coupling between orthography and phonology in writing Chinese characters with dictation by manipulating the O-to-P consistency (measured by the phonetic consistency) and P-to-O consistency (the homophone density, the number of characters sharing exactly the same pronunciation). Participants would hear 108 monosyllabic Chinese spoken words, and then were asked to write down the corresponding characters. These candidates for orthographic outputs were divided into four conditions based on their phonetic consistency (high/low) and homophone density (high/low). The event-related potentials (ERPs) to the spoken words revealed an interaction between phonetic consistency and homophone density on N400 and typical homophone density main effect at the later time window (600-800msec). These findings support the reverberation of the O-to-P consistency effect in Chinese writing to dictation.

**F63**

**LEVELS OF VISUAL WORD PROCESSING IN TYPICAL ENGLISH SPEAKING ADULTS: AN FMRI STUDY**

Elpis Pavlidou1,2, W. Einar Menc1, Dina L. Moore1, Stephen J. Frost1, Kenneth R. Pugh1,2,3; The University of Edinburgh, 1Haskins Laboratories, 2Southern Connecticut State University, 3University of Connecticut, 4Yale University — We examined the effects of different levels of visual word processing on the neural circuitry for reading in 20 (10 males; 10 females) neurologically normal native English speakers (20-46 years, Median = 28). Behavioral and neuroimaging data were obtained from three experimental conditions, which increased the degree of processing demands (i.e. simple naming < Go/No-Go lexical < Go/No-Go semantic ). We manipulated the spelling-to-sound consistency of the words within each task and stimuli were matched on frequency, number of letters, and on number and summed frequency of friends (words with the same spelling and pronunciation of the word body, e.g., MILL vs. PILL) and enemies (words with the same spelling of the word body but a different pronunciation, e.g., PINT vs. MINT). Tasks were conducted in separate functional imaging runs. We observed that as the demands on processing increased so did the role for posterior reading areas, including the middle temporal gyrus (MTG) and the angular gyrus (AG) as well as the connectivity between these areas. Thus, the role of AG in reading may go beyond its proposed involvement in the mapping of letters to phonemes. Analyses on the effects of consistency of words confirmed the involvement of more posterior regions of inferior frontal gyrus (IFG) in phonological processing: inconsistent words activate IFG more than consistent due to resolving competing phonological codes. In line with developmental studies, we speculate that this anterior system operates in close conjunction with the temporoparietal system to decode new words during normal reading development.

**F64**

**CLASSIFIER INFORMATION AFFECTS SPEECH PRODUCTION: ELECTROPHYSIOLOGICAL EVIDENCE FROM OVERT SPEECH IN MANDARIN CHINESE**

Man Wang1,2, Yiya Chen1,2, Niels O. Schiller1,2; 1Leiden Institute for Brain and Cognition (LIBC), Leiden, The Netherlands, 2Leiden University Centre for Linguistics (LUCfL), Leiden, The Netherlands — The current study investigated the role of classifier selection in speech production in Mandarin Chinese. This study asked native Mandarin speakers to name pictures using the picture-word interaction paradigm in two different tasks while measuring their electroencephalogram. Bare noun naming yielded both semantic congruency and classifier congruency effects. Participants also named the same pictures in a noun phrase consisting of the noun and the response position. To test whether word learning in this paradigm represents semantic learning, response learning, or a mixture of both, we independently varied color and response contingencies. We found strong evidence for response learning but none for semantic learning. Thus, this implicit learning procedure seems to lack the prerequisites necessary for the semantic integration of novel words. Nevertheless, because such a low-level investigation of novel word integration allows to exclude many potentially contributing factors, we consider it a valuable complement to the more natural and more complex studies on novel word learning.

**F65**

**IMPLICIT LEARNING OF NOVEL COLOR WORDS IN A MANUAL STROOP TASK? - DISTINGUISHING RESPONSE LEARNING FROM SEMANTIC LEARNING**

Sebastian Geukes1, Dirk Vorberg1, Pieien Switzerland2; 1University of Muenster, Germany — In the manual version of the Stroop task, participants are asked to press the button whose color corresponds to a presented word’s text color. If the word is a color word that is congruent to the text color, responses are typically slower compared to the case where the color word is congruent to the text color. If in such a task, pseudowords are presented instead of color words, and if each of the pseudowords is presented in one of the colors more frequently than in the others, a similar but smaller congruency effect emerges over time. This phenomenon promises to be an interesting approach for the investigation of basic semantic integration effects in novel word learning. However, because this paradigm includes a fix layout of colored buttons, it is unclear whether the learned association is that of the word and the color meaning or that of the word and the response position. To test whether word learning in this paradigm represents semantic learning, response learning, or a mixture of both, we independently varied color and response contingencies. We found strong evidence for response learning but none for semantic learning. Thus, this implicit learning procedure seems to lack the prerequisites necessary for the semantic integration of novel words. Nevertheless, because such a low-level investigation of novel word integration allows to exclude many potentially contributing factors, we consider it a valuable complement to the more natural and more complex studies on novel word learning.

**F66**

**NEUROCOGNITIVE PROPERTIES OF CONCATENATIVE AND NON-CONCATENATIVE MORPHOLOGY IN ARABIC: EVIDENCE FROM MULTIVARIATE FMRI ANALYSES.**

Francesca Carota1, Sami Boudelal1,2, Mirjana Bozic1, William D. Marslen-Wilson1; 1Neurolex Group, Department of Psychology, Downing Site, University of Cambridge, Cambridge CB2 3EB, UK, 2Department of Linguistics, United Arab Emirates University, Po Box 17771 Al Ain, UAE — Results from Indo-European languages suggest that morphological derivation activates a bilateral fronto-temporal network underlying whole-form access processes, whereas inflection involves a left-lateralised fronto-temporal subsystem specialised for grammatical combinatorial processes (Bozic et al. 2010; 2013). However, it is unclear whether these patterns also hold for typologically more distant languages. Recent FMRI work on the Semitic language, Arabic, analysed using classical univariate methods, suggested that non-concatenatively complex words (kaatib, “writer”, derived by interleaving roots ktb, “writing” and word patterns -a-‘-, “agent noun”) as well as concatenatively complex words (kitab=uhuaa, “her book”), formed by linearly adding an inflexional affix to a non-concatenative stem) activated the same left-lateralised fronto-temporal network as supports concatenative inflection in English and in Slavic languages. Here we explored the neurocognitive properties of Arabic morphology using multivariate Representational Similarity Analysis (RSA: Kriegeskorte et al., 2006) to ask whether differences in morphological organization were coded in neural activation patterns across key fronto-temporal regions. Brain responses to non-concatenative and concatenative complexities were correlated to theoretical models that predict distinct similarity-patterns for each process, using partial correlation to separate out process-specific similarity effects. RSA revealed fine-grained fronto-temporal similarities between non-concatenatively complex words in bilateral inferior frontal areas (BA45-47), left temporal pole and left inferior temporal areas, related to semantic comprehension. In contrast, concatenative complexity was correlated with left-lateralised inferior frontal (BA44) and bilateral superior/middle temporal areas, relevant to the processing of syntactic structure. These results suggest subtle underlying parallels and differences in the neural encoding of morphological functions across contrasting language families.