Introduction: The Robot Chronicles

Isaac Asimov

What is a robot? We might define it most briefly and comprehensively as “an artificial object that resembles a human being.”

When we think of resemblance, we think of it, first, in terms of appearance. A robot looks like a human being.

It could, for instance, be covered with a soft material that resembles human skin. It could have hair, and eyes, and a voice, and all the features and appurtenances of a human being, so that it would, as far as outward appearance is concerned, be indistinguishable from a human being.

This, however, is not really essential. In fact, the robot, as it appears in science fiction, is almost always constructed of metal, and has only a stylized resemblance to a human being.

Suppose, then, we forget about appearance and consider only what it can do. We think of robots as capable of performing tasks more rapidly or more efficiently than human beings. But in that case any machine is a robot. A sewing machine can sew faster than a human being, a pneumatic drill can penetrate a hard surface faster than an unaided human being can, a television set can detect and organize radio waves as we cannot, and so on.

We must apply the term robot, then, to a machine that is more specialized than an ordinary device. A robot is a computerized machine that is capable of performing tasks of a kind that are too complex for any living mind other than that of a man, and of a kind that no non-computerized machine is capable of performing.

In other words to put it as briefly as possible:

robot = machine + computer

Clearly, then, a true robot was impossible before the invention of the computer in the 1940s, and was not practical (in the sense of being compact enough and cheap enough to be put to everyday use) until the invention of the microchip in the 19708.

Nevertheless, the concept of the robot-an artificial device that mimics the actions and, possibly, the appearance of a human being-is old, probably as old as the human imagination.

The ancients, lacking computers, had to think of some other way of instilling quasi-human abilities into artificial objects, and they made use of vague supernatural forces and depended on god-like abilities beyond the reach of mere men.

Thus, in the eighteenth book of Homer’s Iliad, Hephaistos, the Greek god of the forge, is described as having for helpers, “a couple of maids...made of gold exactly like living girls; they have sense in their heads, they can speak and use their muscles, they can spin and weave and do their work....” Surely, these are robots.

Again, the island of Crete, at the time of its greatest power, was supposed to possess a bronze giant named Talos that ceaselessly patrolled its shores to fight off the approach of any enemy.

Throughout ancient and medieval times, learned men were supposed to have created artificially living things through the secret arts they had learned or uncovered—arts by which they made use of the powers of the divine or the demonic.

The medieval robot-story that is most familiar to us today is that of Rabbi Loew of sixteenth-century Prague. He is supposed to have formed an artificial human being—a robot—out of clay, just as God had formed Adam out of clay. A clay object, however much it might resemble a human being, is “an unformed substance” (the Hebrew word for it is “golem”), since it lacks the attributes of life. Rabbi Loew, however, gave his golem the attributes of life by making use of the sacred name of God, and set the robot to work protecting the lives of Jews against their persecutors.

There was, however, always a certain nervousness about human beings involving themselves with knowledge that properly belongs to gods or demons. There was the feeling that this was dangerous, that the forces might escape human control. This attitude is most familiar to us in the legend of the “sorcerer’s apprentice,” the young fellow who knew enough magic to start a process going but not enough to stop it when it had outlived its usefulness.

The ancients were intelligent enough to see this possibility and be frightened by it. In the Hebrew myth of Adam and Eve, the sin they commit is that of gaining knowledge (eating of the fruit of the tree of knowledge of good and evil; i.e., knowledge of everything) and for that they were ejected from Eden and, according to Christian theologians, infected all of humanity with that “original sin.”

In the Greek myths, it was the Titan, or Prometheus, who supplied fire (and therefore technology) to human beings and for that he was dreadfully punished by the infuriated Zeus, who was the chief god.

In early modern times, mechanical clocks were perfected, and the small mechanisms that ran them (“clockwork”)—the springs, gears, escapements, ratchets, and so on—could also be used to run other devices.

The 1700s was the golden age of “automatons.” These were devices that could, given a source of power such as a wound spring or compressed air, carry out a complicated series of activities. Toy soldiers were built that would march; toy ducks that would quack, bathe, drink water, eat grain and void it; toy boys that could dip a pen into ink and write a letter (always the same letter, of course). Such automata were put on display and proved extremely popular (and, sometimes, profitable to the owners).

It was a dead-end sort of thing, of course, but it kept alive the thought of mechanical devices that might do more than clockwork tricks, that might be more nearly alive.

