

CS/ENGRI 172, Fall 2002**8/30/02: Newell and Simon's Turing Award Lecture****Contents**

Allen Newell and Herbert A. Simon. Computer science as empirical inquiry: symbols and search. *Communications of the ACM* 19(3), March 1976. Available on the web at the ACM Digital Library site, to which Cornell University has access. There are a few typos, which may have been introduced during scanning.

Reading Assignments

We will be covering the following portions, which you should read by the indicated lecture.

- September 2: pp. 113–120, stop at “II. Heuristic Search”; the section “Physical Symbol Systems”, pp. 125–126.
- September 4: pp. 120–122, stop at “Search Trees”; the section “Selecting Appropriate Representations”, pg. 125.
- September 6: pp. 122–123, stop at “The Forms of Intelligence”; the as-yet-unread parts of the section “Conclusion”, pp. 125–126.

Notes

While for the most part this class deals with technical, mathematical material, we will begin our explorations by first looking at this overview of computer science and artificial intelligence written for a somewhat broad audience. Read carefully as preparation for what is ahead: later on we will “co-opt” terms from ordinary English by giving them precise technical definitions, and experience shows that not being careful about definitional distinctions often leads to problems.

In terms of content, focus on the following:

- Arguments regarding whether “computer science” is a science.
- How the postulation of the physical symbol system hypothesis fits in with the previous issue (don't get bogged down in the particular details of the PSSH itself).
- Problem solving.
- Computer science's history.

Also, bear in mind that this paper was written thirty years ago. Much has changed since then, but much has also remained constant.