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The Development of Science Fiction in Literature; Through the Analysis of I, Robot by Isaac Asimov

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ABSTRACT: As machines become more powerful and necessary in our lives, we seem to want to make them invisible—to forget them. Even Apple Computer's stunning counter-design, bright color approach is balanced by its use of organic, rounded forms: there are more curves in nature than straight lines. The push in design is always towards the smaller, the more discreet. It's as if by making the technology that dominates our lives less apparent, we can pretend that we are still in control—not such a different arrangement from what Asimov imagined. Asimov became fascinated with pulp science fiction magazines and by age eleven he began to write, imitating in them in subject matter and style. By eighteen, he had sold his first story, and by twenty-one he had published "Robbie"—the first tale in the series gathered here—after several rejections. Over the next few years, he continued to test the Three Laws of Robotics in a series of robot stories.

I. INTRODUCTION

In 1941, inspired by Gibbon's Decline and Fall of the Roman Empire, Asimov imagined writing about the rise and fall of future civilizations as if he were a historian looking back. He called such writing future-historical. The first story, "Foundation," grew into a series that rivaled his robot stories for fame and influence. By 1949, the two series (and other writings), had cemented Asimov's reputation as one of "The Big Three," along with groundbreaking science fiction authors Arthur C. Clarke and Robert Heinlein. Even with early success, Asimov could not afford to be a full time writer until 1958. Meanwhile, he continued to write while obtaining his B.S. in 1939, M.A. in 1941, and Ph.D. in 1948 from Columbia University in the field of Chemistry. He taught at Boston University from 1949 to 1958 and remained a faculty member throughout his life.

This "science" part of Asimov's science fiction shows in his early commitment to make the science in his stories realistic (or at least plausible). In addition, throughout the 1960s and 1970s he primarily wrote non-fiction science works that covered a dazzling number of subjects including Astronomy, Earth Sciences, Physics, and Biology, among others. Calling Asimov a prolific writer would be an understatement. Through the years he tried his hands at literary criticism (from Shakespeare to Gilbert and Sullivan), humor (mainly limericks), children's literature, autobiography, and editing. In addition, he managed to find time to write histories of Europe, North America, Greece, Egypt, England, and Earth. He wrote more than 1,600 essays and published at least 450 books. Famously, Asimov had at least one book published in each of the ten major Dewey Decimal library classifications. As he said in an interview, "I wrote everything I could think of."

Asimov won every major science fiction award during his life. He won seven Hugo awards, the first in 1963 and the last in 1995. He was also honored with two Nebula awards. In 1986, the Science Fiction Writers Association named him a Grand Master and eleven years later he was inducted into the Science Fiction and Fantasy Hall of Fame. Asimov died in 1992 but his work lives on through new generations of readers, writers, and scientists. Rather than being outdated, his writing has proved prophetic. Reading his stories about robots in 1950, we would have thought that his reach exceeded his grasp. As advances in robotics and brain imaging have brought the idea of a human-like robot closer, we recognize that the day may come when we just might see Robbie tending to our own children.

I, ROBOT turns the world of science fiction literature on its head. Rather than telling the typical tale of a humanoid machine run amok (e.g., Terminator), SFWA Grand Master Isaac Asimov asks readers to imagine a world where robots protect us from our own worst nature. Beginning with a simple story about the relationship between a little girl and a limited-function robot, I Robot moves on to explore, in subsequent stories, increasingly sophisticated thoughts,

questions, and moral complexities. In the process the book reveals Asimov's overarching vision of a future that entangles inextricably the humans and the machines.

The stories grew from Asimov's opinion that anyone smart enough to create robots would be smart enough to make sure that those robots wouldn't attack their makers. Conceived by Asimov as the Three Laws of Robotics—essential laws built into the robots' inner workings—these Laws freed science fiction writers to develop robots as characters instead of portraying them as monstrous things. I, ROBOT hints loudly that robots are a “better breed” than humans and though they were created to serve, they will inevitably become the masters.

At first Asimov had trouble getting “Robbie,” the opening story in I, ROBOT, published. But throughout the 1940s the subsequent tales appeared regularly in pulp science fiction magazines. In 1949, Asimov gathered the stories into a book that he wanted to call Mind and Iron. (The publisher prevailed with I, ROBOT.) The collection has enjoyed great success through the years and is offered by Spectra in a compact, affordable, and eminently readable edition for you—or your robot.

