive and neural mechanisms involved in each. In particular, mimicry seems to be strongly driven by social demands and controlled by brain regions linked to social cognition. I present a neurocognitive model which can account for these findings. Finally, I will present new data on how people imitate and recognise

imitation in virtual reality, and will consider how human-avatar interactions can help in the study of social neuroscience.

4. Self, Social Cognition, and Health: A Bio-Cultural Perspective

Shinobu Kitayama – Robert B. Zajonc Collegiate Professor of Psychology at the University of Michigan, Research Professor at the Research Center for Group Dynamics, and Director of the Center for Culture Mind and the Brain, Ann Arbor, Michigan, USA

The last quarter century of cultural psychological work has shown that Caucasians and Asians are remarkably different in cognition, emotion, and motivation. So far, however, little is known on historical and evolutionary origins of the documented cultural differentiation. Nor do we know much about what this differentiation might mean with respect to health. In my presentation, I will address these missing links in the current literature in three steps. First, I will discuss how ecological conditions, as well as the subsistence systems they afforded, channeled the cultural differentiation between Eastern and Western regions over the last 10,000 years. Second, I will show that one consequence of this differentiation was the culture-specific orientation or attitude toward the self. Whereas people of Western descent (Caucasians) tend to be optimistic about the self and self-enhancing, those of Eastern descent (Asians) tend to be pessimistic about the self and self-critical. Moreover, this cultural difference in self-orientation is likely mediated by culturally variable images of others-in-general. Third, I will explore the hypothesis that the culture-specific self-orientations are likely to be adaptive in the respective cultural regions, which has implications for the co-evolution of culture and genes. I will conclude by discussing directions for future research.

5. Dynamic Neuroimaging of Face and Social Facial Signal Processing.

Nathalie George – Research Director at CNRS and Leader of the Social and Affective Neuroscience Laboratory at the Institut du Cerveau et de la Moelle Épinière, Hôpital de la Salpêtrière, Paris, France

Faces are key social stimuli. Studies in the domain of cognitive, affective, and social neuroscience have put in light that the processing of faces recruits specific visual regions and activates distributed sets of regions related to attentional, emotional, and social processes. Magnetoencephalography (MEG) and electroencephalography (EEG) techniques offer a unique insight into the temporal dynamics of mental processes. They allow revealing how fast the human brain can process faces and integrate emotion- and experience-related information to face processing. They provide evidence for a key and flexible role of amygdala in the processing of facial information in particular related to emotion and gaze. Moreover, they offer the possibility to investigate the processing of face and social facial signals in ecological setups, including the possibility for hyperscanning setups - where the brain activity of multiple subjects is recorded during face-to-face, naturalistic interaction - particularly with EEG. I will review a series of studies that we have performed to investigate the spatiotemporal dynamics of emotional modulation of face processing, of attentional processes associated with gaze processing, including the hyperscanning EEG study of live joint attention.

6. Intonation and Asperger Syndrome

Martine Grice – Professor at the Institute for Linguistics – Phonetics, University of Cologne, Cologne, Germany

In an ongoing discourse, new information is typically presented differently from information that is already given, e.g. if it has been mentioned previously. Words referring to new items are typically highlighted by means of *intonation*. They are accented, involving careful articulation of the consonants and vowels, coupled with distinctive vocal pitch. Conversely, words referring to given items are generally attenuated, involving intonational and referential means. They are typically unaccented and are frequently expressed by pronouns. Crucially, both highlighting and attenuation mechanisms require an assessment of whether items are new or given to the listener. Individuals with impaired mentalising skills (and more specifically, perspective-taking abilities), such as adults with Asperger Syndrome, are thus expected to show different patterns of highlighting and attenuation from typically developed adults. In the first part of the talk, I report on a perception study investigating how adults with Asperger Syndrome assess the givenness of items while listening to speech. I show that adults with AS paid significantly less attention to the way the word was pronounced – specifically whether a word was accented or not – than an age-matched control group. The AS group instead paid more attention to properties of the words themselves, such as word frequency and animacy. In the second part of the talk I present preliminary data from an ongoing production study, featuring picture-based oral narratives. Of the two adults with Asperger Syndrome analysed so far, one was found not to attenuate given referents hardly at all, leading to a lack of pronouns and frequent repetition of intonation patterns, whereas the other was found to attenuate too much and inappropriately. With this second speaker, the pronouns were difficult to attribute to a particular referent unambiguously. There is thus preliminary evidence for atypical highlighting and attenuation strategies.

