VWFA were activated sequentially and separately. Volleys of neural activity between the VWFA and inferior, middle and posterior superior temporal lobe highlighted the dynamic interactions between these language areas, suggesting that dynamic bidirectional interactions occur between the temporal and occipital lobes early in phonological word processing. For example, significant activation of the anterior inferior temporal lobe and the posterior VWFA occurred at approximately 90ms, with significant activation of the anterior VWFA and deactivation of the anterior inferior temporal lobe approximately 40ms thereafter. Anterior posterior volleys of activity occur once before terminal activation of the superior posterior temporal gyrus. These data imply that significant intercortical processing of the non-word stimuli occur prior to activation of the classically recognized VWFA and that the VWFA may not be an isolated area responsible for word decoding, but may be a module within an interactive circuit responsible for matching letter-word templates stored in other regions of the cortex.

**G112**

**PRAGMATICS AND PROSODY IN CONFLICT: THE CLOSURE POSITIVE SHIFT (CPS) IN INFORMATION STRUCTURAL PROCESSING** Ulrike Toepef, Kai Alterf; Max Planck Institute for Human Cognitive and Brain Sciences.

In the first experiment, contextually established (pragmatic) novelty and correction foci were presented to volunteers with either the matching or non-matching prosodic realization. The ERP-data show that a Closure Positive Shift (CPS; Steinhauer, Alter & Friederici, 1999) is evoked by the context-dependent perception of every pragmatic focus irrespective of the prosodic focus realization. Furthermore, the prosodic mismatch effect is reflected by a sustained posterior negativity. In a second experiment the contextual dependence of the CPS was explored in further detail. Volunteers were presented with dialogues that contextually establish either a pragmatic correction focus or no focus at all (all-given information) within an utterance. Again, these information types were either presented with a matching or non-matching prosodic realization. Here, the ERP-data indicate that the context implying the retrieval of a correction focus evokes a CPS in these pragmatically specified positions independent of their prosodic realization. The context determining no focus position, on the contrary, induces CPS-responses in the positions of the major prosodic boundaries of the utterance. Furthermore, posterior negativities indicate the detection of inadequate accent realization. Thus, in the presence of utterances embedded into contexts that allow for interpretation focus positions are structural units in speech. Given a context determining no information foci at all, major prosodic units serve to structure the encountered spoken message as shown by Steinhauer et al. (1999) for the perception on single sentence level.

**G114**

**THE COMPREHENSION OF GESTURE AND SPEECH: A FIRST FMRI STUDY** Reid Willemse, Adi Ozyiirek; C. C. Donders Centre for Cognitive Neuroimaging.

Although generally studied in isolation, action observation and speech comprehension go hand in hand during everyday human communication. That is, people gesture while they speak. From previous research it is known that a tight link exists between spoken language and such hand gestures. This study investigates for the first time the neural correlates of co-speech gestures and the neural locus of the integration of speech and gesture in a naturally occurring situation, i.e. as an integrated whole embedded in contextual information. FMRI data were gathered while subjects viewed a) meaningful and meaningless gestures in the absence of speech and b) the same meaningful gestures in the context of speech, time-locked to the verbal information in a sentence. First we tested whether co-speech gestures are recognized as meaningful actions without speech. In the second part, verbal and/or gestural content matched or mismatched the preceding speech context. Integration load was expected to vary with this manipulation, showing regions specific for and common to gesture and speech processing. No areas were activated stronger to meaningful gestures compared to meaningless gestures without speech. With speech, in reaction to increased integration load, both language and gesture recruited the left inferior frontal cortex. Parietal and temporal regions showed gesture and speech specific responses. We argue a) that co-speech gestures do not convey meaning on their own and b) that both types of information are integrated into the preceding context by left inferior frontal cortex.

**G116**

**PROBABILISTIC LEARNING AND JOINT ATTENTION** Katherine Turner, Leonard Froot, Molly Davies, R-A Mueller; University of Washington.

Joint attention refers to the ability of an individual (A) to coordinate her attention with a partner (B) typically by executing a behavior that A wishes B to perceive. Joint attention facilitates social communication and language use by grounding the individuals within a social context and promoting word-object mapping (Baldwin, 1991). Language processing studies have shown that infants can learn transitional probabilities between syllable pairs at 6 months of age.

This ability is a prerequisite for word segmentation in fluent speech and thus for the acquisition of word meanings in settings of joint attention. In typically developing children and in healthy adults, joint attention is rewarding because it provides meaningful and predictable information about the shared environment (Carpenter & Pennington, 2002). In autism, both the development of joint attention and joint attention itself is abnormal (Carpenter & Pennington, 2002). It is possible that language exposure is reduced in children with autism and by inference that autistic children would be less likely to detect word boundaries. This study asks whether children with autism and AS have difficulties learning that joint focus of attention provides meaningful and often probabilistic information about objects and actions in their environment.

**G118**

**RESPONSE BIAS IN PATIENTS WITH ALZHEIMER'S DISEASE**

Hyemi Chong, David Walk; Jill Waring, Andrea Baston; Max Planck Institute for Psycholinguistics. 

The goals of the present study were to examine the response bias of patients with AD: 1) in response to increased integration load, both language and gesture recruited the left inferior frontal cortex. Parietal and temporal regions showed gesture and speech specific responses. We argue a) that co-speech gestures do not convey meaning on their own and b) that both types of information are integrated into the preceding context by left inferior frontal cortex.

**G120**

**MEMORY FOR THE SEPTEMBER 11, 2001 TERRORIST ATTACKS IN ALZHEIMER'S DISEASE.**

Jill Waring, Hyemi Chong, Alice Sullivan; Jon Simons, Daniel Schacter, Andrew Baston; \(2\)Brigham & Women's Hospital, Harvard Medical School. 

In Alzheimer's disease (AD), memory deficits are associated with frontal lobe dysfunction and an impairment of joint attention. In AD, both the development of joint attention and joint attention itself is abnormal. It is possible that language exposure is reduced in children with autism and by inference that autistic children would be less likely to detect word boundaries. This study asks whether children with autism and AS have difficulties learning that joint focus of attention provides meaningful and often probabilistic information about objects and actions in their environment.

**G118**

**RESPONSE BIAS IN PATIENTS WITH ALZHEIMER'S DISEASE**

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The goals of the present study were to examine the response bias of patients with AD: 1) when discrimination is matched to that of controls; 2) in relation to their frontal lobe function; and 3) in relation to their degree of anosognosia. Discrimination and response bias were evaluated when subjects were given progressively longer study-test lists of unrelated words, and correlations were performed with a battery of tests previously associated with frontal lobe function.

We predicted that while discrimination of both patients with AD and controls would worsen with longer study-test trials, the patients would show a more liberal response bias than controls when matched for discrimination. We further predicted that subjects with greater frontal lobe dysfunction would show a more liberal bias than those with less dysfunction, and that patients who are less aware of their memory deficits would show a more liberal bias than those who are more aware. Our preliminary analyses suggest that when matched for discrimination, patients with AD do show a more liberal response bias than controls. The relationship between this bias, frontal lobe function, and anosognosia is discussed.