real words or phonotactically illegal in an event-related fMRI paradigm, utilizing a lexical decision task. All types of pseudo-words elicited a stronger hemodynamic brain response than real words in the bilateral superior temporal gyri. Real words produced stronger brain activations than pseudo-words in the bilateral angular gyrus, the bilateral posterior middle temporal gyri, the rostral and caudal cingulate gyrus and the pre-cuneus. When contrasted to opaque pseudo-words, transparent pseudo-words elicited a stronger brain response in the same temporo-parietal regions as real words. Our results provide further evidence for an involvement of the bilateral posterior middle temporal and angular gyrus in post-lexical semantic processing. The data also indicate that transparently derived pseudo-words are processed similarly to real words. In contrast, post-lexical semantic operations are blocked when opaquey derived pseudo-words are processed.

E 51 COGNITIVE AND NEURAL CORRELATES OF FAST, EFFORTLESS WORD LEARNING: AN MEG STUDY Christian Dabel, Markus Junghöfer, Benedikt Klauke, Caterina Breitenstein, Pienie Ziesal; University of Münster — Our study demonstrates how words of a novel language are rapidly and without effort integrated into an existing conceptual-lexical system. Untutored language learning involved coincidental presence of particular sound patterns with a specific object. This procedure was termed statistical learning (e.g. Breitenstein & Knecht, 2002). If words have to be learned, sound and pictures were paired more frequently than in a non-learned condition. Crossmodal priming before and after training revealed that stable connections between newly learned words and objects came into existence. Further exploration of the nature of these learning processes in an MEG study, comparing M400 responses to native and novel words before and after training. A clear M400 response was visible upon picture presentation, more strongly associated from the production of unprimed picture names at more frontal brain regions that encode form and meaning information that is weighted in how such forms are processed, it remains unclear whether such data can provide unequivocal evidence for the regular/irregular distinction. While studies have found differences in how such forms are processed, it remains unclear whether such data can provide unequivocal support for a dual-systems model; indeed, such findings are equally compatible with the connectionist view that all forms are processed via semantic, phonological and orthographic constraints. On this theory, differences in past tenses arise as a result of the degree to which verbs rely on information about either form (phonology/orthography) or meaning (semantics). The present study directly tested the predictions of this theory using a crossmodal priming task and fMRI at 4T. Fifteen adult participants were scanned as they performed a lexical decision task. The regularity of prime-target pairs was manipulated in order to identify priming-related fMRI signal suppression associated with regular (baked-bake), irregular (sang-sing) and part regular verbs (slept-sleep), compared to monomorphic phonologically (army-arm) or semantically (jacket-coat) related pairs and nonwords. A key finding was the observation of priming effects for irregulars in both LIFG and LMTG, showing equal priming effects. The (facilitative) effects were interpreted as morphological priming. In two experiments, we tried to replicate the effect in another language, Dutch, and to determine the electrophysiological correlates of morphological priming. Previous studies in language comprehension suggested that the brains' N400 response may reflect morphological processes. A long-lag word-picture priming design was used to collect behavioural data in Experiment 1 and event-related potentials (ERPs) in Experiment 2. While behavioural priming effects confirmed previous results and extended these to another language, preliminary analyses of Experiment 2 yielded large positive going ERPs before speech onset. The production of morphologically primed picture names seems to be dissociated from the production of unprimed picture names at more frontal electrode sites. These findings suggest a morphological processing component in speech production that cannot be reduced to semantic or form processing. Furthermore, the ERP effects that are related to morphological processes appear to be different for language production and comprehension.

E 52 BRAIN MECHANISMS OF WORD VERSUS PICTURE PROCESSING: EVIDENCE FROM A FMRI STUDY IN CHINESE Xiaoyi Wang, Neng Hu, Haiyan Zhou, Yue Xu, Jie Lu; Hua Shu; Beijing Normal University, Beijing, China; Xuexiu Wu Hospital, Capital Medical University, Beijing, China — The goal of this research was to investigate the neural basis of specific components of word and picture processing and their interaction by a 2(Chinese word versus picture) x 2(dangerous judgment versus covert naming task) design. Subjects were asked to name silently or make dangerous judgment with (1) two-syllable Chinese words (e.g. &32;handappel&32; [eating apple] not &32;han.dappel&32; dots indicate syllable boundaries). Recently, the production of morphologically complex words in German has been shown to facilitate the subsequent production of picture names that were part of the previously produced complex words (Dohmes et al. [2004]; Brain & Language). The (facilitative) effects were interpreted as morphological priming. In one experiment, we tried to replicate the effect in another language, Dutch, and to determine the electrophysiological correlates of morphological priming. Previous studies in language comprehension suggested that the brains' N400 response may reflect morphological processes. A long-lag word-picture priming design was used to collect behavioural data in Experiment 1 and event-related potentials (ERPs) in Experiment 2. While behavioural priming effects confirmed previous results and extended these to another language, preliminary analyses of Experiment 2 yielded large positive going ERPs before speech onset. The production of morphologically primed picture names seems to be dissociated from the production of unprimed picture names at more frontal electrode sites. These findings suggest a morphological processing component in speech production that cannot be reduced to semantic or form processing. Furthermore, the ERP effects that are related to morphological processes appear to be different for language production and comprehension.

E 53 THE ELECTROPHYSIOLOGICAL CORRELATES OF MORPHOLOGICAL PRIMING IN LANGUAGE PRODUCTION Dirk Koester, Rick Glesers, Niels O. Schiller; 1Maastricht University, 2Leiden University, Leiden Institute for Brain and Cognition — Knowledge about the (morphological) make-up of words is (can be) essential for speech production of complex words ("hand.appel" [eating apple] not "han.dappel"; dots indicate syllable boundaries). Recently, the production of morphologically complex words in German has been shown to facilitate the subsequent production of picture names that were part of the previously produced complex words (Dohmes et al. [2004]; Brain & Language). The (facilitative) effects were interpreted as morphological priming. In two experiments, we tried to replicate the effect in another language, Dutch, and to determine the electrophysiological correlates of morphological priming. Previous studies in language comprehension suggested that the brains' N400 response may reflect morphological processes. A long-lag word-picture priming design was used to collect behavioural data in Experiment 1 and event-related potentials (ERPs) in Experiment 2. While behavioural priming effects confirmed previous results and extended these to another language, preliminary analyses of Experiment 2 yielded large positive going ERPs before speech onset. The production of morphologically primed picture names seems to be dissociated from the production of unprimed picture names at more frontal electrode sites. These findings suggest a morphological processing component in speech production that cannot be reduced to semantic or form processing. Furthermore, the ERP effects that are related to morphological processes appear to be different for language production and comprehension.