7. *Tracing a Transformational Self: An Experiment in Neuroanthropology*

Oliver Davies – Professor of Christian Doctrine, Department of Theology and Religious Studies, King's College London, London, UK

It is generally acknowledged that religious people may see the world differently. But do they see other people differently? The tenacity of religious communitarian identities suggests they might. Is it possible then, in the light of the science of social cognition, a) to understand the mode of that interpersonal seeing and b) to generalise that mode to a theory of a distinctively 'religious' way of being in the world? Here it is suggested that a 'long' evolutionary account of the development of the prosocial (Lower Paleolithic), combined with a 'recent' account of the development of advanced human language (Neolithic, Okanoya), coinciding with the earliest signs of developed 'religious' practices, may point to a dynamic tension in the modern human between an ancient, pre-thematic, socio-biological inheritance of interrelationality and a highly reflexive, a posteriori, self-possessed linguistic consciousness. Religion may become legible as involving the dynamic transfer of the bio-energy of ancient 'enacted', interfacial, socio-cognitive processes (or 'dark matter', Schilbach et al.), into contemporary culture, through a) the use of a highly specialized, affective, liminal language, b) its flooding the locus of religious interfacial encounter, or ritual, in its most thickly material forms and c) the transformative use of the indexical 'I'. (happy to do short talk but not 'early career' scholar)

8. *Neural Mechanisms of Social Information Processing in High-Functioning Autism*

Kai Vogeley – Professor of Medicine, Senior Psychiatrist and Leader of the Neuroimaging Group at the University Hospital of Cologne and of the Social Cognition Group at the Research Center Jülich

Autistic disturbances are characterized by disturbances in the processing of social information, especially of nonverbal communication cues. Over the last decade, cognitive neuroscience has started to systematically study the neural mechanisms of social cognition and has identified essentially two different neural systems that appear to constitute two different routes of processing underlying our social cognitive capacities in everyday social encounters, namely the so-called “mirror neuron system” (MNS) and the “social neural network” (SNN, also theory of mind network or mentalizing network). The functional roles of both systems appear to be complementary: The MNS serves comparatively “early” stages of social information processing that are more related to spatial or bodily signals expressed in the behaviour of others and supports the “detection” of potential social salience, including observation of other persons actions. Complementary to the functional role of the MNS, the SNN serves comparatively “late” stages of social information processing that are more related to the “evaluation” of emotional and psychological states of others that have to be inferred as inner mental experience from the behaviour of this person. Empirical studies on the neural mechanisms of social information processing suggest that the primary deficit is the adequate evaluation, but not necessarily the detection of socially relevant information as reflected in a series of studies that show deficits in the adequate recruitment of the SNN but not the MNS.