What’s more, science was advancing rapidly, and in 1798, the Italian anatomist, Luigi Galvani, found that under the influence of an electric spark, dead muscles could be made to twitch and contract as though they were alive. Was it possible that electricity was the secret of life?

The thought naturally arose that artificial life could be brought into being by strictly scientific principles rather than by reliance on gods or demons. This thought led to a book that some people consider the first piece of modern science fiction—Frankenstein by Mary Shelley, published in 1818.

In this book, Victor Frankenstein, an anatomist, collects fragments of freshly dead bodies and, by the use of new scientific discoveries (not specified in the book), brings the whole to life, creating something that is referred to only as the “Monster” in the book. (In the movie, the life principle was electricity.)

However, the switch from the supernatural to science did not eliminate the fear of the danger inherent in knowledge. In the medieval legend of Rabbi Loew’s golem, that monster went out of control and the rabbi had to withdraw the divine name and destroy him. In the modern tale of Frankenstein, the hero was not so lucky. He abandoned the Monster in fear, and the Monster, with an anger that the book all but justifies, in revenge killed those Frankenstein loved and, eventually, Frankenstein himself.

This proved a central theme in the science fiction stories that have appeared since Frankenstein. The creation of robots was looked upon as the prime example of the overweening arrogance of humanity, of its attempt to take on, through misdirected science, the mantle of the divine. The creation of human life, with a soul, was the sole prerogative of God. For a human being to attempt such a creation was to produce a soulless travesty that inevitably became as dangerous as the golem and as the Monster. The fashioning of a robot was, therefore, its own eventual punishment, and the lesson, “there are some things that humanity is not meant to know,” was preached over and over again.

No one used the word “robot,” however, until 1920 (the year, coincidentally, in which I was born). In that year, a Czech playwright, Karel Capek, wrote the play R.U.R., about an Englishman, Rossum, who manufactured artificial human beings in quantity. These were intended to do the arduous labor of the world so that real human beings could live lives of leisure and comfort.

Capek called these artificial human beings “robots,” which is a Czech word for “forced workers,” or “slaves.” In fact, the title of the play stands for “Rossum’s Universal Robots,” the name of the hero’s firm.

In this play, however, what I call “the Frankenstein complex” was made several notches more intense. Where Mary Shelley’s Monster destroyed only Frankenstein and his family, Capek’s robots were presented as gaining emotion and then, resenting their slavery, wiping out the human species.

The play was produced in 1921 and was sufficiently popular (though when I read it, my purely personal opinion was that it was dreadful) to force the word “robot” into universal use. The name for an artificial human being is now “robot” in every language, as far as I know.

Through the 1920s and 1930s, R U.R. helped reinforce the Frankenstein complex, and (with some notable exceptions such as Lester del Rey’s “Helen O’Loy” and Eando Binder’s “Adam Link” series) the hordes of clanking, murderous robots continued to be reproduced in story after story.

I was an ardent science fiction reader in the 1930s and I became tired of the ever-repeated robot plot. I didn’t see robots that way. I saw them as machines—advanced machines —but machines. They might be dangerous but surely safety factors would be built in. The safety factors might be faulty or inadequate or might fail under unexpected types of stresses, but such failures could always yield experience that could be used to improve the models.

After all, all devices have their dangers. The discovery of speech introduced communication—and lies. The discovery of fire introduced cooking—and arson. The discovery of the compass improved navigation—and destroyed civilizations in Mexico and Peru. The automobile is marvelously useful—and kills Americans by the tens of thousands each year. Medical advances have saved lives by the million&—and intensified the population explosion.

In every case, the dangers and misuses could be used to demonstrate that “there are some things humanity was not meant to know,” but surely we cannot be expected to divest ourselves of all knowledge and return to the status of the australopithecines. Even from the theological standpoint, one might argue that God would never have given human beings brains to reason with if He hadn’t intended those brains to be used to devise new things, to make wise use of them, to install safety factors to prevent unwise use—and to do the best we can within the limitations of our imperfections.

So, in 1939, at the age of nineteen, I determined to write a robot story about a robot that was wisely used, that was not dangerous, and that did the job it was supposed to do. Since I needed a power source I introduced the “positronic brain.” This was just gobbledygook but it represented some unknown power source that was useful, versatile, speedy, and compact—like the as-yet uninvented computer.

