

Language and the Brain - Michael Ullman

The biology of the brain

1. Briefly explain the following terms, each of which refers to an anatomical direction in the brain: superior, inferior, anterior, posterior, lateral, medial, ventral, dorsal.
2. What is a neuron?
3. What are neurotransmitters?
4. What is meant by cytoarchitectonics?

Research methods

5. Explain the logic of twin studies and adoption studies.
6. What are the disadvantages of the lesion method.
7. Explain how fMRI works.
8. What are some advantages and disadvantages of fMRI?
9. Explain how MEG works.
10. Explain the methods of direct brain recording and direct brain stimulation.

Evidence and Explanations

11. What is meant by ‘lumpers’ and ‘splitters’ with respect to the issue of separability?
12. What structure may underlie *searching* for lexical knowledge?
13. Name two degenerative disorders that involve important damage to temporal cortex.

14. Children with Specific Language Impairment (SLI) have problems with a number of aspects of language. Which of the following are particularly problematic in SLI? Lexical recall, lexical knowledge, syntax.
15. Briefly describe three competing explanations for dissociations observed between nouns and verbs.
16. What evidence suggests the medial temporal lobe structures underlie aspects of word learning?
17. The procedural memory system has been implicated in aspects of grammar? What non-linguistic functions does this system underlie?
18. What is agrammatic aphasia?
19. Name two developmental disorders that are associated with syntactic impairments and with abnormalities of Broca's area.
20. Which subcortical structure that is composed of several parts, including the putamen and the caudate nucleus, seems to play a role in syntax?
21. What is the *FOXP2* gene?
22. List some structural similarities between language and music. Which brain structures do both of these domains depend on?
23. Patients with temporal lobe damage have been shown to have greater difficulty processing irregular than regular inflected forms. In what types of patients has this pattern been observed?