

**6.871 SPRING 2005**  
**Reading Summary: Lecture 13**  
*Due Thursday, March 17, 9:35am*

**Lecture 13: Summary of Knowledge Representation**

Please answer the following questions in at most one page.

Papers:

Hayes P, The logic of frames

Shubert L, Semantic nets are in the eye of the beholder

Davis R, Shrobe H, Szolovits P, What is a Knowledge Representation?

1. We claim that the first two of these papers miss something important about knowledge representation. They both claim to be critiques of a representation mechanism and both take a kind of reductionist view, claiming that when examined closely, the representation has less than meets the eye. Both use logic as a kind of testing ground; the Shubert paper has a slightly less narrow field of view.

- a. In what way does the reduction to logic prove Hayes' claim?
- b. What is Hayes' definition of a representation, and how is this definition linked to his claim?
- c. What elements of the Davis paper does Hayes' approach ignore?

2. The basic argument in the Davis, et. al. paper is that a knowledge representation performs five important roles and that ignoring any one of them is a bad idea.

- a. What are the five roles?
- b. Pick any representation (e.g. rules, frames, semantic nets, etc.) and describe the roles with respect to that representation.