The Importance of Youth—A Review and Experimental Study of Age of Acquisition Factors in Concrete Nouns and Action Verbs

The purpose of this presentation is to investigate the effects of age of acquisition (AoA) in lexical retrieval. An overview of AoA is given, distinguishing it from other variables such as concreteness, familiarity, frequency, imageability etc. A study was then conducted in order to investigate the effects of AoA on grammatical class in Spanish. The purpose of the investigation was two-fold: to examine and relate the reaction times of early and later-acquired action verbs and concrete nouns; and, to investigate the hypothesis that, if there are distinct neural representations of the two grammatical categories, a difference in subject performance will be registered.

This study utilized a lexical decision task in which a significant difference was found for early acquired words, distinct from any word frequency effect. A related investigation (Boulenger et al 2007) found similar results for French. However, the study presented is significant in that AoA was also found to be conflicting even with a language featuring fully transparent orthography, one which also has a reduced load on the lexical-semantic system.

Further, neuropsychological studies have implicated different brain networks in the processing of action verbs and concrete nouns; the double-dissociation of action verbs and concrete nouns could lead to unique AoA-effects for these two categories. This presentation applies the findings of the lexical decision experiment described above to supplement these neuropsychological studies, thus offering insight into the possible neural composition of grammatical class. Endorsement of distinct neural regions of at least broadly object and action in the brain, and perhaps also specifically nouns and verbs, is championed. Finally, an overview of various theoretical models is given, in attempt to contextualize the findings of this study. An argument is presented which favors an arbitrary framework model similar to that of Ellis & Lambon-Ralph (2000), causing AoA to be salient in the general modelling of the language acquisition process.

References: Boulenger, V., Decoppet, N., Roy, A.C., Paulignan, Y., & Nazir, T.A. (2007). Differential effects of Age-of-Acquisition for concrete nouns and action verbs: Evidence for partly distinct representations? Cognition, 103(1), 131-146.

Ellis, A. W., & Lambon Ralph, M. A. (2000). Age of acquisition effects in adult lexical processing reflects loss of plasticity in maturing systems: Insights from connectionist networks. Journal of Experimental Psychology: Learning, Memory, and Cognition, 24, 515-523.