Person Perception

Person Impressions, Emotions, and Social Cognitive Neuroscience

Programme and Abstracts for the 10th PPRU Workshop

October 9-10, 2014
Place: Großer Rosensaal, Fürstengraben 27
Friedrich Schiller University Jena

Carina Giesen, Stella J. Faerber, Adrian P. Simpson, Dana Schneider, Klaus Rothermund, Romi Zäske, Verena G. Skuk, Daniela Schulze-Henning, Jürgen M. Kaufmann, Helmut Leder, Mareike Grotheer, Sven Kachel, Andreas Keil, Carolin S. Altmann, Stefan R. Schweinberger, Viola Macchi Cassia, Gyula Kovács, Swantje Puls, A. Mike Burton, Claudia Menzel, Gregor Hayn-Leichsenring, Nicole Braun, Alex Todorov, Annett Schirmer, Franz J. Neyer, Valentina Proietti, Peter Kühmstedt, Stefanie Hechler.

Person Perception – Person Impressions, Emotions, and Social Cognitive Neuroscience

October 9-10, 2014 - Place: Großer Rosensaal, Fürstengraben 27

EVENT SCHEDULE

THURSDAY, OCTOBER 9, 2014

1ST SESSION:	EMOTION IN SPECIAL POPULATIONS

09.00 – 09.10
Welcome
Stefan R. SCHWEINBERGER (Dept. Gen. Psychol., Univ. Jena, DE)

09.10 – 09.50
Face processing in social anxiety: Inter-individual differences in cortical networks within and beyond the classical visual hierarchy
Andreas KEIL (Dept. Psychol., Univ. Florida, US)

09.50 – 10.30
Self-perception and expression during facial palsy
Carsten KLINGER and Otto W. WITTE (Clinic of Neurol., Univ. Hosp., Jena, DE)

10.30 – 10.50
Coffee Break

2ND SESSION:	DEVELOPMENT

10.50 – 11.30
How experience shapes face processing abilities in infancy and beyond: evidence from the age bias
Viola MACCHI CASSIA (Dept. Psychol., Univ. Milano-Bicocca, IT)

11.30 – 12.10
Social preferences in pre-schoolers: The relevance of self-similarity
Daniel HAUN (Dept. Develop. Psychol., Univ. Jena, DE)

12.10 – 13.30
Lunch Break

3RD SESSION:	SOCIAL NEUROSCIENCE

13.30 – 14.10
The perception of Speaker Gender and Speaker Identity in the Human Voice
Verena G. SKUK (Person Percept. Res. Unit, Univ. Jena, DE)

14.10 – 14.50
Hairy or not: Bottom-up mechanisms mediate positive touch effects in humans and zebrafish
Annett SCHIRMER (Dept. Psychol., Nat. Univ. Singapore, SG)

14.50 – 15.10
Coffee Break

4ᵀᴴ SESSION: AESTHETICS

15.10 – 15.50	When facial beauty affects exploration
	Helmut LEDER (Dept. Gen. Psychol., Univ. Vienna, AT)
15.50 – 16.10	Face aesthetics: Statistical image properties of face photographs and art portraits
	Gregor HAYN-LEICHSENRING (Inst. Anatomy, Univ. Hosp. Jena, DE)

16.30 – 18:30   POSTER SESSION

FRIDAY, OCTOBER 10, 2014

5ᵀᴴ SESSION: SOCAL PERCEPTION AND MEMORY FOR FACES

09.30 – 10.10	Data-Driven Methods for Modeling Social Perception of Faces
	Alex TODOROV (Dept. Psychol., Princeton Univ., US)
10.10 – 10.50	Memory for faces, images of faces, and objects
	A. Mike BURTON (School of Psych., Univ. Aberdeen, UK)
10.50 – 11.10	Coffee Break

6ᵀᴴ SESSION: PERSON PERCEPTION AND ACTION

11.10 – 11.50	Changing voices: getting at the effects of phonetic convergence in controlled recordings
	Adrian P. SIMPSON (Inst. Germ. Ling., Univ. Jena, DE)
11.50 – 12.10	Copying competitors? Independency modulates stimulus-based retrieval of observed responses
	Carina GIESEN (Dept. Gen. Psychol. II, Jena, DE)
12.10 – 12.20	Closing Remarks
12.20 – 14.00	Lunch Break
14:00 – 16.00	Strategy meeting, Person Perception Research Unit, SFB/JIPPSON initiative, and guests

16.00   END OF WORKSHOP

ABSTRACTS – ORAL PRESENTATIONS

1   FACE PROCESSING IN SOCIAL ANXIETY: INTER-INDIVIDUAL DIFFERENCES IN CORTICAL NETWORKS WITHIN AND BEYOND THE CLASSICAL VISUAL HIERARCHY

ANDREAS KEIL

Department of Department of Psychology and Center for the Study of Emotion & Attention, University of Florida, Gainesville, United States of America

　akeil@ufl.edu

A plethora of studies suggest that the motivational or biological relevance of external stimuli facilitate sensory processing. This phenomenon is readily demonstrated when observers high in social anxiety view pictures of faces expressing strong affect. In this presentation, we discuss conceptual issues regarding the characterization of perception and attention such as the bottom-up and top-down dichotomy, with respect to real-world stimuli such as faces. We then turn to experimental explorations of behavioral and neurophysiological dynamics as healthy observers and individuals diagnosed with disorders in the social anxiety spectrum view emotion faces. Capitalizing on neuroimaging techniques with fine-grained temporal resolution we find that activity in lower-tier visual cortex reflects the motivational relevance of face stimuli. Connectivity analyses and advanced signal processing demonstrate that subgroups of patients defined by their primary symptoms can be readily classified based on their electrocortical response. Findings will be discussed in a theoretical framework that views emotions as action dispositions, implemented in widespread cortical and sub-cortical networks.

