Homework 5

Scott Martin (Linguistics 384)

Due before the final on December 6th, 2007, at 11:30 AM in the Carmen dropbox.

1. (40 points) Consider the two situations described below:

   Situation A American Widget Company decides to purchase and install a (fictional!) system that handles customer service calls. This system has enough of an understanding of English that it can do about 80 percent of a human customer service representative's job.

   Situation B The National Spying Agency has been given a mandate to listen to all communications into and out of the U.S. This is an incredible amount of data, so the NSA decides to buy an extremely sophisticated system to match patterns in the data in order to sort out potential terrorists from, say, law-abiding people with non-mainstream political leanings.

   Which situation describes an instance of upskilling, and which describes deskilling? There is no specific correct answer for this question, but you should explain your answer in detail and give good argumentation.

2. (30 points) Imagine an outbreak of a virulent form of Turkey Flu is affecting the entire world. Because of the shortage of medical care caused by the situation, doctors must perform triage: deciding which patients are too far gone to be helped and which can benefit from the avaiable treatments.

   Hospital A has bought and is using a (again, fictional!) system that understands both natural language and clinical treatment. This system is able to talk with patients and diagnose them without them ever seeing a human doctor. One of this system's functions, triage, has not been used before since there has not yet been a situation requiring rationing. Doctors are so busy with so many patients that using this system for triage would let them focus on patients who need urgent interventions. Should the administrators and doctors at Hospital A trust this system to make triage decisions, literally deciding who will receive care and who will not?

3. (30 points) Take an example fictional scenario from a movie, fiction book, etc., that describes an "artificial intelligence" system (good examples are the Terminator movies, The Matrix series, WarGames, etc.). Do you think this fictional scenario is likely or unlikely? Why or why not? The point of this is to talk about what you think the goal of "artificial intelligence" is or should be. Your answer should discuss not just what is technically feasible but also reasons why human intelligence is or is not fundamentally different from what we can make machines replicate.