NEUROLINGUISTIC STUDY FROM MORPHOLOGIC POINT OF VIEW

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ABSTRACT. The main theories of how words are represented and processed in the human brain, such as full-listing, full-parsing, and hybrid dual-route models, are covered in neurolinguistic approaches to morphology, as well as the experimental evidence that has been gathered to support these theories using various neurolinguistic paradigms (visual and auditory priming, violation, long-lag priming, picture-word interference, etc.) and techniques (EEG/event-related potentials [ERP]).

Key words: morphologically complex words, inflection, derivation, compounding, language comprehension, language production, morphological processing, visual priming, picture-word interference, long-lag priming, naming latencies, EEG/ERP, fMRI1.

Introduction. Psycholinguistics and neurolinguistics both offer experimental methods for studying linguistic phenomena. Both have to do with how the human mind processes words. Even though the line separating neurolinguistics from psycholinguistics is not always clear-cut, neurolinguistics—more so than psycholinguistics—is typically linked to at least the following two aspects: language processing in brain-damaged individuals and neuroimaging (as well as other brain monitoring/manipulation techniques) of brain functions related to language processing (see De Zubicaray & Schiller, 2019).

Materials and methods

This paper will approach morphological processing from a neurolinguistic angle. Its main focus will be on the issue of how morphologically challenging words are represented and processed in the mind. The meanings and forms (phonology, spelling, and/or gestures) are preserved in the mental lexicon, which is a component of human long-term memory (for a review, see Schiller & Verdonschot, 2015). The basic units—such as sounds/letters, phonemes/graphemes, morphemes, etc.—in terms of which lexical entries are structured in the mental lexicon must be specified since they will partially determine the architecture of the language processing system. Additionally, research on the processing and representation of morphologically complicated morpheme-based organization and word structure can be separated using words (Marslen-Wilson, Tyler, Waksler, & Older, 1994).

The representation and processing of morphologically complicated words raises a variety of intriguing challenges. For example, are all words—compound, derived, and inflected—stored in their entirety? Think of phrases like book, books, bookish, bookworm. It is obvious that we must have the idea of a (generic) book as well as its pronunciation (/bʊk/) and spelling (B-O-O-K) (or the accompanying gestures) stored in our mental vocabulary. What about the derived form BOOKISH or the inflected form books, though? Is the plural form of books also kept in the mental dictionary, or are words that end in -s more often formed based on their stem and the plural suffix -s? Decomposition for inflected forms is more likely than for derived forms since the meaning of a derived word is not just the sum of its parts, claim Schreuder, Grendel, Poulisse, Roelofs, and Van de Voort (1990). Are some morphologically intricate words created first, then saved, and then others? Reviewing the most popular models in the literature will come first. According to full-listing models (Butterworth, 1983, 1989; Mannelis & Tharp, 1977), morphologically complicated forms are retained in the mental lexicon as whole forms. In other words, forms like "bird," "birds," "birdy," "birdhouse," "jailbird," and so on would all have their own lexical entries and not be broken down into their individual morphemes, proving that morphology is not allowed under the full-listing hypothesis. Due to the lexicon's representation of all entire forms, such a model would be computationally straightforward in terms of lexical entry representation. It is conceivable that access to all of these kinds might be more challenging. Another potential drawback is the high storage cost associated with displaying all forms. Consider highly inflected languages like German, which have a complete case system in the nominal system.

Results.

Similar to electroencephalography (EEG) and event-related brain potential (ERP), functional magnetic resonance imaging (fMRI) is a noninvasive way to track brain activity; however, it is based on a fundamentally different idea: the metabolism of blood oxygen. When neurons are active, they need oxygen, which blood carried through arteries provides. The so-called Blood Oxygenation Level Dependent (BOLD) signal is used to gauge brain activity. That instance, although brain activity and oxygen consumption are strongly correlated, fMRI does not directly assess neural activity. The oxygen takes a few seconds to get to the area where it is needed. Although there are ways to reduce the time resolution from the seconds range, fMRI by nature has a lower time resolution than electrophysiological approaches like EEG/ERP. fMRI is currently the most popular neuroimaging method, and it provides a great window into the neuroscience of language. The neuroanatomical correlates of morphological priming remain controversial despite Indefrey and Levelt (2004) developing a neo-cortical road map of the speech production process. The left posterior superior and middle temporal gyri have been identified as the location of word-form encoding processes, including phonological code retrieval (Indefrey & Levelt, 2004). Given that morphological encoding is the initial step in word form retrieval, one may assume that morphological information should influence neuronal activity in the left posterior superior and middle temporal gyri.

More intriguing are the outcomes of the switch condition. Again, switching resulted in a considerable increase in naming latencies. However, the switch condition also produced a sizable morphological priming effect. Again, neither in the non-switch nor in the switch condition were there any differences found between the transparent and the opaque condition. Thus, Lensink et al. (2014) duplicated the impact in the switch condition studied by Verdonschot et al. (2012) utilizing different subjects and materials. Once more, there is no proof that an inhibitory control system actively suppresses the non-target language, at least not enough to reverse the effects of morphological priming.