Short Talks

1. *Combining Interactive Eye-Tracking and fMRI to Investigate the (A)Typical Developmental Trajectories of Joint Attention*

Eileen Oberwelland – Institute of Neuroscience and Medicine (INM-3), Jülich Research Center & University Hospital Aachen, Germany

Joint attention (JA), a prerequisite for the development of social interaction, refers to two people’s shared attention on a specific object. Despite its significance, only two interactive fMRI studies have overcome the challenge to introduce a suitable JA paradigm (Redcay et al., 2010; Wilms et al., 2010). We used an interactive eye-tracking setup (Wilms et al. 2010) to examine the developmental trajectories of JA, which remain unknown until now. Participants looked at a face surrounded by three targets. In the Self-Initiated conditions, participants shifted their gaze towards one target and the partner either followed or not. In the Other-Initiated conditions, participants followed either the partner’s gaze or an external cue. Functional data were analysed for 32 typically developing (TD) and 10 subjects with autism (8-18 years). TD subjects recruited a JA network comparable to findings in adults with only minor age effects. The JA network encompassed reward, motivation, attention, spatial orientation, facial emotion and motor processing related areas, which is modulated by familiarity of the partner and self- vs. other-initiation. Further data analysis with respect to (a)typical development will follow. Our results suggest early maturity of JA in typical development. Modulation by familiarity and self- vs. other-initiation reveals further insights into the neural underpinnings of JA and its development. Comparison to atypical development will further advance the understanding of JA deficits in autism.

2. *Self-Descriptions by Individuals with Autism Spectrum Disorder in New Delhi and Los Angeles: Bridging Cross-Cultural Psychology and Neurodiversity*

Rachel S. Brezis –The Interdisciplinary Center, Israel

Decades of research have shown that self-concepts vary cross-culturally, demonstrating one way in which our neuropsychological foundations are culturally shaped. Yet most research in cultural psychology has been limited to the study of typically developing adults, and little is known about the ways in which cultural schemas are acquired by individuals with diverse neurological constitutions. As a neurodevelopmental disorder that definitively disrupts the relation between self and other, autism presents a unique case study to understand the biological bases of acculturation. Given their fundamental difficulty with self- and other-understanding, would individuals with autism acquire their culture's self-concept? Here we present the first examination, to our knowledge, of self- and other-concepts in a cross-cultural sample of individuals with Autism Spectrum Disorder (ASD) in Los Angeles, USA, and New Delhi, India. When describing themselves, Indian individuals with ASD made significantly more concrete and more contextualized (i.e., interdependent) descriptions than American individuals with ASD. By contrast, the two ASD groups did not differ in their degree of physical vs. psychological descriptions, characteristic of the cognitive tendencies of individuals with autism. Our findings suggest that despite their diverse neurological constitution, individuals with ASD do acquire the cultural scripts they are exposed to.

3. *Video Stimuli Reduce Object-Directed Imitation Accuracy: A Novel Two-Person Motion-Tracking Approach/Testing the Validity of Video Stimuli in Imitation*

Arran Reader – School of Psychology and Clinical Language Sciences, University of Reading, UK

Imitation is an important form of social behaviour, and research has aimed to discover the neural and kinematic aspects of imitation. However, much of this research has featured single participants imitating in response to pre-recorded video stimuli. This is in spite of findings that show reduced neural activation to video vs. real life movement stimuli, particularly in the motor cortex. We investigated the degree to which video stimuli may affect the imitation process using a novel motion tracking paradigm with high spatial and temporal resolution. One individual freely moved within given parameters (moving balls across a series of pegs) and a second participant imitated. This task was performed with either simple or complex movement difficulty, and either face-to-face or via a live video projection. A cross-correlation and multivariate analysis revealed that object-directed imitation task accuracy was reduced in video compared to face-to-face feedback, and in complex compared to simple difficulty. The results suggest that for tasks which require object-directed imitation, video stimuli may not be an ecologically valid way to present task materials. However, no similar effects were found in the joint angle and grip aperture variables, suggesting that there are limits to the influence of video stimuli on imitation.