The story was eventually named “Robbie,” and it did not appear immediately, but I proceeded to write other stories along the same line—in consultation with my editor, John W. Campbell, Jr., who was much taken with this idea of mine—and eventually, they were all printed.

Campbell urged me to make my ideas as to the robot safeguards explicit rather than implicit, and I did this in my fourth robot story, “Runaround,” which appeared in the March 1942 issue of Astounding Science Fiction. In that issue, on page 100, in the first column, about one-third of the way down (I just happen to remember) one of my characters says to another, “Now, look, let’s start with the Three Fundamental Rules of Robotics.”

This, as it turned out, was the very first known use of the word “robotics” in print, a word that is the now-accepted and widely used term for the science and technology of the construction, maintenance, and use of robots. The Oxford English Dictionary, in the 3rd Supplementary Volume, gives me credit for the invention of the word.

I did not know I was inventing the word, of course. In my youthful innocence, I thought that was the word and hadn’t the faintest notion it had never been used before.

“The three fundamental Rules of Robotics” mentioned at this point eventually became known as “Asimov’s Three Laws of Robotics,” and here they are:

1. A robot may not injure a human being, or, through inaction, allow a human being to come to harm.

2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.

3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

Those laws, as it turned out (and as I could not possibly have foreseen), proved to be the most famous, the most frequently quoted, and the most influential sentences I ever wrote. (And I did it when I was twenty-one, which makes me wonder if I’ve done anything since to continue to justify my existence.)

My robot stories turned out to have a great effect on science fiction. I dealt with robots unemotionally—they were produced by engineers, they presented engineering problems that required solutions, and the solutions were found. The stories were rather convincing portrayals of a future technology and were not moral lessons. The robots were machines and not metaphors.

As a result, the old-fashioned robot story was virtually killed in all science fiction stories above the comic-strip level. Robots began to be viewed as machines rather than metaphors by other writers, too. They grew to be commonly seen as benevolent and useful except when something went wrong, and then as capable of correction and improvement. Other writers did not quote the Three Laws—they tended to be reserved for me—but they assumed them, and so did the readers.

Astonishingly enough, my robot stories also had an important effect on the world outside.

It is well known that the early rocket-experimenters were strongly influenced by the science fiction stories of H. a. Wells. In the same way, early robot-experimenters were strongly influenced by my robot stories, nine of which were collected in 1950 to make up a book called I, Robot. It was my second published book and it has remained in print in the four decades since.

Joseph F. Engelberger, studying at Columbia University in the 1950s, came across I, Robot and was sufficiently attracted by what he read to determine that he was going to devote his life to robots. About that time, he met George C. Devol, Jr., at a cocktail party. Devol was an inventor who was also interested in robots.

Together, they founded the firm of Unimation and set about working out schemes for making robots work. They patented many devices, and by the mid-1970s, they had worked out all kinds of practical robots. The trouble was that they needed computers that were compact and cheap—but once the microchip came in, they had it. From that moment on, Unimation became the foremost robot firm in the world and Engelberger grew rich beyond anything he could have dreamed of.

He has always been kind enough to give me much of the credit. I have met other roboticists such as Marvin Minsky and Shimon Y. Nof, who also admitted, cheerfully, the value of their early reading of my robot stories. Nof, who is an Israeli, had first read I, Robot in a Hebrew translation.

The roboticists take the Three Laws of Robotics seriously and they keep them as an ideal for robot safety. As yet, the types of industrial robots in use are so simple, essentially, that safety devices have to be built in externally. However, robots may confidently be expected to grow more versatile and capable and the Three Laws, or their equivalent, will surely be built in to their programming eventually.

I myself have never actually worked with robots, never even as much as seen one, but I have never stopped thinking about them. I have to date written at least thirty-five short stories and five novels that involve robots, and I dare say that if I am spared, I will write more.

My robot stories and novels seem to have become classics in their own right and, with the advent of the “Robot City” series of novels, have become the wider literary universe of other writers as well. Under those circumstances, it might be useful to go over my robot stories and describe some of those which I think are particularly significant and to explain why I think they are.