2   SELF-PERCEPTION AND EXPRESSION DURING FACIAL PALSY

CARSTEN KLINGNER & OTTO WITTE

Hans Berger Clinic of Neurology, University Hospital Jena, Germany

　CARSTEN.KLINGNER@med.uni-jena.de; Otto.Witte@med.uni-jena.de

We percept not only other people but we also monitor our self and our emotional and facial expression. The interaction between motor facial expression and the perception of this expres-sion can be investigated in the context of a disturbed facial motor function. Such an isolated disturbed facial motor function is a symptom in a common disorder called Bell's palsy. The somatosensory afferents of the face are mediated by the trigeminal nerve, which is not affect-ed in Bell's palsy. Therefore, although patients suffer from a unilateral facial motor palsy, the sensory feedback of facial movements is not impaired. As a consequence, the brain is able to detect the mismatch between the intended facial expression and its perception. In the present talk we discuss how the brain reacts to such a disturbed self perception. The impact on func-tional brain activity and network interactions in the restitution of function as well as the mechansims underlying compensation and restitution are described. Furthermore the current knowledge of the impact of motor and sensory training on functional reorganisation will be discussed.

3   HOW EXPERIENCE SHAPES FACE PROCESSING ABILITIES IN INFANCY AND BEYOND: EVIDENCE FROM THE AGE BIAS

VIOLA MACCHI CASSIA

Department of Psychology, University of Milano-Bicocca, Italy
  viola.macchicassia@unimib.it

Much evidence suggests that face representation constantly adapts to reflect the individual's current social and perceptual experience, giving rise to a number of face processing biases. Nevertheless, little is known about whether the plasticity of these biases varies across the lifespan. I will present evidence from a series of studies with infants and adults showing that face representation remains plastic into adulthood, but plasticity decreases with age. Research with infants has shown that between 3 and 9 months face discrimination abilities narrow, resulting in perceptual tuning (i.e., perceptual narrowing) towards over-experienced face categories that are most frequent and relevant in the infant's environment and decreased sensitivity to non-relevant face types. Using behavioral (visual habituation), electrophysiological (EEG) and neuroimaging (fNIRS) paradigms we showed that during the same time-window infants' face processing abilities tune towards adult faces. However, natural experience acquired from birth with an older sibling's face prevents such tuning to occur, allowing 9-month-olds to maintain the ability to discriminate child faces. Finally, in a series of studies conducted with adult women who, as first-time mothers, are exposed to the face of their child, we showed that the only condition in which later-acquired experience affects performance is when early exposure to a sibling's face occurred in the participant's first 3 years of life. The reactivation effect engendered by later-acquired experience is already apparent after 4 months of exposure to the child's face, and that the effects of early-acquired experience are still visible after 12 months of exposure. Overall, these findings show that visual experience acquired in the first 9 months of life has a critical role in the emergence of neurocognitive specialization for adult faces, and it has continuous effects into adulthood, as it preserves the system from the loss of plasticity that would otherwise take place.

4   SOCIAL PREFERENCES IN PRE-SCHOOLERS: THE RELEVANCE OF SELF-SIMILARITY

DANIEL HAUN

Department of Developmental Psychology, Friedrich-Schiller-University, Jena, Germany
  daniel.haun@uni-jena.de

I will present evidence for a social preference for self-similar others in pre-school children. I will further discuss how this preference for self-similar others might impact social learning amongst human children in species-unique ways.This theoretical account includes two closely related claims. First, children preferentially affiliate with and learn from similar others. Second, since members of the child's social group tend to prefer individuals that are similar to themselves, children can mediate their social relationships by attempting to manage their own similarity to others. The same is not true for other great ape species. hence, many of the species-specific human social learning phenomena that have been discovered so far might share roots in the same underlying mechanism: self-similarity preference.