4. *Action Recognition Across Different Cultures*

Dong-Seon Chang – Max Planck Institute for Biological Cybernetics, Tübingen, Germany

The way we use social actions in everyday life to interact with other people differs across various cultures. Can this cultural specificity of social interactions be already observed in perceptual processes underlying the visual recognition of actions? We investigated whether there were any differences in action recognition between Germans and Koreans using a visual adaptation paradigm. German (n=24, male=10, female=14) and Korean (n=24, male=13, female=11) participants first had to recognize and describe four different social actions (handshake, punch, wave, fist-bump) presented as brief movies of point-light-stimuli. The actions handshake, punch and wave are commonly known in both cultures, but fist bump is largely unknown in Korea. In an adaptation aftereffect experiment, participants had to categorize the actions in a 2AFC task. We measured to what degree each of the four adaptors biased the perception of the presented actions for German and Korean participants. The actions handshake, punch and wave were correctly recognized by both Germans and Koreans, but most Koreans failed to recognize the correct meaning of a fistbump. However, Germans and Koreans showed a remarkable similarity in the pattern of aftereffects. These results imply a surprising consistency and robustness of action recognition processes across different cultures.

5. *How Culture Makes Us (S)Tick Together*

Meike Ramon – Institute of Neuroscience & Psychological Sciences Research Institute, Catholic University of Louvain, Belgium

Cultural values represent an explicit form of behavioral attunement affecting perceptual and neural processing. Cognitive capacities e.g. empathy and theory of mind represent an implicit form of behavioral attunement which may have developed with increasing brain size. The neural underpinnings are both universal and culturally diverse, and involve a network of brain regions including mirror neuron areas that enable intentional attunement and facilitate complex social cognition. Akin to regions within individual brains synchronizing their activity, we hypothesized that culture modulates synchronization on a larger scale: across brains of individuals of the same culture. We anticipated maximal inter-brain synchronization (IBS) among individuals of the same culture in response to events that coincide with their cultural values, especially within regions involved in perceptual processing. Higher-level areas, for which a lack of IBS has been reported, were expected to show a larger degree of cultural specificity. East Asian (EA) and Western Caucasian (WC) observers viewed movies portraying collectivistic and individualistic actions in the fMRI scanner. IBS differed as a function of action-type and observers' culture, and was expressed differentially along a posterior-anterior gradient. Our data demonstrate the idiosyncrasies and commonalities in the neural expression of cultural values that may also be tracked longitudinally.

6. *The Impact of Cultural Values and Appearance on Choice of Female Leaders*

Jing Rachel Ma – Perception Lab, School of Psychology and Neuroscience, University of St. Andrews, UK

Leadership is a global phenomenon yet most research has been on white male leaders. Country membership (ethnicity) and cultural values (power distance and collectivism/individualism) are known to affect leader-follower interactions. Female leaders who display more masculine traits are negatively evaluated by group members. We compare the impact of facial masculinity and prototypicality on the perception of male and female leaders across cultures. Methods Western and Eastern participants were asked to complete

a Cultural Orientation Scale and to choose the more leader-like person from 40 Caucasian and 40 East Asian pairs of faces. Pairs differed either in masculinity or ethnic prototypicality of face shape. Results: Ethnic prototypicality benefited leader selection within both ethnic groups across genders, although male faces benefiting from prototypicality more than female faces. Masculinity enhanced leader selection for male faces but decreased leader selection for female faces. Ethnic differences were found in the preference of prototypicality and masculinity in leaders. Easterners preferred prototypicality more than Westerners. Increasing vertical collectivism (acceptance of hierarchy) was positively related to the preference of masculinity in female faces for leaders. This effect on leader choice was driven by individual differences in cultural values that exceeded the East and West dichotomy.

Posters

1. Prefrontal-Limbic Functional Connectivity During Resting State and Acute Psychosocial Stress: Effects of Early Life Stress and Oxytocin

Jan Fan – Department of Education and Psychology & Center for Cognitive Neuroscience, Freie Universität Berlin & Department of Psychiatry, Charité University Hospital Berlin

Background: Acute stress changes both amygdala activity and its connectivity with prefrontal cortex and hippocampus, which regulates stress responses along the hypothalamic-pituitary-adrenal (HPA) axis. Early life stress (ELS) shapes the development of prefrontal-limbic areas and the HPA axis, and predicts adult stress responsiveness in both healthy and clinical samples. Oxytocin (OXT) attenuates stress responses, but its effect is diminished or even reversed in individuals who have experienced ELS. The neural underpinnings of the interaction between ELS and OXT remain unclear. Here we investigate the effects of ELS and OXT on amygdala-centered functional connectivity (FC) during resting state and acute psychosocial stress.

