

Research Seminars in General Psychology and Cognitive Neuroscience
 ("Forschungskolloquium für Absolventen, Doktoranden, und Mitarbeiter")

„General Psychology and Cognitive Neuroscience“

(Prof. Dr. Stefan R. Schweinberger)

Winter Term 2012/13

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<http://www2.uni-jena.de/svw/allgpsy/researchseminars.htm>

Event Schedule

04.02.2013	Carolyn S. Altman, Jena	Uncommonly typical: Attractiveness biases recognition memory for faces irrespective of distinctiveness – ERP evidence
28.01.2013	n.n.	n.n.
21.01.2013	Romi Zäske, Jena	On the Representation of Vocal Age and Gender
14.01.2013	n.n.	n.n.
07.01.2013	Nadine Schimpf, Jena	Effects of bimodal adaptation on voice gender perception
17.12.2012	Helene Kreysa, Jena/Bielefeld	Speaker gaze and other context effects on spoken sentence comprehension
10.12.2012	Jessica Komes, Jena	Combined own-age and own-race biases in face memory in elderly participants
03.12.2012	Nathaniel Ashby, Bonn/Essex	The role of attention and perspective in the valuation of risky prospects
26.11.2012	n.n.	n.n.
19.11.2012	Jan Ploetner, Jena	Individual differences and neuronal correlates of using internal and external features during face learning
12.11.2012	Herrman J. Müller, Munich	Pre-attentive and post-selective processing "pop-out" search tasks
05.11.2012	Martin Edwards, Louvain	The perceptual priming of action performance

Zäske, Skuk, Kaufmann, & Schweinberger

Jena

On the Representation of Vocal Age and Gender

Aftereffects of adaptation have revealed both selective and common coding of facial signals including identity and expression or gender and age. By contrast, dependencies in the processing of non-linguistic features in *voices* have rarely been investigated. Here we study bidirectional cross-categorical aftereffects of adaptation to vocal age and gender. Prolonged exposure to young (~20 yrs) or old (~70 yrs) male or female voices biased perception of subsequent test voices away from the adapting age (Exp. 1) and the adapting gender (Exp. 2). Vocal age aftereffects (VAAEs) were reduced but significant, when voice gender changed between adaptation and test relative to gender-congruent adaptor-test pairings (Exp. 1). This suggests that the VAAE relies on both, gender-specific and common age representations for male and female voices. Conversely, voice gender aftereffects (VGAEs) were not modulated by age-congruency of adaptor and test voices (Exp. 2). Instead, young voice adaptors generally induced larger VGAEs than old voice adaptors. This suggests common neural coding of gender in young and old voices with young voices being particularly efficient adaptors. This may be due to a more pronounced sexual dimorphism in young voices. In sum, our findings suggest that high-level processing of vocal age and gender are partially intertwined.

Schimpf, Zäske, & Schweinberger

Jena

Effects of bimodal adaptation on voice gender perception

Repeated exposure to male voices biases the perception of subsequent androgynous voices towards female and vice-versa. This contrastive voice gender aftereffect (VGAE) was attributed to high-level perceptual adaptation. However, it is unclear whether the VGAE is purely acoustically-based or driven by the perception of adaptors as male or female. Here we combined videos of articulating male and female face adaptors ($F_{\text{♂}}$ and $F_{\text{♀}}$) with either gender-congruent voices ($V_{\text{♂}}$ and $V_{\text{♀}}$), or perceptually androgynous voices ($V_{\text{?}}$) as determined individually. Voice gender classification was perfect for gender-congruent adaptors ($F_{\text{♂}}V_{\text{♂}}$ and $F_{\text{♀}}V_{\text{♀}}$), but was biased towards female for androgynous voices when paired with male faces ($F_{\text{♂}}V_{\text{?}}$), indicating a simultaneous contrast effect. Bimodal adaptation to gender-congruent adaptors caused a VGAE in subsequent test voices. Crucially, voice-ambiguous adaptors ($F_{\text{♂}}V_{\text{?}}$ and $F_{\text{♀}}V_{\text{?}}$) – rather than eliciting contrastive aftereffects in reference to face gender – elicited a VGAE according to the biased perception of these voices in bimodal adaptors. This is reminiscent of linguistic aftereffects for place of articulation (Bertelson et al., 2003). As the VGAE was elicited by physically androgynous voices when perceived as more female, it appears to result from *perceptual* rather than low-level acoustic voice representations.

Dr. Helene Kreysa

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Speaker gaze and other context effects on spoken sentence comprehension

Comprehension of a given sentence depends not just on its linguistic form and content, but also on its wider context. For example, assumptions about the information available to an interlocutor, pragmatic affordances of visible objects, and world knowledge can all facilitate comprehension very rapidly (e.g., Brown-Schmidt et al., 2008; Chambers et al., 2004; Kamide et al., 2003). I will begin by providing a brief general introduction to the study of language production, comprehension, and dialogue, focussing in particular on the so-called 'visual world paradigm' (Tanenhaus et al., 1995; Altmann & Kamide, 1999). In this experimental paradigm, participants' eye movements are recorded while they inspect simple scenes or arrays of objects in front of them. Simultaneously, they hear auditorily presented linguistic stimuli relating to the visual display. The pattern and timing with which they allocate attention to relevant scene areas provides insight into how the linguistic utterance is interpreted, and how this is affected by a variety of contextual cues. My own research has focussed on the role of the speaker's gaze direction as one such contextual cue (Kreysa, 2009; Kreysa & Pickering, *subm.*; Knoeferle & Kreysa, 2012; see also Hanna & Brennan, 2007; Staudte & Crocker, 2011). In the main part of my talk, I will describe a series of visual-world experiments which investigated how comprehension is affected by the ability to follow a speaker's gaze to what s/he is attending, as well as by the specific comprehension goal. Participants saw videos of a speaker who used German subject- and object-initial sentences (NP1–verb–NP2) to talk about depicted characters. We compared participants' fixations of the NP2 referent when they could see the speaker shift her gaze to this character with a condition where speaker was obscured. Our results highlight the importance of task demands for interpreting studies on spoken comprehension (Salverda et al., 2011). They also have interesting implications for how interlocutors establish joint attention and a shared perspective in conversation (Richardson et al., 2007; Kreysa, *in press*). More generally, they show that comprehension of identical linguistic material is affected by multiple interacting aspects of the context in which it is processed.