1. “Robbie:” This is the first robot story I wrote. I turned it out between May 10 and May 22 of 1939, when I was nineteen years old and was just about to graduate from college. I had a little trouble placing it, for John Campbell rejected it and so did Amazing Stories. However, Fred Pohl accepted it on March 25, 1940, and it appeared in the September 1940 issue of Super Science Stories, which he edited. Fred Pohl, being Fred Pohl, changed the title to “Strange Playfellow,” but I changed it back when I included it in my book I, Robot and it has appeared as “Robbie” in every subsequent incarnation.

Aside from being my first robot story, “Robbie” is significant because in it, George Weston says to his wife in defense of a robot that is fulfilling the role of nursemaid, “He just can’t help being faithful and loving and kind. He’s a machine—made so.” This is the first indication, in my first story, of what eventually became the “First Law of Robotics,” and of the basic fact that robots were made with built-in safety rules.

2. “Reason:” “Robbie” would have meant nothing in itself if I had written no more robot stories, particularly since it appeared in one of the minor magazines. However, I wrote a second robot story, “Reason,” and that one John Campbell liked. After a bit of revision, it appeared in the April 1941 issue of Astounding Science Fiction, and there it attracted notice. Readers became aware that there was such a thing as the “positronic robots,” and so did Campbell. That made everything afterward possible.

3. “Liar!:” In the very next issue of Astounding, that of May 1941, my third robot story, “Liar!” appeared. The importance of this story was that it introduced Susan Calvin, who became the central character in my early robot stories. This story was originally rather clumsily done, largely because it dealt with the relationship between the sexes at a time when I had not yet had my first date with a young lady. Fortunately, I’m a quick learner, and it is one story in which I made significant changes before allowing it to appear in I, Robot.

4. “Runaround:” The next important robot story appeared in the March 1942 issue of Astounding. It was the first story in which I listed the Three Laws of Robotics explicitly instead of making them implicit. In it, I have one character, Gregory Powell, say to another, Michael Donovan, “Now, look, let’s start with the Three Fundamental Rules of Robotics—the three rules that are built most deeply into a robot’s positronic brain.” He then recites them.

Later on, I called them the Laws of Robotics, and their importance to me was threefold:

a) They guided me in forming my plots and made it possible to write many short stories, as well as several novels, based on robots. In these, I constantly studied the consequences of the Three Laws.

b) It was by all odds my most famous literary invention, quoted in season and out by others. If all I have written is someday to be forgotten, the Three Laws of Robotics will surely be the last to go.

c) The passage in “Runaround” quoted above happens to be the very first time the word “robotics” was used in print in the English language. I am therefore credited, as I have said, with the invention of that word (as well as of “robotic,” “positronic,” and “psychohistory”) by the Oxford English Dictionary, which takes the trouble—and the space—to quote the Three Laws. (All these things were created by my twenty-second birthday and I seem to have created nothing since, which gives rise to grievous thoughts within me.)

5. “Evidence:” This was the one and only story I wrote while I spent eight months and twenty-six days in the Army. At one point I persuaded a kindly librarian to let me remain in the locked library over lunch so that I could work on the story.It is the first story in which I made use of a humanoid robot. Stephen Byerley, the humanoid robot in question (though in the story I don’t make it absolutely clear whether he is a robot or not), represents my first approach toward R. Daneel Olivaw, the humaniform robot who appears in a number of my novels. “Evidence” appeared in the September 1946 issue of Astounding Science Fiction.

6. “Little Lost Robot:” My robots tend to be benign entities. In fact, as the stories progressed, they gradually gained in moral and ethical qualities until they far surpassed human beings and, in the case of Daneel, approached the god-like. Nevertheless, I had no intention of limiting myself to robots as saviors. I followed wherever the wild winds of my imagination led me, and I was quite capable of seeing the uncomfortable sides of the robot phenomena.

It was only a few weeks ago (as I write this) that I received a letter from a reader who scolded me because, in a robot story of mine that had just been published, I showed the dangerous side of robots. He accused me of a failure of nerve.

That he was wrong is shown by “Little Lost Robot” in which a robot is the villain, even though it appeared nearly half a century ago. The seamy side of robots is not the result of a failure in nerve that comes of my advancing age and decrepitude. It has been a constant concern of mine all through my career.

