Part II

Early Explorations: 1950s and 1960s

IF MACHINES ARE TO BECOME INTELLIGENT, THEY MUST, AT THE VERY LEAST, BE able to do the thinking-related things that humans can do. The first steps then in the quest for artificial intelligence involved identifying some specific tasks thought to require intelligence and figuring out how to get machines to do them. Solving puzzles, playing games such as chess and checkers, proving theorems, answering simple questions, and classifying visual images were among some of the problems tackled by the early pioneers during the 1950s and early 1960s. Although most of these were laboratory-style, sometimes called "toy," problems, some real-world problems of commercial importance, such as automatic reading of highly stylized magnetic characters on bank checks and language translation, were also being attacked. (As far as I know, Seymour Papert was the first to use the phrase "toy problem." At a 1967 AI workshop I attended in Athens, Georgia, he distinguished among *tau* or "toy" problems, *rho* or real-world problems, and *theta* or "theory" problems in artificial intelligence. This distinction still serves us well today.)

In this part, I'll describe some of the first real efforts to build intelligent machines. Some of these were discussed or reported on at conferences and symposia – making these meetings important milestones in the birth of AI. I'll also do my best to explain the underlying workings of some of these early AI programs. The rather dramatic successes during this period helped to establish a solid base for subsequent artificial intelligence research.

Some researchers became intrigued (one might even say captured) by the methods they were using, devoting themselves more to improving the power and generality of their chosen techniques than to applying them to the tasks thought to require them. Moreover, because some researchers were just as interested in explaining how human brains solved problems as they were in getting machines to do so, the methods being developed were often proposed as contributions to theories about human mental processes. Thus, research in cognitive psychology and research in artificial intelligence became highly intertwined.