

## Part IV

# Applications and Specializations: 1970s to Early 1980s

UNTIL ABOUT THE EARLY 1970s, MOST AI RESEARCH DEALT WITH WHAT SEYMOUR Papert called “toy” problems – programs that solved puzzles or games – or the researchers pursued projects that were staged in highly controlled laboratory settings. (Of course, there were some notable exceptions – machine translation, DENDRAL, and LUNAR, for example.) However, soon after, AI efforts began a definite shift toward applications work, confronting problems of real-world importance. Inevitably, successful applications work encouraged specialization into subdisciplines such as natural language processing, expert systems, and computer vision.

One reason for the increasing interest in applications was that the power of AI methods had increased to the point where realistic applications seemed within reach. But perhaps more importantly, the sponsors of AI research in the U.S. Department of Defense (DoD) had to deal with the constraints imposed on them by the 1969 “Mansfield Amendment,” which required that basic research be relevant to military needs. As one example of the increased emphasis on applications, the Information Sciences Institute (USC-ISI) was formed in 1972 specifically to pursue them. Located in Marina Del Rey, California, it is affiliated with the University of Southern California and received much of its initial support from DARPA. Other large corporations also began to explore AI’s commercial potential.

Of course, theoretical and basic research continued also, and several new university groups joined the existing ones. A short list of the new ones would include those at the Universities of Toronto, Rochester, Texas, Maryland, British Columbia, California, and Washington. Other groups started as well in Europe and Asia. (In 1981, I was invited to give lectures on AI in China, which was newly recovering from its “Cultural Revolution” and beginning its program of “Opening and Reform.”) But even at the universities, much of their basic research was motivated by specific applications. In this part of the book, I’ll describe some of the AI applications work undertaken during the 1970s to the early 1980s.