5   THE PERCEPTION OF SPEAKER GENDER AND SPEAKER IDENTITY IN THE HUMAN VOICE

VERENA G. SKUK

DFG Research Unit Person Perception, Friedrich-Schiller-University, Jena, Germany
verena.skuk@uni-jena.de

Study I investigated the relative impact of various acoustical cues, i.e. fundamental frequency (F0), formant frequencies (FF), spectrum level (SL), and aperiodicities (AP) on voice gender perception. The general idea was morph only the parameter(s) of interest along a male-female morph-continuum, while keeping the residual parameters constant at an empirically determined perceived-as-androgynous morph level. This novel parameter morphing approach based on TANDEM-STRAIGHT and permitted to measure and compare the impact of either a single cue at a time (Exp. 1) or selected combinations of these cues (Exp. 2). The most important individual parameters for gender perception in short vowel-consonant-vowel (VCV) utterances were, in order, F0, FF, and SL. Further, F0 and vocal tract resonances (FFSL) have a comparable impact in VCVs on voice gender classification. Study II then compared the impact of both F0 and timbre on voice gender adaptation. Aftereffects related to timbre adaptation (in which stimuli comprised an androgynous F0-contour) were reduced relative to a control condition comprising male or female voices as adaptors. Most interestingly, they were twice as large compared to an F0 adaptation condition (in which stimuli comprised an androgynous timbre), suggesting a major role of timbre as compared to F0 for voice gender adaptation. Further evidence suggests that substantial individual listener differences can, at least in part, reflect pre-experimental contact to male and female voices. Finally, Study III investigated individual and gender differences in personally familiar voice perception. 40 listeners (20 female) had to identify 20 speakers (10 female) by naming among a set of 70 (33 female) possible classmates. Mean identification rates were 67% for sentences, around 35\% for a /Hallo/ or VCVs, and 18% for non-verbal harrumphs, i.e. highly above chance. Substantial individual differences between listeners suggest a large variability of voice recognition ability. Importantly, superior overall performance of female listeners was qualified by an interaction between voice gender and listener gender. Male listeners exhibited an own-gender bias, whereas female listeners identified voices of both genders at similar levels. Individual own-gender identification biases were correlated with differences in reported contact to a speaker's voice and voice distinctiveness.

6   HAIRY OR NOT: BOTTOM-UP MECHANISMS MEDIATE POSITIVE TOUCH EFFECTS IN HUMANS AND ZEBRAFISH

ANNETT SCHIRMER

University of Singapore, Singapore, Singapore
psysa@nus.edu.sg

Pleasant tactile experiences have been linked to a number of positive effects. For example, it has been suggested that they calm a touched individual and promote positive attitudes towards a toucher. We conducted a series of studies to determine whether these effects are stimulus-driven or whether they depend on touch attribution. To this end, we explored tactile effects in both humans and zebrafish. In humans, we found that touch produced by a tactile device elicited similar effects on heart rate and Event-Related Potentials (ERPs) as touch produced by a friend. Moreover, ERPs indicated that touch, regardless of attribution, increased sensitivity to emotional and socially relevant stimuli. In zebrafish, we observed that, like in humans, tactile stimulation has a calming effect. It reduced cortisol levels and fear behavior after exposure to a threat. Together, these data suggest that at least some of the positive effects of touch result from bottom-up mechanisms and have a distant evolutionary origin.

7   WHEN FACIAL BEAUTY AFFECTS EXPLORATION

HELMUT LEDER

Department of General Psychology and Methodology, University of Vienna, Vienna, Austria
⬜ helmut.leder@univie.ac.at

Faces reveal many kinds of information. Facial beauty is often assumed to be a prototypical example of the aesthetic sense, and most closely connected to its biological roots. The relevance of aesthetic evaluation can be shown by its influence on explicit behaviour, changing frequency and perseverance of certain behaviours, eliciting emotional states, but also directly affect visual exploration (Shimoyo et al., 2003). In one study, (Leder, Tinio, Fuchs & Bohrn, 2010) we investigated how aesthetics guides our exploration of the environment. We embedded pairs of attractive and non-attractive faces into complex, real-world urban scenes and measured eye movements during scene viewing. We found that attractive faces elicited longer looks, which suggests that the aesthetic response orients people toward the rewarding and pleasing aspects of the environment. Then, we examined whether these effects of attractiveness were sensitive to situational factors. Prior to viewing the scenes, perceivers were subjected to a threat or social approach manipulation. In accordance with the hypothesis that males have higher aggression potential than females, there were no differences in fixation durations between attractive and non-attractive male faces in the threat condition. In the social approach condition, both female and male attractive faces received longer looks. These results suggest that the aesthetic response to faces orients people not only to the pleasing aspects of their environment, but also to those features that are adaptively relevant. Recently, we applied the same design to perceiver of varying sexual orientation and found interesting interaction (Mitrovic, Tinio & Leder, subm). We also used variations of natural attractiveness - pairs of real, not embedded faces - and again confirmed that attractive faces are looked at for longer. The findings are discussed in respect to biological explanations of facial beauty.

8   FACE AESTHETICS: STATISTICAL IMAGE PROPERTIES OF FACE PHOTOGRAPHS AND ART PORTRAITS

GREGOR U. HAYN-LEICHSENRING[1,2], CLAUDIA MENZEL[1,2], CHRISTOPH REDIES[1,2]

1 Institute of Anatomy I, University of Jena School of Medicine, Germany.
2 DFG Research Unit Person Perception, Friedrich Schiller University Jena, Germany
⬜ gregor.hayn-leichsenring@med.uni-jena.de

