HW 4: Reading Questions and Exercises

Due: Monday, October 22

Submit *short* computer-formatted, spell-checked answers to the following (one or two paragraphs per question).

1. What is the difference between Mnemotrix and Ergotrix wire? Give an example of an association between two percepts (i.e., things a vehicle might perceive) that would require Mnemotrix wire and an example that would require Ergotrix wire.

2. Suppose a vehicle learns your example above of Ergotrix connection between two percepts too quickly, e.g., after seeing only one example. What negative consequences might ensue?

3. Consider the syllogism "Socrates is a man, all men are mortal, ergo Socrates is mortal." Why cannot this be expressed in propositional logic?

4. Consider the concept "war". (a) Give three statements of first-order logic that would be included in a logical representation of this concept. (b) Draw a small semantic network (approximately 10 nodes + links) that would (begin to) represent this concept.

5. Construct your own set of three sentences, similar to the "canary" statements given in class, that might give evidence that the human brain is a semantic network. Explain (in a couple of sentences) how these sentences might give evidence for this claim.

6. Give an example of a piece of information that would be difficult to find using current-day web search engines, but easy to find if the semantic web (and associated search engines) existed on a large scale. Explain why the semantic web would make your example search problem a lot easier.