II. RELATED WORK

“Introduction” 2057: Earth., An unnamed reporter for “Interplanetary Press” prepares to interview Susan Calvin, a seventy-five-year-old “Robo psychologist” who works for U.S. Robot and Mechanical Men, Inc., (U.S. Robots). Accused of being emotionless like a robot, Calvin argues that robots are more than mechanical parts, “They're a cleaner better breed than we [humans] are.” Calvin reminisces about early opposition to robots from labor unions (that were worried about competition) and religious groups (that were worried about sacrilege). Against these anti-robot arguments she holds the memory of an early robot model named Robbie, which was sold in 1996 as a nursemaid for a little girl. Calvin begins to tell the story.

“Robbie” 1998: Earth. Robbie the Robot plays hide-and-go-seek outdoors with his charge, nine-year-old Gloria Weston. Robbie lets her win. Gloria is a demanding but charming girl who loves Robbie. At Robbie's gestured urging (he cannot speak), she begins to tell him his favorite story, Cinderella, but her mother, Grace, calls them to come inside. Grace does not trust Robbie with her daughter and badgers her husband, George, to get rid of him until George finally gives in. Gloria is heartbroken when her parents take away Robbie. In an attempt to distract her, her parents decide to take Gloria on a trip to New York, hoping the excitement of the city will take her mind off Robbie. While in New York they tour the U.S. Robots factory. Gloria spies Robbie, one of “the robots creating more robots.” She runs toward him—right into the path of a moving tractor. Before anyone else has time to react, Robbie snatches Gloria out of harm's way. Because Robbie has saved Gloria's life, her mother grudgingly allows the robot to return to the family. At this point the frame story (Susan Calvin talking to the reporter) resumes. Calvin tells us that robots were banned from Earth between 2003 and 2007. To ensure the company's survival, U.S. Robots started developing mining models for other planets. Calvin recalls two troubleshooters, Mike Donovan and Gregory Powell, who worked with the experimental designs in “the teens.”

“Runaround” 2015: Mercury. Gregory Powell and Mike Donovan have sent robot SPD 13, “Speedy,” on a quest for selenium, a necessary ingredient for their life support machinery. Selenium is somewhat dangerous to Speedy, and when the robot doesn't return, Powell and Donovan decide they must go retrieve him from the surface. They find Speedy circling the selenium pool and gibbering. Speedy has gone crazy because two of the fundamental laws of robotics have come into conflict. Powell ordered Speedy to get the selenium (Second Law: always obey human orders). But since Powell wasn't very insistent, the Second Law didn't quite overwhelm the Third Law (self-protection). Caught between conflicting directives, Speedy hovers around the selenium pool, not quite able to get close enough to harm himself, but not able to leave the site because he has been ordered to go to the pool. To remove Speedy's conflict, Powell walks towards Speedy, purposely going too far from safety for him to be able to return without Speedy's help.

Speedy sees him, causing the First Law to kick in (do not harm or allow a human to come to harm through inaction). Speedy saves Powell and they send the robot back for the selenium, this time installing in Speedy Second Law orders firm enough to counteract any Third Law thoughts of self-preservation. Speedy returns with the selenium and the pair anticipate their next work assignment at the space stations.

“Reason” 2015: Space Station. QT-1 (Cutie), a new model, refuses to believe that inferior humans created superior robots. Cutie decides that an Energy Converter has created robots, and that he is its Prophet. Cutie’s religion spreads to the other robots: they obey Cutie, but not Powell or Donovan. Meanwhile, a potentially dangerous electron storm is approaching. Widespread destruction on earth could occur if the storm is able to throw out of focus the energy beam sent from the station to earth. Cutie will not let Powell and Donovan make adjustments. To Cutie, humans are obsolete. Donovan and Powell try to argue with Cutie, but all their attempts fail. They then try to prove to Cutie that humans build robots by building a robot themselves. Cutie argues that the pair only assembled the robot; they did not create it. The electron storm comes and, luckily, Cutie keeps the beam focused because he believes he serves the Converter by keeping its instrumentation in balance (i.e., in focus). Powell points out that the Second Law (always obey human orders) requires QT to obey. No matter what robots believe to be the ultimate source of command, they will still do their duties.