We investigated statistical image properties of art portraits and face photographs and their association with subjective judgments of beauty and attractiveness. In particular, we focused on properties that can be processed at low levels in the visual system, such as Fourier slope, complexity and self-similarity. These image properties have been associated with hedonic value. To calculate these properties, we used Fourier transformation as well as the Pyramid of Histograms of Orientation Gradients (PHOG) method (Bosch, Zisserman, & Munoz, 2007). Face photographs and art portraits differ in their Fourier slope and PHOG self-similarity values, although both types of images are depicting human faces (Redies, Hänisch, Blickhan and Denzler, 2007; and unpublished data). Here, we analyzed artistic portrait paintings from eleven art periods (a subset from the JenAesthetics database; Amirshahi, Denzler, & Redies, 2013). Interestingly, PHOG self-similarity is similarly high in portraits across the compared art periods, while complexity values differ between them (Hayn-Leichsenring & Amirshahi, in prep.). Next, we investigated whether low-level image properties might affect the perception of facial attractiveness in veridical face photographs. We found that some of the calculated image properties (e.g., PHOG self-similarity) correlate with attractiveness ratings. When directly manipulating the Fourier slope of veridical face images, we found that images with shallower slopes were rated as more attractive (Menzel, Hayn-Leichsenring, Langner, Wiese & Redies, submitted).

9   DATA-DRIVEN METHODS FOR MODELING SOCIAL PERCEPTION OF FACES

ALEX TODOROV

Department of Psychology, Princeton University, Princeton, USA
atodorov@princeton.edu

Research shows that people form instantaneous impressions of other people based on facial appearance; b) agree in these impressions; and c) often act on these impressions. These findings suggest that it should be possible to model social perception of faces. However, reducing a high-level social attribution like trustworthiness to the physical description of the face is far from trivial. A major methodological problem is that the space of possible variables driving social perceptions is infinitely large, thus posing an insurmountable hurdle for conventional approaches. The alternative is data-driven approaches whose objective is to identify quantitative relationships between high-dimensional variables (e.g., visual images) and behaviors (e.g., perceptual decisions) with as little bias as possible. I describe a series of studies using reverse correlation methods based on judgments of randomly generated faces from a statistical, multidimensional face model; a vector space where every face can be represented as a vector in the space. These methods can be used to a) model evaluation of faces on any social dimension (e.g., trustworthiness), and b) to identify the perceptual basis of this evaluation. We can model both face shape and face reflectance and experimentally identify their contributions to social perception. These methods provide an excellent discovery tool for mapping configurations of face features to specific social inferences. The methods also have considerable promise for helping to identify the principles of neural coding of faces.

10   MEMORY FOR FACES, IMAGES OF FACES, AND OBJECTS

A. MIKE BURTON, REGINE ARMANN & KAY RITCHIE

School of Psychology, University of Aberdeen, United Kingdom
m.burton@abdn.ac.uk

Recognition memory for pictures of objects is known to be particularly good. Memory for faces is often held to be very good too, though the evidence is more equivocal. In this talk I will attempt to separate different aspects of the problem that are sometimes confounded. In particular, I will draw out performance differences in memory for familiar and unfamiliar faces, as well as task differences requiring memory for a person or a particular photo. I will present evidence that, in some circumstances, memory for specific photos of faces is not particularly good.   I will relate this to theories of face representation, and the levels of abstraction contained in these representations.

11   CHANGING VOICES: GETTING AT THE EFFECTS OF PHONETIC CONVERGENCE IN CONTROLLED RECORDINGS

ADRIAN P. SIMPSON[1], SVEN KACHEL[2], MELANIE STEFFENS[2]

[1]*Institute of German Linguistics, University of Jena*
[2]*Department of Psychology, University of Koblenz-Landau*
Adrian.Simpson@uni-jena.de

A speaker's voice is a multiplex signal. Besides a linguistic message, speakers convey a range of other information about their regional and social origins, emotions, state of health, age, gender, sexual orientation, masculinity/feminity, at the same time maintaining a degree of distinctivity keeping one voice identifiable to

the exclusion of others. However, a speaker also varies their spoken output in response to who s/he is talking to or the context. A wealth of sociolinguistic studies have shown how output varies with the linguistic activity being engaged in. So, for instance, speakers reading word-lists or sentences have been found to produce forms closer to the standard, whereas a more natural conversational context will elicit more dialectal forms. A further source of individual variation is phonetic convergence, the phenomenon whereby speakers change their speech patterns immediately, or over a period of time, to approximate the speech patterns of others they are in direct contact with. In this talk we will examine some of the possible effects of phonetic convergence which arise from the laboratory context when we try to access the subtle phonetic patterns speakers exhibit when expressing their sexual orientation or masculinity/femininity. We will see that the gender of the experimenter alone can have a significant effect on basic acoustic parameters of speech being elicited under formal controlled conditions. We will not only offer this as an account for some of the variance we have found in our own data, but also for some of the somewhat ambivalent results presented in previous studies on the phonetic correlates of sexual orientation.

