From economics to cognitive science to the modern synthesis

"All the aspects of knowledge--its creation, its storage, its retrieval, its treatment as property, its role in the functioning of societies and organizations--can be (and have been) analyzed with the tools of economics. Knowledge has a price and a cost of production; there are markets for knowledge, with their supply curves, and marginal rates of substitution."

--Herbert Simon, "The many shapes of knowledge", 1999

Post WWII: Cybernetics-- Weiner, Feedback; von Neumann: store and process
1948: Hixon Conference "Cerebral mechanisms in behavior"
1950: Turing: Turing Machines and Turing Test
  "incontroversial to say that machines can think"
1956: MIT: Symposium on Information Theory (Miller, Chomsky, Simon & Newell)
1956: Dartmouth Summer School (McCarthy, Minsky, Simon & Newell)
1958: Broadbent, Perception & Communication
1960: Miller et al, *Plans and the Structure of Behavior*


DENDRAL, ELIZA, STUDENT, SHRDLU

1972ff: Dreyfus, *What Computers Can't Do*


1977: *Cognitive Science*, Don Norman

1980: Searle, "Minds, Brains, & Programs"

1987: Suchman, *Plans and Situated Actions*

**Gardner’s essentials**

1. Representation

2. Computers

3. De-emphasize emotion, affect, history, culture

4. Interdisciplinary (philosophy, psychology, linguistics, anthropology, neuroscience, AI)

5. Western epistemological tradition

**Toffler’s future**

paper wedding gowns; missing supermarket; portable playgrounds

female hitchhikers; demise of geography; loss of friends

collapse of hierarchy/beyond bureaucracy

"the impact on the knowledge explosion of the classic knowledge container, the book"

"within fifty years [from 1970] man will move onto and into the sea"