

Introduction to Brain and Cognition - CS9.311

Assignment - Spring 2024

Write a short report (**1000 words**) on **any one** of the following phenomena.

Examine and explore your chosen topic by analyzing a research paper or book chapter. Add personal observations or reflections on the phenomenon based on your understanding. You can follow the following template:

- What is the theory/topic? (1 mark)
- Who proposed it, or why was it proposed? (1 mark)
- What question or understanding it provides - use one paper or book chapter material to cover this. (3 marks)
- Any critical analysis of it (optional) (extra 1 mark)

Use of ChatGPT or plagiarism of any kind is strictly prohibited and will result in a penalty.

List of topics:

1. Diffusion Theory (Diffusion Model) of decision making
2. Feature Integration Theory (Anne Treisman)
3. Critical period theory of Language
4. Psychoanalytic Theory (Sigmund Freud)
5. Cognitive Dissonance Theory (Leon Festinger)
6. Attachment Theory (John Bowlby, Mary Ainsworth)
7. Hierarchy of Needs (Abraham Maslow)
8. Social Cognitive Theory of Moral Thought and Action (Albert Bandura)
9. Theory of Cognitive Development (Lev Vygotsky)
10. Nature vs. Nurture: How do genetic predispositions interact with environmental influences to shape specific cognitive abilities, such as language acquisition or problem-solving skills?
11. Theory of Mind: Do three-year-olds have a theory of mind?
12. Language, Innate or Learned? - Is much of the capacity for language innate?
13. Top-Down vs. Bottom-Up Processing: Do our expectations and what we already know affect what we see and understand, or do our senses primarily determine how we perceive things?
14. Mental imagery: reality or illusion?
15. Is Cognition Just Computation?
16. Serial vs. Parallel Processing: When we think, do we do one thing at a time, or can we do many things simultaneously?
17. Cognitive Decline: What are the differences between regular age-related changes in cognition and signs of more severe conditions like Alzheimer's disease?
18. Does language affect perception and cognition?
19. How does the visual system perceive optical illusions?
20. Is there a correlation between brain size and intelligence within species?