Methods: Thirty-two healthy young males participated in an fMRI study of OXT effects on psychosocial stress using a double-blind, randomized, placebo-controlled, within-subject crossover design. In each scanning session, an 8-min resting state measure was followed by induction of acute psychological stress using the Montreal Imaging Stress Task.

Results: Multiple linear regressions showed that ELS, especially emotional abuse (EA), predicted reduced resting-state FC between the right amygdala and pregenual anterior cingulate cortex, which in turn predicted elevated state anxiety after psychosocial stress. Psychophysiological interaction (PPI) analysis in the placebo session showed that EA was positively associated with stress-induced changes in connectivity between amygdala and hippocampus. Moreover, hierarchical linear regression showed that this positive association between EA and stress-induced amygdala-hippocampal FC changes was moderated after the administration of intranasal OXT. Amygdala-hippocampal connectivity in the OXT session correlated negatively with cortisol stress responses.

Conclusion: These findings highlight that ELS is associated with dysregulated coupling within the prefrontal-limbic circuitry both during resting-state and in response to acute stress. Such

changes in prefrontal-limbic functional dynamics may underlie the altered sensitivity to the effects of OXT in individuals who have experienced ELS.

2. Impact of Perceived Gaze Direction and Duration on Fixations During an Impression Formation Task in High-Functioning Autism

Alexandra Georgescu – NeuroImaging Group, Department of Psychiatry, University Hospital of Cologne

Beyond Theory of Mind (ToM) and recognizing intentions and emotions, impression formation constitutes a further relevant domain of social cognition that has largely been ignored in autism research. It differs from ToM, because it does not require to understand, but to attribute traits to another person. Some research has shown that the degree to which nonverbal information contributes to subjective social decisions is significantly lower in HFA than in control participants (Georgescu et al. 2013; Kuzmanovic et al., 2011). The question remains whether this may be a deficit in social attention or an indicator of atypical higher-level social processing. Investigating eye movements during such impression formation tasks may be particularly informative in this case. By employing eyetracking and a naturalistic social interaction setting, the current study investigates the impact of perceived social gaze on impression formation in individuals with high-functioning autism (HFA) and a matched control group. The stimulus material was made up of short videos of 10 male and female virtual faces. The study consisted of a 2x3 design. There was a between-subject factor (Group), and a repeated measures parametric within-subject factor (Gaze Duration: 1s, 2.5s, 4s). A control condition consisted of averted gaze (0s). 16 individuals with HFA and 16 matched control participants were asked to rate the likeability of virtual characters on a four-step likeability scale (“very dislikable”, “rather dislikable”, “rather likeable” and “very likeable”), as a Tobii eyetracker was assessing their gaze patterns. Behavioral results showed a main effect of gaze duration only for the control group. Eyetracking results showed a significant effect of gaze duration only on the frequency of fixations to the eye and forehead ROIs across groups. There was no significant main effect of group and no interaction effect. We conclude that, in an impression formation task, individuals with HFA visually explore faces in a similar manner as typically developing individuals. While increasing gaze duration of a virtual other modulates the fixation frequencies to the eye region of the interaction partner, only in the control group does it also modulate impression formation.

3. Insights From Special Needs Teaching Staff On Development Of An iPad App To Teach Emotion Recognition To Children With Autism Spectrum Disorder.

