

NEUROLINGUISTIC MECHANISMS OF LITERARY STYLE PROCESSING: EXPLORING THE COGNITIVE FOUNDATIONS OF READING

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Abstract: The study of literary language has traditionally been associated with stylistics and literary criticism, while neurolinguistics has focused on the relationship between language and the human brain. Recent interdisciplinary research has demonstrated that literary texts activate complex cognitive processes that extend beyond basic language comprehension. This article explores the neurolinguistic mechanisms involved in the processing of literary style, examining how readers interpret figurative language, narrative structures, and stylistic devices. The paper discusses the role of various brain regions in decoding literary meaning and highlights the cognitive benefits of exposure to stylistically rich texts.

Keywords: neurolinguistics, literary style, stylistics.

Introduction: Language is one of the most sophisticated cognitive abilities of the human brain. Neurolinguistics investigates how language is represented, processed, and produced within neural systems. While significant attention has been devoted to everyday language processing, literary language remains a relatively specialized area of study. Literary texts differ from ordinary communication because they frequently employ metaphor, symbolism, ambiguity, and stylistic deviation. Reading literature requires readers not only to decode linguistic information but also to construct meanings, infer emotions, and interpret aesthetic features. Consequently, literary reading provides a unique opportunity to examine the interaction between language, cognition, and neural activity. Understanding how the brain processes literary style contributes to both linguistic theory and educational practice.

Literary style refers to the distinctive linguistic features employed by an author to achieve particular artistic effects. These features include figurative language, lexical choice, sentence structure, rhythm, and narrative techniques. Unlike ordinary discourse, literary language often departs from conventional patterns, requiring additional cognitive effort from readers. Neurolinguistic studies suggest that stylistic deviations attract greater attention and activate higher-order cognitive processes. When readers encounter unusual expressions, metaphors, or symbolic imagery, the brain must integrate linguistic information

with prior knowledge and contextual understanding. This process enhances deeper comprehension and encourages critical interpretation.

Furthermore, literary texts stimulate imagination and emotional engagement. Readers create mental representations of characters, settings, and events, drawing upon memory and personal experience. Such activities contribute to richer cognitive processing than that typically involved in reading informational texts. Research using functional magnetic resonance imaging (fMRI) and electroencephalography (EEG) has provided valuable insights into the neural mechanisms underlying literary reading. Several brain regions participate in the interpretation of literary language.

Broca's area, located in the frontal lobe, is associated with syntactic analysis and language production. During the reading of complex literary sentences, this region demonstrates increased activation due to the processing demands imposed by sophisticated grammatical structures. Wernicke's area plays a crucial role in language comprehension and semantic interpretation. Literary texts often contain multiple layers of meaning, requiring readers to engage this region extensively when interpreting figurative expressions and contextual nuances. The right hemisphere also contributes significantly to literary understanding. While the left hemisphere is traditionally associated with language processing, the right hemisphere is particularly important for interpreting metaphors, irony, symbolism, and emotional content. Literary texts frequently rely on these elements, resulting in increased bilateral brain activity.

In addition, the limbic system, which regulates emotions, becomes active during literary reading. Emotional engagement with characters and narratives allows readers to experience empathy and emotional resonance. This interaction between language and emotion demonstrates the multidimensional nature of literary processing. One of the most intriguing aspects of literary language is its use of stylistic devices. Metaphors, for example, require readers to establish relationships between seemingly unrelated concepts. Neurolinguistic studies indicate that metaphor comprehension activates both language-processing areas and regions associated with abstract reasoning.

Similarly, irony and ambiguity demand additional inferential processing. Readers must move beyond literal meanings and identify the intended message within a broader context. This process involves executive functions such as attention, working memory, and cognitive flexibility. Narrative structures also influence neural activity. Engaging stories can activate brain regions associated with perspective-taking and social cognition. Readers often simulate the experiences of fictional characters, demonstrating how literary reading promotes complex cognitive and emotional interactions.

The neurolinguistic study of literary style has important implications for

language education. Literary texts can strengthen reading comprehension, vocabulary development, critical thinking, and interpretive skills. Because literary reading activates multiple cognitive systems simultaneously, it contributes to deeper language learning experiences. Teachers may benefit from incorporating stylistically rich texts into language instruction. Exposure to diverse literary forms encourages students to analyze language creatively while developing greater awareness of linguistic structures and meanings. Moreover, literary reading can enhance empathy, cultural understanding, and communicative competence.

Conclusion.

Neurolinguistic research demonstrates that literary reading is a highly complex cognitive activity involving multiple neural systems. The processing of literary style engages language-related brain regions as well as networks responsible for emotion, memory, imagination, and higher-order reasoning. Through the interpretation of metaphors, narrative structures, and stylistic devices, readers actively construct meaning and experience deeper cognitive engagement. The integration of neurolinguistics and stylistics offers valuable insights into the nature of language processing and highlights the educational significance of literary texts in developing advanced linguistic and cognitive abilities.

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