

CS/ENGRI 172, Fall 2002

11/20/02: Lecture Thirty-Five Handout

Topics: Introduction to machine translation.

Difficulties

Like natural language processing in general, machine translation (MT) is generally considered to be “AI-complete”. Take Bar-Hillel’s (1960) example:

The pen is in the box

vs.

The box is in the pen

Machine translation paradigms

We consider these in order of increasing order of complexity, in the sense of the depth of analysis (apparently) required.

- Direct replacement: word-for-word translation.
- Syntactic transfer:
 - Source-language utterance → source-language parse tree
 - target-language parse tree
 - target-language utterance
- The interlingual approach:
 - Source-language utterance → interlingua representation
 - target-language utterance

Micro-theories may be necessary for each of these paradigms.