12   COPYING COMPETITORS? INTERDEPENDENCY MODULATES STIMULUS-BASED RETRIEVAL OF OBSERVED RESPONSES

CARINA GIESEN[1] & KLAUS ROTHERMUND[1,2]

1 DFG Research Unit Person Perception, Friedrich Schiller University of Jena, Germany
2 Department of General Psychology II, Friedrich-Schiller-University of Jena, Germany
carina.giesen@uni-jena.de

We investigated whether stimuli are integrated with responses that are merely observed, but not executed by oneself, and examined the moderating role of mutual dependency between co-actors on the binding and retrieval of stimuli and observed responses. In the present experiment, a sequential prime-probe design was shared between two co-actors who took the roles of actor and observer in turns. Stimulus relation and compatibility between observed (prime) and to-be-performed (probe) responses was varied orthogonally within participants; interdependency between the pairs of participants (cooperation vs. competition vs. independence) was varied between participants. Results indicate that prime observers showed stimulus-based retrieval of observed responses when it was their turn to act in the two interdependent conditions, whereas prime observers in the independent condition did not. We conclude that binding and retrieval of stimuli and observed responses is a conditionally automatic process that is contingent on mutual dependency between actor and observer.

ABSTRACTS – POSTERS

1   INTERACTIONS OF VISUAL AND AUDITORY INFORMATION IN THE PERCEPTION OF SEXUAL ORIENTATION

LEONIE BACKOFEN[2], SONJA GAUKEL[2], SVEN KACHEL[2], MELANIE C. STEFFENS[2], & ADRIAN SIMPSON[1]

[1]Institute of German Linguistics, University of Jena
[2]Department of Psychology, University of Koblenz-Landau
    Adrian.Simpson@uni-jena.de

Previous research has found that men's and women's sexual orientation can be judged with a probability higher than chance if faces are presented. The present experiment tested whether sexual orientation is judged correctly with a higher probability when faces and speech samples (i.e., one sentence) are presented, as compared to faces only or speech samples only. Stimuli were still photographs (visual) and single read sentences (auditory) from 72 subjects equally distributed across heterosexual men, heterosexual women, gay men, and lesbians. Each of the stimuli was presented in the visual condition, the auditory condition, and the visual+auditory condition. N = 101 participants judged whether each stimulus was heterosexual or homosexual. Findings show that speech is much worse a signal for sexual-orientation judgments than face is. Speech is a better signal for male than female stimuli. For female stimuli, judgments in the visual+auditory condition are not better than in the visual condition. Additionally, the tendency to respond "heterosexual" was stronger for female than male stimuli.

2   ATTRACTIVENESS, TYPICALITY AND DISTINCTIVENESS IN FACE SPACE: PERCEPTION OF FAMILIAR AND UNFAMILIAR FACES AND THEIR ANTI-FACES

STELLA J. FAERBER[1,2], JÜRGEN M. KAUFMANN[1,2], HELMUT LEDER[3], STEFAN R. SCHWEINBERGER[1,2]

1 Department for General Psychology, Friedrich-Schiller-University, Jena, Germany
2 DFG Research Unit Person Perception, Friedrich-Schiller-University, Jena, Germany
3 Department of General Psychology and Methodology, University of Vienna, Vienna, Austria
    stella.faerber@uni-jena.de

According to the norm-based version of the face space model (Leopold et al, 2001; Valentine, 1991), each face and its anti-face (which deviates from the norm in exactly opposite direction as the face) by definition is equidistant to the norm. According to the averageness hypothesis (Langlois & Roggman, 1990) the attractiveness of a face increases with its absolute proximity to the norm or prototype (cp. Potter & Corneille, 2008).Thus, an anti-face should have the same level of perceived typicality, and there should also be a degree of correlation between perceived attractiveness of a face and its corresponding antiface. However, based on reports that (episodic) familiarity affects both perceived attractiveness and typicality (Peskin & Newell, 2004), we decided to investigate the role of face familiarity for rated attractiveness, typicality (deviation-based), and distinctiveness (face in the crowd, FITC) of celebrity faces and their corresponding anti-faces. In our design, we considered recent evidence that typicality and distinctiveness are related to perceived attractiveness of a face in qualitatively different ways (Wiese et al, 2013). Here we tested the role of familiarity with a face and ratings of attractiveness, typicality (DEV), and distinctiveness (FITC) of this face and its specific anti-face. Our results

show (1) larger perceived attractiveness for faces than for their corresponding anti-faces, largely independent of familiarity, and larger perceived attractiveness for W-faces compared to A-faces, (2) similar perceived typicality for unfamiliar faces and their anti-faces, in line with our hypothesis, and (3) much larger FITC-distinctiveness for faces than their anti-faces, with this effect being largely confined to familiar faces. Overall, our findings suggest a prominent role of familiarity for perceptions of facial distinctiveness and typicality.

3   COOPERATION IN SOCIAL GROUPS: CHEATER MEMORY IN INTERGROUP CONTEXTS

STEFANIE HECHLER, FRANZ J. NEYER, THOMAS KESSLER

DFG Research Unit Person Perception, Friedrich Schiller University of Jena, Jena, German

   stefanie.hechler@uni-jena.de

The maintenance of high-level cooperation demands specific cognitive abilities to coordinate group members through common norms. Cheaters or norm-deviants within the ingroup must be remembered to avoid exploitation by them. We assumed higher efficiency of memory of ingroup cheaters compared to outgroup cheaters. Additionally, we expected individual differences in cheater processing, which are linked to differential concern about norm deviance (e.g., authoritarianism). In a series of experiments (N=370) we presented and recalled faces and behavioral descriptions of in- and outgroup targets. Cheating behavior was implicated through unfair dictator game decisions (exp. 1), student misbehaviors (exp. 2), and general norm transgressions (exp. 3). We applied multinomial models to disentangle memory processes and guessing biases. Results confirm that source memory is highest for ingroup cheaters. Participants' guessing indicates the assumption of outgroup cheating. Finally, authoritarianism is associated with a better source memory for ingroup norm deviants, but not for other targets.

