AI Prompts - Chapter 7

1. In the context of Cognitive Science what is "dynamic systems theory"? What factors lead to the shift from symbolic to dynamic models within cognitive science?
2. Explain the impact of connectionist models and neuroscience findings on traditional cognitive processing theories. What solutions do dynamic systems theory offer in this space?
3. Summarize the principles and applications of dynamic systems theory in cognitive science.
4. Define key features of dynamic systems theory, such as state space, control parameters, and coupling.
5. Apply dynamic systems theory to explain cognitive phenomena, using examples like rhythmic finger motion and treadmill stepping.
6. What is the Watt Governor from dynamic systems theory? What is it meant to illustrate? How is it effective, and what are its shortcomings?
7. What are cognitive dynamics (in the context of dynamic systems theory)? Evaluate the theoretical and empirical contributions of case studies dynamic systems theory (rhythmic finger motion, treadmill stepping, and the Watt Governor) to the understanding of cognitive dynamics.
8. Critically discuss the role of representation and computation in the context of dynamic cognitive models. Analyze the debate between traditional computational models and dynamic, non-representational approaches.
9. Debate the effectiveness of viewing cognition as emergent from dynamic interactions (dynamic systems theory) versus traditional computational processes.
10. Within cognitive science is dynamic systems theory today? Why should your average undergraduate student in Psychology care about it?