

techniques to investigate abnormal cortical and subcortical involvement for language comprehension in TBI are scant. The present study investigates structural and functional deficits in language pathways and their associations with figurative language impairment in mTBI patients. Thirty-eight mTBI patients (aged 40 ± 13.51 year old, 11 female, 27 male) and 28 matched controls were scanned for diffusion images. Among the 66 subjects, 11 patients (aged 39 ± 10.51 year old, 3 females, 8 males) and 11 matched controls participated in an fMRI experiment, where they had to judge whether each sentence had a positive or negative meaning. We had three conditions: Literal sentences, conventional metaphors, and novel metaphors. Patients showed lower fractional anisotropy (FA) values and higher mean diffusivity (MD) values in almost all types of tracts. Decreases in fiber characteristics such as fiber count, volume and density suggested a large-scale white matter deterioration not restricted to language-related tracts. The regions of interest analysis of the fMRI experiment indicated that controls significantly activated more left inferior frontal gyrus (LIFG) for novel metaphor comprehension than TBI patients ($p < 0.05$). The structural and functional imaging results together suggest that frontal and global disconnectivity in TBI might both contribute to their deficits in figurative language comprehension.

Lexical Semantics

C34 THE COMPREHENSION OF EXOPHORIC REFERENCE:

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An important property of language is that it can be used exophorically, for instance in referring to entities in the extra-linguistic context of a conversation using demonstratives such as “this” and “that”. Despite large-scale cross-linguistic descriptions of demonstrative systems, the mechanisms underlying the comprehension of such referential acts are poorly understood. Therefore, we investigated the neural mechanisms underlying demonstrative comprehension in situated contexts. Twenty-three participants were presented on a computer screen with pictures containing a speaker and two similar objects. One of the objects was close to the speaker, whereas the other was either distal from the speaker but optically close to the participant (“sagittal orientation”), or distal from both (“lateral orientation”). The speaker pointed to one object, and participants heard sentences spoken by the speaker containing a proximal (“this”) or distal (“that”) demonstrative, and a correct or incorrect noun-label (i.e., a semantic violation). EEG was recorded continuously and time-locked to the onset of demonstratives and nouns. Semantic violations on the noun-label yielded a significant, wide-spread N400 effect, regardless of the objects’ orientation. Comparing

the comprehension of proximal to distal demonstratives in the sagittal orientation yielded a similar N400 effect, both for the close and the far referent. Interestingly, no demonstrative effect was found when objects were oriented laterally. Our findings suggest a similar time-course for demonstrative and noun-label processing. However, the comprehension of demonstratives depends on the spatial orientation of potential referents, whereas noun-label comprehension does not. These findings reveal new insights about the mechanisms underlying everyday demonstrative comprehension.

C35 TEMPORAL GRADIENTS IN NARRATIVE PRODUCTION FOR EARLY VERSUS LATE ACQUIRED WORDS ACROSS

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Ribot argued for a temporal gradient to memory consolidation; earlier acquired memories are less susceptible to disruption as a function of neurological damage. Moreover, consolidation can take place over many decades and is thought to involve shifting representation from medial temporal lobe structures to the temporal neocortex. It is unclear whether Ribot’s predictions extend to language organization. Natural language is continually changing, and we must flexibly update our lexicons to reflect emergent cultural conventions. One possibility predicted by age-of-acquisition theories is that lexical representation is also temporally graded similar to a Ribot Effect in episodic memory. We examined narrative for words and people whose names emerged at specific points over the last six decades (e.g., slinky was invented in the 70s). Participants (N=40) included an equal number of younger ($\mu=20$ yrs) and older adults ($\mu=64$ yrs). Participants defined randomly, orthographically presented popular objects (e.g., slinky, smurf) (N=54) and famous people (e.g., Elvis Presley, Bill Clinton) (N=60). Stimuli represented decade blocks from 1950-2000s. Three independent raters coded narratives offline for accuracy, MLU, TTR, and mazes (e.g., fillers). Older (OAs) and younger (YAs) participants showed unique narrative characteristics for all measures. These differences were characterized by temporally graded divergence for recent (most similar) to remote (most divergent) words. Accuracy showed a crossover interaction; OAs described temporally remote items better than YAs whereas the reverse held for recent items. Lexical acquisition potentially represents a temporally graded phenomenon (a la Ribot). We address implications for theories of age-of-acquisition and the neurobiology of aging.

C36 EXPLICIT AND IMPLICIT METAPHORS: AN ERP STUDY

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Previous metaphor research has primarily focused on metaphors that are nominal (noun-based) and explicit (stating a clear metaphorical comparison or mapping). We tested the hypothesis that comprehension of explicit