4   THE RELATIONSHIP BETWEEN STIMULUS REPETITIONS AND FULFILLED EXPECTATIONS

MAREIKE GROTHEER[1,2], GYULA KOVÁCS[1,2]

1 Institute of Psychology, Friedrich Schiller University of Jena, Germany
2 DFG Research Unit Person Perception, Friedrich Schiller University of Jena, Germany

   mareike.grotheer@uni-jena.de

Several neuroimaging studies showed that fulfilled expectations increase the magnitude of repetition suppression (RS) in the face-selective visual cortex. However, previous fMRI studies did not allow a distinction between the reductions of the response due to stimulus repetitions and fulfilled expectations (expectation suppression, ES). In most previous studies repetitions and expectations were not independent from each other as repetitions occurred more often when they were expected and less often when they were not expected, thereby confounding RS with ES. To overcome this confound, we presented pairs of female and male faces that were either repeating or alternating with an overall probability of 50-50%. Orthogonally to this, the gender of the first face in each pair signaled with 75% accuracy whether repetitions or alternations were more likely to occur. We found significant RS in FFA, OFA and LO. In addition, these areas showed significant (in LO only marginally significant) reduction of the response for expected when compared to surprising trials. Moreover, the effects of RS and ES were always additive rather than interactive in our ROIs. This implies that stimulus repetition and fulfilled expectations can be dissociated from one another in terms of their effects on the neural responses.

5   REPETITION PROBABILITY EFFECTS IN SCHIZOPHRENIA

GYULA KOVÁCS[1,2], LISA MÜNKE[3], MAREIKE GROTHEER[1,2], IGOR NENADIC[3]

[1]Institut of Psychology
[2]DFG Research Unit Person Perception, Friedrich Schiller University of Jena, Jena, Germany
[3]Department of Psychiatry and Psychotherapy, Universitätsklinikum Jena, Germany
gyula.kovacs@uni-jena.de

Several major symptoms of schizophrenia can be conceptualised as impairments in interpretation of sensational experiences and contextual regularities. These functional deficits may be due to abnormalities of the feedback connections between prefrontal and posterior (occipito-temporal) regions. Several recent studies in healthy participants point towards the role of these feedback connections in determining the repetition related suppression (RS) of the neural response, suggesting predictive processes to modulate neural responses in sensory areas. Here we used fMRI to test the modulatory effects of repetition probability on RS in patients with schizophrenia as these effects might be related to the observed perceptual impairments. We studied fourteen patients with remitted schizophrenia (SZ) and fourteen age and gender matched healthy controls (HC) with fMRI in a paradigm that manipulates repetition probability (p(rep)). We presented pairs of face stimuli that could either be repeated or alternating in blocks with high (75%) or low (25%) repetition probabilities thereby modulating the subjects' perceptual expectation. Contrary to our hypothesis, both SZ and HC showed significant modulation of RS by p(rep) similarly in the face selective areas of the occipito-temporal cortex (FFA, OFA) as well as in the object-selective LO. These interactions were due to the larger RS in repetition blocks as compared to alternation blocks in all areas investigated. Neither RS nor its modulation by p(rep) was significantly different between our two participant groups. These results reveal that neither RS nor its modulation by perceptual expectation are affected by schizophrenia and suggest intact feedback connections, subserving predictive processes in SZ.

6   HAPPY IS COMPLEX AND NEUTRAL IS BRIGHT: STATISTICAL IMAGE PROPERTIES OF FACE PHOTOGRAPHS SHOWING DIFFERENT EMOTIONS

CLAUDIA MENZEL[1,2], OLIVER LANGNER[1,3], GREGOR HAYN-LEICHSENRING[1,2], CHRISTOPH REDIES[1,2]

1 DFG Research Unit Person Perception, Friedrich-Schiller-University Jena, Jena, Germany
2 Experimental Aesthetics Group, Institute of Anatomy I, University Hospital Jena, Germany
3 Department of Neurology, University of Lübeck, Germany
claudia.menzel@uni-jena.de

Emotional stimuli, especially faces, elicit various behavioral and neurophysiological responses, even after brief exposure. To shed more light onto the mechanisms of emotion perception, we analyzed statistical image properties of face photographs. We used images from four face databases depicting a total of 299 individuals who showed either four, six, seven or eight different types of emotions, respectively. We tested whether the type of emotion had an effect on the analyzed image parameters: mean luminance, overall Fourier power, the slope of the radially averaged Fourier power spectrum, as well as measures that were calculated using the pyramid histogram of oriented gradients (PHOG; self-similarity, complexity and anisotropy). Over all databases a happy, angry or neutral expression affected these image properties. Additionally, within a given database all tested image properties differed with facial emotion. Since basic image properties, such as luminance or spatial frequency content affect early processing of visual stimuli, we recommend that such properties should be monitored in neurophysiological experiments. Our results also suggest that information on emotions might be carried by image properties processed at low levels of the visual system.