Sarah Griffiths – School of Experimental Psychology, University of Bristol, UK

Poster Abstract: Many psychological studies have suggested that children with autism have trouble recognising emotion from facial expressions. Children with high functioning autism can be taught to recognise facial expressions but may fail to apply this learning when they encounter subtle versions of these expressions in everyday life. We are developing an iPad app to deliver teaching about subtle emotional expressions to children with autism. As part of the design process we have conducted two focus groups with teaching staff (N=5) at a school for children with special educational needs in the UK. In the focus groups, teaching staff used a prototype version of the app and were invited to give their opinions. Focus group discussions were recorded and analysed using qualitative methods. These suggested that the app has potential to be used in a classroom setting with individuals with ASD but also

provided important insights into how the app should be designed. Changes introduced after these discussions included reducing distractions, adding alternative forms of feedback, and linking the app to other existing teaching aids. The app has now been redesigned and this version is presented along with detailed results of the qualitative analysis.

4. *Social Reinforcement Learning and its Neural Modulation by Oxytocin – A Pilot Investigation*

Jana A. Kruppa – Institute of Neuroscience and Medicine (INM-3), Jülich Research Center & University Hospital Aachen

The social symptoms of Autism Spectrum Disorder (ASD) are usually treated with behavioral interventions, mostly based on operant reinforcement learning. Recently, oxytocin (OXT) has been shown to enhance motivation and attention to social stimuli. Likely, these effects have the potential to enhance social reinforcement learning. Accordingly, the addition of OXT to behavioral therapies may prove a fruitful approach. The influence of OXT on socially reinforced learning and its neural mechanisms will be investigated. In a double-blind placebo-controlled cross-over design, we used functional Magnetic Resonance Imaging assessing brain activation during performance in a social reinforcement learning task in 25 typically developing controls (18-25 years). First pilot data was also acquired in patients with ASD. Participants indicated whether (social and non-social) stimuli belong to category A or B. Rewarding or neutral feedback was provided. Preliminary analyses of the control group showed a significant correlation of brain activity in the ventral striatum with the reward prediction error, modulated by social feedback and OXT condition. More extensive analyses including data of the ASD group will follow. The present study provides insights into the potential of OXT to modulate the reward system and enhance socially reinforced learning. Further investigations are needed to relate these results to outcomes of combined pharmacological and behavioral interventions in ASD.

5. *Who Believes in (Bayesian) Ghosts? A study of Interpersonal Predictive Coding in High-Functioning Autism*

Tabea von der Lühe – Department of Psychiatry, University Hospital of Cologne & University Hospital of Düsseldorf

Communicative actions reveal information about an actor, but they also help to predict the presence and behavior of a second agent. This has been referred to as “interpersonal predictive coding”. High-functioning autism (HFA) is characterized by impairments in social interaction, which are assumed to be related to an inability of automatically responding to social cues (online social cognition), while more explicit capacities to relate to others (offline social cognition) may be intact. 16 adults with HFA and 16 matched controls (HC) observed point-light displays on an eye-tracker monitor. Stimuli belonging to the communicative (COM) condition showed an agent (A) performing a communicative gesture toward a second agent (B) who responded according to it. In the individual (IND) condition, agent A’s communicative actions were replaced by non-communicative actions. Using a simultaneous masking detection task, we asked participants to report the presence of the second agent B. A mixed repeated measure ANOVA revealed a significant main effect of condition with higher sensitivity in the COM than in the IND condition and a significant interaction effect between condition and group. A simple effect analysis demonstrated a significant effect of condition in the HC group with higher sensitivity in the COM condition, while no such effect was observed

in the HFA group. Analysis of the gaze data confirmed that both HC and HFA always looked at both agents. The present study replicates and extends previous findings of a “second agent effect”. Furthermore, our results demonstrate that individuals with HFA are able to recognize and label communicative actions presented by means of point-light displays, but do not automatically respond to them in such a way that it would facilitate the recognition of a reaction of a possible interactor or respondent to a given action.

