

REF: MS1

Supervisor: Martin Schürmann	Max no. of students: 8
Title:	Multisensory interaction in perception, spatial attention, and spatial representations
Initial Reading:	<p>Bulkin DA, Groh JM. Seeing sounds: visual and auditory interactions in the brain. <i>Current Opinion in Neurobiology</i> 2006: 16, 415-419</p> <p>Students will be advised of appropriate further readings by the supervisor dependent on the exact nature of the project.</p>
Further Description:	<p>Everyday percepts rely on the integration of information from several sensory modalities. Such integration can enhance the reliability of the percept and/or substitute for dysfunction in one sensory modality. For example, when subjects are presented with auditory and tactile stimuli of similar temporal patterns, hearing is facilitated (Schürmann et al. 2004). Brain imaging studies hint at shared neural substrates for auditory and tactile perception (Schürmann et al. 2006).</p> <p>Third-year projects address multisensory aspects of spatial attention (Farah et al. 1989, Schürmann et al. 2003) and spatial representations (Nuerk et al 2005): do spatial attention and spatial representations reflect modality-specific or supramodal processes?</p> <p>Experiments usually rely on visual and auditory stimuli that are presented (for example, in E-prime) to healthy volunteers.</p> <p>Student-suggested topics in the area of multisensory processes are welcome as long as they are feasible in the framework of a third-year project (enquiries: martin.schuermann@nottingham.ac.uk).</p> <p>Farah MJ, Wong AB, Monheit MA, Morrow LA. Parietal lobe mechanisms of spatial attention: modality-specific or supramodal? <i>Neuropsychologia</i> 1989: 27, 461-470.</p> <p>Nuerk HC, Wood G, Willmes K. The universal SNARC Effect: The association between number magnitude and space is amodal. <i>Experimental Psychology</i> 2005: 52, 187-194.</p> <p>Schürmann M, Caetano G, Jousmäki V, Hari R. Hands help hearing: facilitatory audiotactile interaction at low sound intensity levels. <i>Journal of the Acoustical Society of America</i> 2004: 115, 830-832</p> <p>Schürmann M, Caetano G, Hlushchuk Y, Jousmäki V, Hari R. Touch activates human auditory cortex. <i>Neuroimage</i> 2006: 30, 1325-31</p> <p>Schürmann M, Grumbt M, Heide W, Verleger R. Effects of same- and different-modality cues in a Posner task: extinction-type, spatial, and non-spatial deficits after right-hemispheric stroke. <i>Brain Research Cognitive Brain Research</i> 2003: 16, 348-358</p>