“Catch That Rabbit” 2016: Asteroid. Donovan and Powell are sent to an asteroid to test a mining robot, DV-5 (Dave), that controls six sub robots. Dave has a problem: sometimes, for no apparent reason, the robot stops mining and starts marching his sub robots in drills. Though upset at his own behavior, Dave can’t explain why he is doing this. Donovan and Powell interview a sub robot, but that is like asking a “finger” why the hand does what it does. They figure out that situations requiring personal initiative (e.g., emergencies) cause the problem. But they can’t understand why because Dave always resumes his correct duties when they show up. They can’t take Dave apart to test him: all the circuits are intertwined, which means that testing them in isolation won’t help. They decide to create an emergency without Dave knowing and then watch what happens. They cause a cave-in on themselves, but Dave goes marching off with his sub robots, leaving them trapped. Powell then shoots one of the sub robots. Dave comes back to rescue them. Powell figured out that the six sub robots needed more command attention during an emergency, which put too much stress on “a special co-ordinating circuit.” With fewer robots to attend to, Dave was able to handle emergencies. At the end of this tale the frame story resumes with Susan Calvin. The reporter asks her if a robot had ever “gone wrong” on her watch. She hesitates, but then admits that this did happen once, and launches into the story of Herbie.

“Liar!” 2021: Earth. U.S. Robots accidentally creates RB-34 (Herbie), a robot that can read minds. Susan Calvin, Alfred Lanning, Milton Ashe, and Peter Bogert are assigned to find out how the mind reading has changed the robot: “what harm it has done to his ordinary RB [robot] properties.” Herbie has figured out that Calvin loves Ashe but does not feel worthy of being loved in return. Herbie assures her that Ashe loves her and that a woman Ashe brought to visit was only a cousin. When Bogert consults Herbie, the robot tells him that the director, Lanning, has retired and has put Bogert in charge. When Lanning questions some of Bogert’s calculations, Bogert informs an incredulous Lanning that he is no longer the boss. Later, during a conversation with Ashe, Calvin finds out that the girl isn’t Ashe’s cousin but his fiancée. Calvin realizes that Herbie has been lying to them because it was following the First Law of Robotics (do not harm a human). By telling each person what s/he wanted to hear, the robot was trying not to hurt the humans. Calvin asks the robot what went wrong in its assembly that made it able to read minds. This throws the robot into an impossible conflict. The robot can’t answer because it thinks it will make Lanning and Ashe feel bad to know that a robot figured out something that the scientists couldn’t. On the other hand, it must answer because Lanning and Ashe want to know the answer (Second Law: obey human commands). Since either action will cause harm to humans, the robot collapses. The frame story resumes again with Calvin sitting behind her desk with her face “white and cold.”

“Little Lost Rabbit” 2029: Hyper Base. Susan Calvin and Peter Bogert are called to a hyper base to identify one missing NS-S (Nestor) robot out of a fleet of sixty-three seemingly identical models. The missing robot is identical to

all the others except that its positronic brain is not fully wired with the entire First Law of Robotics (against harming humans). It turns out that a worker, Gerald Black, got annoyed with the robot and told it, "Go lose yourself." Obeying the order, Nestor 10 made itself indistinguishable from other robots. To flush out Nestor 10, Calvin arranges to have all the robots see a rock drop toward a human (the rock is deflected at the last second). She measures the reaction time of the robots as they rush to protect the human, reasoning that the robot that is not wired with a complete First Law will react differently. Her reasoning is wrong: they all react the same way. She tries another strategy. She tells the robots that they will be electrocuted if they move towards the human. Calvin reasons that only the robot with a weak First Law won't move because the Third Law, self-preservation, will equal, not override, the First Law. But Nestor 10 had pointed out to the other robots earlier that if they were going to die, they wouldn't be able to save the person anyway, so it was better not to move so they could live to save someone else another day. Finally, Calvin arranges a third test to flush out Nestor 10. Only Nestor 10 can tell the difference between harmless and harmful radiation. When the Nestor robots are all told that harmful radiation will be between them and the person in danger, all but one—Nestor 10—remain seated when the rock falls. Nestor 10 moves because he can see that the radiation is not dangerous. He tries to attack Calvin because she has found him out and the Second Law (obey orders) outweighs the weak First Law (don't harm people). But because the room is bathed in gamma radiation, which kills robot brains, she survives.