7   EFFECTS OF EMOTIONAL INTENSITY ON ERPS IN FACE PERCEPTION DURING AN ATTENTIONAL LOAD STUDY

MIRIAM MÜLLER-BARDORFF, NICOLE BRAUN, MARTIN MOTHES-LASCH, CLAUDIA SCHULZ, AND THOMAS STRAUBE

Institute of Medical Psychology and Systems Neuroscience, Münster, Germany
m.mueller-bardorff@uni-muenster.de

Although a large number of studies investigated the electrophysiological signature of emotional face processing, so far little is known about the impact of emotional intensity. We developed a database of portrait images of 33 models posing six basic emotions at three different intensities plus neutral expressions. All stimuli were rated for emotion, intensity, arousal, valence, distinctiveness, and attractiveness. For the present EEG study, a subset of 90 images was selected containing angry (high and low intensity), happy (high and low intensity), and neutral faces from 18 Caucasian models. During the EEG experiment, facial stimuli were presented centrally, superimposed by two white horizontal bars differing in length. Participants were instructed to indicate the larger/shorter bar of the two and perceptual load (high, low) was varied by the difference between the bars. Although facial stimuli were not task-relevant, analyses of ERPs revealed significant effects of emotional intensity and valence on N170, EPN, and LPP. Significant load effects emerged for late positive potentials (LPPs) and did not interact with the effects of emotional intensity. Interestingly, modulations by emotional intensity were maximal at inferior-temporal sites for the time window of the N170.

8   RECOGNITION AND CATEGORIZATION OF OWN- AND OTHER-AGE FACES IN ADULTS AND CHILDREN: TWO SIDES OF THE SAME COIN

VALENTINA PROIETTI, VIOLA MACCHI CASSIA

Department of Psychology, University of Milano-Bicocca, Italy
v.proietti@campus.unimib.it

Humans are experts at facial recognition, especially for faces with which they have the most experience (e.g., own-race faces are recognized more accurately than other-race faces). Nevertheless, the speed with which adults categorize faces is greater for unfamiliar than for familiar faces (e.g., own-race faces are categorized faster than other-race faces), likely because categorization and recognition rely on the extraction of different types of information (categorical versus individual information, respectively). Here, we extend evidence of this mirror effect of recognition versus categorization to another facial dimension, namely age, and explore the developmental trend of this effect in preschool-aged children and adults. Age is known to affect recognition performance of both adults and young children in the form of a recognition advantage for adult compared to infant or child faces. We investigated the speed and accuracy with which adults (Experiment 1) and children (Experiment 2), with and without experience with child faces, recognize and categorize adult and child faces. In Experiment 1, adults with limited experience and adults with extensive experience (preschool teachers) with children performed a recognition and a categorization task with adult and child faces. In Experiment 2, 4-year-olds with and four years-olds without an older sibling (+1-6 years) performed a recognition and a categorization task with the same adult and child faces used in Experiment 1. In Experiment 1, only adults who had limited experience with children showed the typical own-age bias (i.e., higher accuracy for adult than for child faces) in the recognition task (p < .05), whereas the recognition performance of preschool teachers did not differ for adult and child faces (p > .90). Nevertheless, both groups of adults categorized child faces faster than adult faces (ps < .03). In Experiment 2, children without an older sibling were more accurate in the recognition of adult faces than child faces (p <. 04), whereas children with an older sibling showed comparable accuracy in the recognition of both face types. Neither children with nor children without an older sibling showed a significant

difference in performance in the categorization of adult and child faces (ps >.10). This study provides novel evidence that the opposing recognition versus categorization effect, seen in adults for race, extends to another face dimension: Age. Specifically, in adulthood, adult (familiar) faces are recognized more accurately than child (unfamiliar) faces and child faces are categorized faster than adult faces, in the same way in which own-race faces are recognized better and categorized less efficiently than other-race faces. This opposing recognition vs categorization effect, however, was not evident in 4-year-olds who showed a recognition advantage for adult faces, but did not exhibit the opposite categorization advantage for child faces. Further, our results confirm the effect of experience with specific face ages on recognition, but not categorization, ability, at least in adults. Overall, results emphasize the functional importance of experience in shaping recognition more than categorization abilities in early childhood and across the lifespan.

9   NEURAL CORRELATES OF PERCEPTUAL NARROWING FOR ADULT FACES IN 9-MONTH-OLD INFANTS

VALENTINA PROIETTI, STEFANIA CONTE, ERMANNO QUADRELLI, MARTA RIGOLDI, CHIARA TURATI, VIOLA MACCHI CASSIA

Department of Psychology, University of Milano-Bicocca, Italy
v.proietti@campus.unimib.it