7. “The Evitable Conflict:” This was a sequel to “Evidence” and appeared in the June 1950 issue of Astounding. It was the first story I wrote that dealt primarily with computers (I called them “Machines” in the story) rather than with robots per se. The difference is not a great one. You might define a robot as a “computerized machine” or as a “mobile computer. “ You might consider a computer as an “immobile robot.” In any case, I clearly did not distinguish between the two, and although the Machines, which don’t make an actual physical appearance in the story, are clearly computers, I included the story, without hesitation, in my robot collection, I, Robot, and neither the publisher nor the readers objected. To be sure, Stephen Byerley is in the story, but the question of his roboticity plays no role.

8. “Franchise:” This was the first story in which I dealt with computers as computers, and I had no thought in mind of their being robots. It appeared in the August 1955 issue of It Worlds of Science Fiction, and by that time I had grown familiar with the existence of computers. My computer is “Multivac,” designed as an obviously larger and more complex version of the actually existing “Univac. “ In this story, and in some others of the period that dealt with Multivac, I described it as an enormously large machine, missing the chance of predicting the miniaturization and etherealization of computers.

9. “The Last Question:” My imagination didn’t betray me for long, however. In “The Last Question,” which appeared first in the November 1956 issue of Science Fiction Quarterly, I discussed the miniaturization and etherealization of computers and followed it through a trillion years of evolution (of both computer and man) to a logical conclusion that you will have to read the story to discover. It is, beyond question, my favorite among all the stories I have written in my career.

10. “The Feeling of Power: “The miniaturization of computers played a small role as a side issue in this story. It appeared in the February 1958 issue of If and is also one of my favorites. In this story I dealt with pocket computers, which were not to make their appearance in the marketplace until ten to fifteen years after the story appeared. Moreover, it was one of the stories in which I foresaw accurately a social implication of technological advance rather than the technological advance itself.

The story deals with the possible loss of ability to do simple arithmetic through the perpetual use of computers. I wrote it as a satire that combined humor with passages of bitter irony, but I wrote more truly than I knew. These days I have a pocket computer and I begrudge the time and effort it would take me to subtract 182 from 854. I use the darned computer. “The Feeling of Power” is one of the most frequently anthologized of my stories.

In a way, this story shows the negative side of computers, and in this period I also wrote stories that showed the possible vengeful reactions of computers or robots that are mistreated. For computers, there is “Someday,” which appeared in the August 1956 issue of Infinity Science Fiction, and for robots (in automobile form) see “Sally,” which appeared in the May-June 1953 issue of Fantastic.

11. “Feminine Intuition:” My robots are almost always masculine, though not necessarily in an actual sense of gender. After all, I give them masculine names and refer to them as “he.” At the suggestion of a female editor, JudyLynn del Rey, I wrote “Feminine Intuition,” which appeared in the October 1969 issue of The Magazine of Fantasy and Science Fiction. It showed, for one thing, that I could do a feminine robot, too. She was still metal, but she had a narrower waistline than my usual robots and had a feminine voice, too. Later on, in my book Robots and Empire, there was a chapter in which a humanoid female robot made her appearance. She played a villainous role, which might surprise those who know of my frequently displayed admiration of the female half of humanity.

12. “The Bicentennial Man:” This story, which first appeared in 1976 in a paperback anthology of original science fiction, Stellar #2, edited by Judy-Lynn del Rey, was my most thoughtful exposition of the development of robots. It followed them in an entirely different direction from that in “The Last Question. “ What it dealt with was the desire of a robot to become a man and the way in which he carried out that desire, step by step. Again, I carried the plot all the way to its logical conclusion. I had no intention of writing this story when I started it. It wrote itself, and turned and twisted in the typewriter. It ended as the third favorite of mine among all my stories. Ahead of it come only “The Last Question,” mentioned above, and “The Ugly Little Boy,” which is not a robot story.

13. “The Caves of Steel:” Meanwhile, at the suggestion of Horace L. Gold, editor of Galaxy, I had written a robot novel. I had resisted doing so at first for I felt that my robot ideas only fit the short story length. Gold, however, suggested I write a murder mystery dealing with a robot detective. I followed the suggestion partway. My detective was a thoroughly human Elijah Baley (perhaps the most attractive character I ever invented, in my opinion), but he had a robot sidekick, R. Daneel Olivaw. The book, I felt, was the perfect fusion of mystery and science fiction. It appeared as a three-part serial in the October, November, and December 1953 issues of Galaxy, and Doubleday published it as a novel in 1954.