"Escape!" 2030: Earth. A competing robot company, Consolidated Robots, asks U.S. Robots to solve a problem that fried their own "Super-Thinker." The problem is how to build a hyperspace drive for humans. Susan Calvin thinks that the reason Consolidated is having problems is because building the hyperspace drive involves harm to humans, it brings the First Law (do not harm humans) and Second Law (obey human orders) into conflict. U.S. Robot's own super-thinker, "The Brain," however, is equipped with a personality. Calvin thinks that The Brain will be able to handle the dilemma because having a personality—emotional circuitry—makes it more "resilient." But when the scientists feed the problem to The Brain, it doesn't even acknowledge the existence of a problem, and promises to build the ship. The story jumps ahead to Powell and Donovan inspecting the ship two months later. While inside, the ship takes off and as the ship makes an interstellar jump, each man has a near-death experience. The men return from beyond the galaxy and Calvin learns that, during their time in hyperspace, the two were technically dead (matter turns to energy at light speed). Why was The Brain able to build the ship if it caused human death? It turns out that Calvin had adjusted The Brain's controls to play down the significance of death for the robot. Since death on the ship was temporary, The Brain, unlike Consolidated's "Super Thinker," was able to ignore the harm aspect (First Law) of the order and build the ship (Second Law).

"Evidence" 2032. In the frame story, Calvin discusses how earth's political structure changed from individual nations to large "regions." She recalls a man, Stephen Byerly, who ran for a mayoralty of one of the regions. The story begins with Francis Quinn, a politician, trying to convince Lanning, Director of U.S. Robots, to keep Byerly from political office because Byerly is a robot. Byerly denies this, but lets Quinn base his campaign on testing whether or not he is a robot. Byerly returns home and tells John, an old, crippled man who lives with him and who he calls "teacher," about Quinn's strategy. Once informed that Byerly might be a robot, Fundamentalists begin huge protests outside Byerly's home. He goes outside to talk to them and a man challenges Byerly to hit him. Byerly obliges and Calvin pronounces him a human, because the First Law (do not harm a human) would have stopped him if he were a robot. Later, Calvin reveals to Byerly that she suspects that he really is a robot. She recalls that a biophysicist named Byerly was horribly crippled in an accident. Calvin theorizes that the real Byerly is actually the old cripple, "John," and that he built a new body around a positronic brain he'd acquired. Byerly doesn't confess but does admit that he spread the rumor that if he were really a robot, he couldn't hit a human being. Calvin suggests to him that the human Byerly hit wasn't really a human, but another robot, which let him avoid any conflict with the First Law. She admits later that she doesn't know whether or not he really was human.

"The Evitable Conflict" 2052: Earth. Earlier parts of the frame story give hints that Robots have evolved into

dominating influences in human life as “Machines.” These Machines are vast systems of calculating circuits that maintain the human economy to minimize the harm that humans cause themselves. Earth has “no unemployment, no overproduction or shortages. Waste and famine are words in history books. And so the question of ownership of the means of production becomes obsolescent.” Byerly, now “World Co-ordinator,” worries because production is not precise, which means that the machines may be malfunctioning. Byerly interviews the Vice-Coordinators for each of Earth’s four regions (Eastern, Tropic, European, and Northern) but each one tries to downplay the production problems. Byerly guesses that behind it all is the “Society for Humanity,” a small group of powerful men “who feel themselves strong enough to decide for themselves what is best for them, and not just to be told [by robots] what is best for others.” But Calvin assures Byerly that the Machines allow the Society’s plots so that it will create just enough turmoil to destroy itself. Given that even the cleverest attempts to overthrow the Machines only result in more data for the Machines to consider, large-scale disruptions (wars, economic turmoil, etc.) will be avoidable—evitable. “Only the Machines, from now on, are inevitable!”

III.CONCLUSION

Science Fiction has flourished in countries as diverse as China, Japan, and Brazil since the late nineteenth century as well. Perhaps not surprisingly, authors from these countries began writing speculative fiction at the same time that merchants began using industrial technologies. The earliest of these publications include Huang Jiang Diao Sou’s 1904 “Lunar Colony,” Oshikawa Shunro’s 1900 Undersea Warship, and Joachim Felício dos Santos’ 1868–72 Pages from the History of Brazil Written in the Year 2000. Anglo-American readers can learn about contemporary Chinese, Japanese, and Latin American SF in Dingbo Wu and Patrick D. Murphy’s 1989 Science Fiction from China, Gene van Troyer and Grania Davis’s 2007 Speculative Japan: outstanding tales of Japanese science fiction and fantasy, and Andrea L. Bell and Yolanda Molina-Gavilan’s 2003 Cosmos Latinos: an anthology of science fiction from Latin America and Spain. Like their Russian and Afrodiasporic counterparts, Chinese, Japanese, and Brazilian SF authors have both revised Western genre conventions and developed new ones in light of their own fantastic literary traditions to better dramatize the processes of industrialization and globalization in their own societies. Taken together, these speculative writing traditions demonstrate that SF is the literature not just of engineers, but of all people living in the modern world.

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