Adults are experts in face recognition, and this expertise is refined by experience. For example, adults are better at recognizing categories of faces with which they have abundant experience, such as human (vs. monkey) faces, own-race (vs. other-race) and own-age (vs. other-age) faces. Recent evidence suggests that these biases in adults' face recognition have their origin in the earliest stages of development, as part of a general process of perceptual narrowing through which perceptual abilities in different perceptual domains tune to the stimulus categories that are most frequent in the infant's environment. Although the functional expressions of this developmental process have been extensively explored through behavioral paradigms, studies investigating the neural underpinnings of perceptual narrowing are limited. Here we investigated the neurophysiological counterpart of perceptual narrowing toward adult faces by measuring event-related potentials (ERP) evoked by upright and inverted adult and child faces in 9-month-old infants with limited experience with older children. Face age and orientation were tested within-subjects, and the extent to which each factor modulates the latency/amplitude of infant face-sensitive components (N290, P400) was measured. While no effect emerged for the P400, the N290 showed sensitivity to stimulus inversion for adult faces (larger amplitude to inverted vs. upright faces) but not for child faces, indicating specificity of infant ERP responses to adult faces. These findings suggest that cortical face processing system is already specialized for adult faces at 9 months and that the N290, as opposed to the P400, is more likely to correspond to the developmental precursor of the N170. The extent to which cortical specialization for adult faces is modulated by visual experience is currently under investigation through the testing of a second group of 9-month-olds who, from the time of birth, have been exposed to the face of an older sibling (aged 3-6 years at participants' birth), a condition which is known to affect 9-month-old infants' ability to discriminate child faces in tasks exploiting behavioral looking paradigms.

10   FACE GENDER INFLUENCES FREQUENCY-TUNING OF THE VISUAL SYSTEM

SWANTJE PULS[1,2], OLIVER LANGNER[1,2], KLAUS ROTHERMUND[1,2]

1 Department of General Psychology II, Friedrich-Schiller-University of Jena, Germany
2 DFG Research Unit Person Perception, Friedrich Schiller University of Jena, Germany
swantje.puls@uni-jena.de

It is a well-known finding that, when presented with emotional faces, people tend to ascribe fear and happiness to females and anger to males. In an attempt to explain the mechanism behind those typical stereotyping-effects, we utilized the finding of Smith and Schyns (2009), who showed that different spatial frequencies are informative for different emotional expressions. Together with the finding that there is an actual imbalance in emotional expressions, displayed by men and women, one could argue that it is a good strategy to focus on gender specific emotions when gender is already known. Our hypothesis is that people tune their visual system to high spatial frequencies when seeing a female face in order to be more sensitive to fear expressions. When seeing a male face on the other hand, people tune their system to lower spatial frequencies in order to detect anger. In our experiment participants in each trial saw a neutral face that either became emotional or turned into a gabor-patch. Indeed, there was a gender-effect on gabor-frequency-reactions at least in one of two contexts. Thus we found evidence that gender information results in spatial frequency tuning of the visual system.

11   TASK INSTRUCTIONS AND IMPLICIT THEORY OF MIND

DANA SCHNEIDER[1,2], ZOIE E. NOTT[1], PAUL E. DUX[1]

1 School of Psychology, The University of Queensland, Australia
2 Institute of Psychology, Friedrich Schiller University of Jena, Jena, Germany
dana.schneider@uni-jena.de

It has been hypothesized that humans are able to track other's mental states efficiently and without being conscious of doing so using their implicit theory of mind (iToM) system. However, while iToM appears to operate unconsciously recent work suggests it does draw on executive resources (Schneider, Lam, Bayliss, & Dux, 2012) bringing into question whether iToM is engaged efficiently. Here, we examined other aspects relating to automatic processing: The extent to which the operation of iToM is controllable and how it is influenced by behavioral intentions. This was implemented by assessing how task instructions affect eye-movement patterns in a false-belief location change task. One group of subjects was given no task instructions (No Instructions), another overtly judged the location of a ball a protagonist interacted with (Ball Tracking) and a third indicated the location consistent with the actor's belief about the ball's location (Belief Tracking). Despite differ- ent task goals, all groups' eye-movement patterns were consistent with belief analysis, and the No Instructions and Ball Tracking groups reported no explicit mentalizing when debriefed. These findings represent further evidence that human adults implicitly track the belief states of others in an uncontrollable and unintentional manner.

12   NEURAL BASIS OF GAZE PROCESSING IN SOCIAL ANXIETY

CLAUDIA SCHULZ[1], STEPHANIE BÖHME[2], BERND LANGOHR[3], MARTIN MOTHES-LASCH[1], THOMAS STRAUBE[1]

1 Institute of Medical Psychology and Systems Neuroscience, Muenster
2 Department of Psychiatry, Psychosomatics & Psychotherapy, University of Wuerzburg
3 Department of Biological and Clinical Psychology, University of Jena

claudia.schulz@uni-muenster.de

Individuals with social anxiety exhibit altered processing of directly gazing faces. In this event-related functional magnetic resonance imaging study, we investigated brain responses to angry, happy, and neutral faces with either direct or averted gaze in healthy control participants and individuals with social anxiety disorder (SAD), under a gender discrimination task. Compared to healthy controls, patients showed increased activation to direct vs. averted gaze across facial expressions in the insula and somatosensory cortex. This effect was more pronounced for angry and neutral compared to happy faces. These findings suggest a role of the insula and somatosensory cortex, i.e., areas implicated in self-awareness of a person's own body, in the processing of potential observer-directed threat in SAD.