EXAMINATION #3

PART 1: CHALLENGES TO EMPIRICAL SCIENCE [10 POINTS]

1. What is Hume’s paradox? [2 points]

2. What does it mean to say that observation is theory dependent? [3 points]

3. What implications does the theory dependence of observation have for the traditional view of the scientific method? [3 points]

4. What is the Quine-Duhem hypothesis? [2 points]
PART 2: ARCHITECTURE OF THE REAL WORLD [10 POINTS]

1. According to Simon, what is complexity? [2 points]

2. How did complexity arise? [2 points]

3. Consider the following template from Senge. Use the template to provide an account of the tragedy of the commons. [6 points]
PART 3: PERCEPTION, USER ILLUSION, TREE OF TALKING [20 POINTS]

1. What is the user illusion?  What does Nørretranders mean when he says that what we see is a "... reconstruction, a simulation, a presentation of what my senses receive – a hypothesis"? [6 points]

2. What is the importance of the half-second delay to the user illusion? [4 points]

3. Construct a diagram of the functional model of perception presented in class. Making reference to the diagram provide a short description of the process of perception [5 points]
4. Construct a diagram of the “tree of talking”. Making reference to the diagram, describe the way in which a message is formulated by one person, emitted, and received by the other person. Be sure to include a discussion of exformation and information in your discussion. [5 points]

PART 4: STRUCTURE OF CONSCIOUSNESS [15 POINTS]
1. According to Jaynes, what is understanding? [1 point]

2. According to Jaynes, what is consciousness? How is consciousness related to the analog world? [2 points]
3. Identify and define the four major structural characteristics identified by Jaynes. [8 points]

4. Using Jaynes' four structural characteristics of consciousness, describe how a person might create the text of an observation statement. [4 points]
PART 5: MEMES [20 POINTS]

1. What is a meme? How do they enter consciousness? [5 points]

2. In what ways is the scientific method a meme or a memeplex? What implications follow from such a characterization? [5 points]

3. From the point of view of science as a meme-plex, address the following question: “do scientists proceed the way they do because there are objective reasons for doing so, or do we call these procedures reasonable because a specific group sanctions them? [5 points]
4. Why does Senge go to such great lengths to introduce certain templates? In what sense are the templates examples of memes? What implications does this have for Senge’s presentation? [5 points]

PART 6: SENSEMAKING [25 POINTS]

1. Identify the three question of interpretation from Mailloux [3 points]

2. Identify the two aspects of sensemaking from Weick? [2 points]

3. What is equivocality? How does it arise? [3 points]
4. Why is equivocality important? [2 points]

5. Provide an interpretation of the following quotation from Nørretranders: “we can derive knowledge from the world; but we cannot derive the world from knowledge. [5 points]
6. Using the three questions of interpretation, two aspects of sense making, four structural characteristics of consciousness, exformation, information, perception, and tree of talking address the following: How does sensemaking take place in the face of equivocality? [10 points]