6. Investigating Social Cognition With Motion Capture Technology

Vassilis Sevdalis – Department of Psychology, University of Cologne, Germany

The nonverbal behavior (NVB) of humans provides a variety of information about the person displaying the behavior as well as about their relationship with their environment or interaction partner. Capturing the NVB of real actors and mapping it onto virtual characters is a powerful tool for studying its perception and impact, as it allows the manipulation of cues like attire, culture or facial expression. To illustrate the potential of using motion capture technology, we present studies that investigated agent identification (i.e., recognizing whether an action was generated by one’s self or another individual), expression intensity identification (i.e., recognizing dynamics of bodily expressions), and interaction dynamics (recognizing dynamics of interpersonal interactions). Examples of the behaviors shown included actions such as walking in synchrony with music, dancing, or introducing one’s self to another individual. Observers were asked to recognize properties of these inter(actions) by observing only their motor components (depicted as point-light displays or animated avatars). The results reveal a number of factors influencing the perception of actions, such as stimulus parameters (e.g., action complexity), interpersonal parameters (e.g., dominance), and individual differences (e.g., cultural background and empathy). The findings are examined with regard to their implications for joint action and social cognition.

7. Languages Are For Girls, Are They Not? A Threat To Classic Gender Stereotyping: A Psycholinguistic Exploration Into Gender Differences In L2 Aptitude

Barbara V. Wucherer – Department of Linguistics, Unit for Language Learning and Teaching Research (SLLF), University of Vienna, Austria

Albeit a surge of novel insights into the female/male variable on human behavior/cognitive functions, the gender factor is still far from being well understood. This project investigated gender differences in the realm of L2-aptitude, with the ultimate aim of providing suggestions how to best adapt L2-instruction to an individual’s needs. Pursuing an interdisciplinary approach, informed by neuroscientific research, this study used linguistic and psychological measures (Modern Language Aptitude Test, TOEFL, Llama aptitude battery, Hindi (unknown language)-mimicking task, text reading in L2; personality tests; intelligence tests). The performance of 64 subjects (32 females), matched for age and education, was analyzed regarding gender and personality/motivation differences. Results revealed gender differences and cast doubt on a female advantage. Replicating Reiterer et al.’s (2011) findings, males outperformed females on phonemic/phonetic-coding ability, whereas women had a slight advantage on grammatical sensitivity tasks. The Hindi (L0)-mimicking task showed the most profound gender difference, possibly due to a more open-minded and systemizing male brain (Baron-Cohen 2003). Males’ performances on linguistic tasks were more strongly interrelated, underscoring the idea of a stronger intra-hemispheric organisation

in men (Ingalhalikar et al. 2014), as different language areas, likely to be situated in the left hemisphere, are assumed to have been simultaneously activated.

8. *The Role of Memory in Children's Perspective-Taking Ability During Referential Communication*

Lin Zhao – School of Psychology, University of Birmingham, UK

What role does memory play in children's perspective-taking ability? A large scale of studies examining adults and children's perspective-taking ability used varied versions of a referential communication task—Director Task. In the classic Director Task, however, the visual cues of the perspective difference remained available throughout trials, which might have minimised the needs of holding perspective information in memory. As perspective information is unlikely to be completely visually available in real life situation, the current study re-designed a Memory Director Task, which requires participants to encode, store and then retrieve the perspective information in order to successfully interpret referential utterances. In Experiment 1, we varied the object array size (5, 7 or 9 objects) to manipulate the potential memory load of our Memory Director Task. Results from 10-year-old children showed an increased tendency of making egocentric errors with the increase of object array size. Experiment 2 was conducted to further explore the origin of the effect found in Experiment 1, comparing children's performance between age groups (8 and 10-year-olds), task versions (memory and no-memory task) and object array sizes (5, 7 or 9 objects). These findings are discussed to shed light on the role of memory in children' perspective-taking performance.

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