Conclusion However, other researchers discovered that tasks involving morphological processing stimulated various parts of the brain. For instance, Bozic and Marslen-Wilson (2010) showed that various parts of the brain are involved in processing lexicalized morphology, such as that present in derived words, as opposed to rule-based morphology, such as inflection (i.e., a left-lateralized fronto-temporal subsystem). To put it another way, they promote various neurobiological connections for

References:

1.Tojiboyeva, Mohinur, and Sharofat Pakirdinova. "OLAMNING LISONIY MANZARASIDA DONOLIK VA NODONLIK KONSEPTLARI." Involta Scientific Journal 2.4 (2023): 154-158.
2.Tojiboyeva, Mohinur Sherali Qizi. "SEMANTIC DIVISION OF TOURISM TERMINOLOGY." Scientific progress 3.6 (2022): 116-119.
3.qizi Tojiboyeva, Mohinur Sherali. "SEMANTIC DIVISION OF TOURISM TERMINOLOGY."
4.Abdugʻofur qizi Jurayeva, M. (2023). THE COGNITIVE STUDY OF NEUROLINGUISTIC ELEMENTS IN ENGLISH. Educational Research in Universal Sciences, 2(3), 1052-1056.
5.Parpieva Mokhirakhon, Inomova Xurmatoy, & Muqaddam Jurayeva. (2023). A METHOD OF SOUND ORGANIZATION OF ENGLISH AND RUSSIAN ARTISTIC TEXT USING PHONOTYLISTIC LANGUAGE. Involta Scientific Journal, 2(4), 135–139.
6.Muqaddam Abdug'ofur qizi Jurayeva, & Sevara SultanovnaUsmanova. (2023). NEYROLINGVISTIKA SOHASINI O`RGANISH TENDENSIYALARI. Involta Scientific Journal, 2(1), 53–59.
7.Mohira Parpiyeva, & Muqaddam Jurayeva. (2023). PROBLEMS OF LINGUOCULTUROLOGICAL AND NEUROLINGUISTIC STUDY OF PHONETIC MEANS. American Journal of Philological Sciences, 3(02), 49–59.
8.Abdug'ofur qizi Jurayeva, M., & Alisher o'g'li, M. M. (2023). Morphology and syntax and crosslinguistic findings in neurolinguistics. Образование наука и инновационные идеи в мире, 18(8), 156-159.
9.Shahnoza, E. (2023). РЕКЛАМА МАТНИНИНГ ПСИХОЛИНГВИСТИК ХУСУСИЯТИ. Involta Scientific Journal, 2(5), 46-49.
10.Yusupova, O. M., & Yuldasheva, G. (2023). THE ROLE OF THE ENGLISH AS THE LANGUAGE OF THE WORLD. IJODKOR O'QITUVCHI, 3(29), 485-487.
11.Mukhabbat, K. (2023). THE WAYS OF IMPROVING OF LISTENING WITH THE HELP OF AUDIO MATERIALS. Involta Scientific Journal, 2(4), 164-169.
12.Mukhabbat, K. (2023). THE DIFFERENT WAYS IN WHICH TENSES ARE FORMED AND USED IN ENGLISH GRAMMAR. Involta Scientific Journal, 2(4), 159-163.
13.Dildora, G., & Omina, Y. (2023). JAHON TILSHUNOSLIGIDA ERTAK DISKURSINING O ‘RGANILISHI. Involta Scientific Journal, 2(5), 118-122.
14.Murodova, M., & Xoldorova, H. (2023). STYLISTIC USAGE OF WORD FORMATION PATTERNS CONTENTS. Educational Research in Universal Sciences, 2(3), 946-949.
15.Abdurashidova, Z., & Xoldorova, H. (2023). THE PROBLEM OF THE CATEGORY OF TENSE IN MODERN ENGLISH. Educational Research in Universal Sciences, 2(3), 24-29.
16.Kuchkarova, M. Y. (2023). THE IMPLEMENTATION OF INTERACTIVE ACTIVITIES IN DEVELOPING SPEAKING SKILLS OF ESP STUDENTS BY PRESENTATION, PRACTICE AND PRODUCTION. Educational Research in Universal Sciences, 2(4), 574-581.
17.Mokhirakhon, P., Xurmatoy, I., & Jurayeva, M. (2023). A method of sound organization of english and russian artistic text using phonotylistic language. Involta Scientific Journal, 2(4), 135-139.
18.qizi Tojiboyeva, M. S., & Kuchqorova, M. Y. (2023). PHRASEOLOGICAL UNITS DENOTING THE CONCEPT OF WISDOM. GOLDEN BRAIN, 1(6), 52-55.

19.Murodova, M., & Xoldorova, H. (2023). STYLISTIC USAGE OF WORD FORMATION PATTERNS CONTENTS. Educational Research in Universal Sciences, 2(3), 946-949.
20.Ibragimjonovna, A. M. ., & qizi, T. S. U. . (2023). The Issues Related to Studying of Language and thought in Cognitive Linguistics. Miasto Przyszłości, 31, 271–273.
21.Tuxtanazarova Sarvinoz, & Ismoilova Shodiya. (2022). TILSHUNOSLIKDA KOGNITIV LINGVISTIKA SHAKLLANISH TARIXIGA DOIR. Involta Scientific Journal, 1(13), 51–54