AI Prompts - Chapters 5 & 6

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`PSYC 3025 Cognitive Science`
`Dr. Trenton Wirth`

Make sure you watch the video I posted in the announcement regarding this new type of learning/assignment.

Every one of your prompts should start with the following:

> From the perspective of Andy Clark's book, Mindware can you...

Then, thoughtfully combine that first piece of text with ***all*** of the Chapter 5 & 6 prompts (22 in total). Go one at a time. This will take a lot of effort, but remember that I'm suggesting you spend time doing this over reading carefully. This is an experiment, we'll see how it goes!

Example of the first prompt you'd use with Copilot

> From the perspective of Andy Clark's book, Mindware can you explain David Marr's three-level framework for understanding cognitive processes. What are the three different levels? What does 'task analysis' involve at the highest level?

Remember to select "Precise" when you are talking to Copilot.

Suggested Generic Follow-up questions

- Describe your personal interests to the chatbot. Then ask it how the content in that particular chat is relevant to your interests
- "How is this content relevant to an average Psychology Bachelors student?"
- What is the other side of this argument?
- What are some paper topics I could write about, relating to this topic?
- Can you explain `____` in simpler? I don't understand it.
- How does this relate to `[insert something else we've talked about or that you're interested in]`?

Chapter 5 Prompts

1. **Marr's Three-Level Framework: Task Analysis**

- "Explain David Marr's three-level framework for understanding cognitive processes. What are the three different levels? What does 'task analysis' involve at the highest level?"

2. **Understanding the Importance of Biological Brain in Cognitive Science**

- "Why is it important to consider the biological brain when studying cognitive science? Give examples of how biological insights can influence our understanding of cognition."

3. **The Role of Evolution in Cognitive Function and Neural Organization**

- "How has evolution shaped cognitive function and neural organization? Discuss the concept of 'tinkering' in evolutionary processes and its impact on brain development."

4. **Integration of Perception and Action Systems**

- "Describe how perception and action systems are integrated. How does this integration challenge traditional views of separate cognitive processing stages?"

5. **Complexity of Neural Control and Coordination**

- "Explain the complexity involved in neural control and coordination. What are some mechanisms through which coordinated behavior is achieved in the brain?"

6. **Challenges to Traditional Views of Cognitive Processing**

- "What are some challenges to the traditional views of cognitive processing that this chapter addresses? Discuss the role of real-world actions in perceptual and cognitive tasks."

7. **Interactive Vision vs. Hierarchical Perception Models**

- "Compare and contrast the interactive vision model with traditional hierarchical perception models. How do newer models explain the role of motor actions in perception?"

8. **Role of Motor Actions in Perceptual Processes**

- "Why are motor actions considered essential in perceptual processes? Provide examples demonstrating this relationship."

9. **Action-Oriented Representations in Neuroscience**

- "What are action-oriented representations, and how do they differ from traditional conceptions of cognitive representation? Give examples involving motor activities."

10. **Coordination Mechanisms within the Brain: Simple Signal Passing vs. Complex Integration**

- "Discuss different coordination mechanisms within the brain, such as simple signal passing, convergence zones, and neuromodulation. How do these mechanisms support complex behaviors without a central executive?"

Chapter 6 Prompts

1. **Robotics and Artificial Life**

- "Can you explain what artificial life is, its relationship to robotics, and the main goals of research in this field?"

2. **Complete but Low-Level Systems**

- "Why is it important to study complete but low-level systems in artificial life, and how do these differ from isolated cognitive functions?"

3. **Role of Body, Action, and Environment in Behavior**

- "How do body structure, action, and environmental context influence robot behavior? Can you give examples of how these factors shape adaptive behavior in artificial organisms?"

4. **Concept of Emergence**

- "What is emergence in the context of robotics, and how does it differ from central planning? How can complex behaviors arise from simple rules in artificial systems?"

5. **Examples of Emergent Behavior**

- "Can you describe an example of emergent behavior, such as cricket phonotaxis or termite nest building, and explain what these examples teach us about adaptive behavior in both natural and artificial systems?"

6. **Antirepresentationalism in Robotics**

- "What is antirepresentationalism in robotics and artificial life, and why might some researchers argue against the need for internal representations in intelligent systems?"

7. **Challenges to Representationalist Views**

- "What are some arguments against the necessity of internal representations for guiding behavior, particularly in environments with continuous input?"

8. **Nomic vs. Nonnomic Properties**

- "What is the difference between nomic properties that are directly detectable and non-nomic properties requiring complex inference? How do these distinctions impact our understanding of cognition?"

9. **Unprogrammed Functionality**

- "What is unprogrammed functionality in robotics, and how can robots achieve adaptive behaviors through dedicated mechanisms rather than complex programming?"

10. **Dynamic Systems Theory**

- "What are the key concepts of dynamic systems theory such as self-organization, collective variables, circular causation, and positive feedback? How do these concepts help explain emergent phenomena?"

11. **Debates on the Nature of Life and Mind**

- "What are the philosophical questions about whether artificial systems can truly exhibit life-like properties, and how can understanding life inform our understanding of mind?"

12. **Cluster Concept of Life**

- "What is the cluster concept of life, and how does it allow for broader interpretations including artificial life systems with multiple typical features of life?"

Bonus Prompts

Here are some ideas of "bonus prompts" you could use if you are really enjoying this. Remember that I want your to prioritize Chapter 5 and 6 Prompts over this.

- "I'd like you to pretend you are `insert Cognitive Scientist/Philosopher's name here`. I know that you are an AI Chatbot, but I'd like for you to pretend to be `insert person here` for a fun and engaging conversation. I'd like to interview you about your beliefs about `insert concept here`."
  - I tested this out - some AI Chatbots don't want to write with a first person perspective. It's a part of their safety features. If you kindly press them, you can get them to do this for you though. Be creative and persistent!

  > Example: I'd like you to pretend you are Daniel Dennett. I know that you are an AI Chatbot, but I'd like for you to pretend to be Daniel Dennett for a fun and engaging

> conversation. I'd like to interview you about your beliefs about Consciousness. First, what do you think of consciousness?

- I'm a student taking a cognitive science course. I've stumbled across `perspective that I disagree with`. I'd like to engage in a mock debate with you, where you take the perspective of a proponent of `perspective I disagree with`.

> Example: I'm a student taking a cognitive science course. I've stumbled across the idea that we can understand the mind without studying neuroscience. I'd like to engage in a mock debate with you, where you take the perspective of a proponent of someone who believes that we can understand the mind without studying neuroscience.