What surprised me about the book was the reaction of the readers. While they approved of Lije Baley, their obvious interest was entirely with Daneel, whom I had viewed as a mere subsidiary character. The approval was particularly intense in the case of the women who wrote to me. (Thirteen years after I had invented Daneel, the television series Star Trek came out, with Mr. Spock resembling Daneel quite closely in character—something which did not bother me—and I noticed that women viewers were particularly interested in him, too. I won’t pretend to analyze this.)

14. “The Naked Sun:” The popularity of Lije and Daneel led me to write a sequel, The Naked Sun, which appeared as a three-part serial in the October, November, and December 1956 issues of Astounding and was published as a novel by Doubleday in 1957. Naturally, the repetition of the success made a third novel seem the logical thing to do. I even started writing it in 1958, but things got in the way and, what with one thing and another, it didn’t get written till 1983.

15. “The Robots of Dawn:” This, the third novel of the Lije Baley/R. Daneel series, was published by Doubleday in 1983. In it, I introduced a second robot, R. Giskard Reventlov, and this time I was not surprised when he turned out to be as popular as Daneel.

16. “Robots and Empire:” When it was necessary to allow Lije Baley to die (of old age), I felt I would have no problem in doing a fourth book in the series, provided I allowed Daneel to live. The fourth book, Robots and Empire, was published by Doubleday in 1985. Lije’s death brought some reaction, but nothing at all compared to the storm of regretful letters I received when the exigencies of the plot made it necessary for R. Giskard to die.

Of the short stories I have listed as “notable” you may have noticed that three—”Franchise,” “The Last Question,” and “The Feeling of Power”—are not included in the collection you are now holding. This is not an oversight, nor is it any indication that they are not suitable for collection. The fact is that each of the three is to be found in an earlier collection, Robot Dreams, that is a companion piece for this one. It wouldn’t be fair to the reader to have these stories in both collections.

To make up for that, I have included in Robot Visions nine robot stories that are not listed above as “notable.” This in no way implies that these nine stories are inferior, merely that they broke no new ground.

Of these nine stories, “Galley Slave” is one of my favorites, not only because of the word-play in the title, but because it deals with a job I earnestly wish a robot would take off my hands. Not many people have gone through more sets of galleys than I have.

“Lenny” shows a human side of Susan Calvin that appears in no other story, while “Someday” is my foray into pathos. “Christmas Without Rodney” is a humorous robot story, while “Think!” is a rather grim one. “Mirror Image” is the only short story I ever wrote that involves R. Daneel Olivaw, the co-hero of my robot novels. “Too Bad!” and “Segregationist” are both robot stories based on medical themes. And, finally, “Robot Visions” is written specifically for this collection.

So it turns out that my robot stories have been almost as successful as my Foundation books, and if you want to know the truth (in a whisper, of course, and please keep this confidential) I like my robot stories better.

Finally, a word about the essays in this book. The first essay was written in 1956. All the others have appeared in 1974 and thereafter. Why the eighteen-year gap?

Easy. I wrote my first robot story when I was nineteen, and I wrote them, on and off, for over thirty years without really believing that robots would ever come into existence in any real sense—at least not in my lifetime. The result was that I never once wrote a serious essay on robotics. I might as well expect myself to have written serious essays on Galactic empires and psychohistory. In fact, my 1956 piece is not a serious discussion of robotics but merely a consideration of the use of robots in science fiction.

It was not till the mid-1970s, with the development of the microchip, that computers grew small enough, versatile enough, and cheap enough to allow computerized machinery to become practical for industrial use. Thus, the industrial robot arrived—extremely simple compared to my imaginary robots, but clearly en route.

And, as it happened, in 1974, just as robots were becoming real, I began to write essays on current developments in science, first for American Way magazine and then for the Los Angeles Times Syndicate. It became natural to write an occasional piece on real robotics. In addition, Byron Preiss Visual Publications, Inc., began to put out a remarkable series of books under the general title of Isaac Asimov’s Robot City, and I was asked to do essays on robotics for each of them. So it came about that before 1974, I wrote virtually no essays on robotics, and after 1974 quite a few. It’s not my fault, after all, if science finally catches up to my simpler notions.[[1]](#footnote-1)

1. You are now ready to plunge into the book itself. Please remember that the stories, written at different times over a period of half a century, may be mutually inconsistent here and there. As for the concluding essays—written at different times for different outlets—they are repetitious here and there. Please forgive me in each case. [↑](#footnote-ref-1)