

Mirror Image

The Three Laws of Robotics 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.

Lije Baley had just decided to relight his pipe, when the door of his office opened without a preliminary knock, or announcement, of any kind. Baley looked up in pronounced annoyance and then dropped his pipe. It said a good deal for the state of his mind that he left it lie where it had fallen. "R. Daneel Olivaw," he said, in a kind of mystified excitement. "Jehoshaphat! It is you, isn't it?" "You are quite right," said the tall, bronzed newcomer, his even features never flicking for a moment out of their accustomed calm. "I regret surprising you by entering without warning, but the situation is a delicate one and there must be as little involvement as possible on the part of the men and robots even in this place. I am, in any case, pleased to see you again, friend Elijah." And the robot held out his right hand in a gesture as thoroughly human as was his appearance. It was Baley who was so unmanned by his astonishment as to stare at the hand with a momentary lack of understanding. But then he seized it in both his, feeling its warm firmness. "But Daneel, why? You're welcome any time, but-What is this situation that is a delicate one? Are we in trouble again? Earth, I mean?" "No, friend Elijah, it does not concern Earth. The situation to which I refer as a delicate one is, to outward appearances, a small thing. A dispute between mathematicians, nothing more. As we happened, quite by accident, to be within an easy Jump of Earth-" "This dispute took place on a starship, then?" "Yes, indeed. A small dispute, yet to the humans involved astonishingly large." Baley could not help but smile. "I'm not surprised you find humans astonishing. They do not obey the Three Laws." "That is, indeed, a shortcoming," said R. Daneel, Gravely, "and I think humans themselves are puzzled by humans. It may be that you are less puzzled than are the men of other worlds because so many more human beings live on Earth than on the Spacer worlds. If so, and I believe it is so, you could help us." R. Daneel paused momentarily and then said, perhaps a shade too quickly, "And yet there are rules of human behavior which I have learned. It would seem, for instance, that I am deficient in etiquette, by human standards, not to have asked after your wife and child." "They are doing well. The boy is in college and Jessie is involved in local politics. The amenities are taken care of. Now tell me how you come to be here." "As I said, we were within an easy J ump of Earth," said R. Daneel, "so I suggested to the captain that we consult you." "And the captain agreed?" Baley had a sudden picture of the proud and autocratic captain of a Spacer starship consenting to make a landing on Earth-of all worlds-and to consult an Earthman-of all people. "I believe," said R. Daneel, "that he was in a position where he would have agreed to anything. In addition, I praised you very highly; although, to be sure, I stated only the truth. Finally, I agreed to conduct all negotiations so that none of the crew, or passengers, would need to enter any of the Earthman cities." "And talk to any Earthman, yes. But what has happened?" "The passengers of the starship, Eta Carina, included two mathematicians who were traveling to Aurora to attend an interstellar conference on neurobiophysics. It is about these mathematicians, Alfred Ban Humboldt and Genna Sabbath, that the dispute centers. Have you perhaps, friend Elijah, heard of one, or both, of them?" "Neither one," said Baley, firmly. "I know nothing about mathematics. Look, Daneel, surely you haven't told anyone I'm a mathematics buff or-" "Not at all, friend Elijah. I know you are not. Nor does it matter, since the exact nature of the mathematics involved is in no way relevant to the point at issue." "Well, then, go on." "Since you do not know either man, friend Elijah, let me tell you that Dr. Humboldt is well into his twenty-seventh decade-pardon me, friend Elijah?" "Nothing. Nothing," said Baley, irritably. He had merely muttered to himself, more or less incoherently, in a natural reaction to the extended

life-spans of the Spacers. "And he's still active, despite his age? On Earth, mathematicians after thirty or so." Daneel said, calmly; "Dr. Humboldt is one of the top three mathematicians, by long-established repute, in the galaxy. Certainly he is still active. Dr. Sabbat, on the other hand, is quite young, not yet fifty, but he has already established himself as the most remarkable new talent in the most abstruse branches of mathematics." "They're both great, then," said Baley. He remembered his pipe and picked it up. He decided there was no point in lighting it now and knocked out the dottle. "What happened? Is this a murder case? Did one of them apparently kill the other?" "Of these two men of great reputation, one is trying to destroy that of the other. By human values, I believe this may be regarded as worse than physical murder." "Sometimes, I suppose. Which one is trying to destroy the other?" "Why, that, friend Elijah, is precisely the point at issue. Which?" "Go on." "Dr. Humboldt tells the story clearly. Shortly before he boarded the starship, he had an insight into a possible method for analyzing neural pathways from changes in microwave absorption patterns of local cortical areas. The insight was a purely mathematical technique of extraordinary subtlety, but I cannot, of course, either understand or sensibly transmit the details. These do not, however, matter. Dr. Humboldt considered the matter and was more convinced each hour that he had something revolutionary on hand, something that would dwarf all his previous accomplishments in mathematics. Then he discovered that Dr. Sabbat was on board." "Ah. And he tried it out on young Sabbat?" "Exactly. The two had met at professional meetings before and knew each other thoroughly by reputation. Humboldt went into it with Sabbat in great detail. Sabbat backed Humboldt's analysis completely and was unstinting in his praise of the importance of the discovery and of the ingenuity of the discoverer. Heartened and reassured by this, Humboldt prepared a paper outlining, in summary, his work and, two days later, prepared to have it forwarded subetherically to the co-chairmen of the conference at Aurora, in order that he might officially establish his priority and arrange for possible discussion before the sessions were closed. To his surprise, he found that Sabbat was ready with a paper of his own, essentially the same as Humboldt's, and Sabbat was also preparing to have it subetherized to Aurora." "I suppose Humboldt was furious." "Quite!" "And Sabbat? What was his story?" "Precisely the same as Humboldt's. Word for word." "Then just what is the problem?" "Except for the mirror-image exchange of names. According to Sabbat, it was he who had the insight, and he who consulted Humboldt; it was Humboldt who agreed with the analysis and praised it." "Then each one claims the idea is his and that the other stole it. It doesn't sound like a problem to me at all. In matters of scholarship, it would seem only necessary to produce the records of research, dated and initialed. Judgment as to priority can be made from that. Even if one is falsified, that might be discovered through internal inconsistencies." "Ordinarily, friend Elijah, you would be right, but this is mathematics, and not in an experimental science. Dr. Humboldt claims to have worked out the essentials in his head. Nothing was put in writing until the paper itself was prepared. Dr. Sabbat, of course, says precisely the same." "Well, then, be more drastic and get it over with, for sure. Subject each one to a psychic probe and find out which of the two is lying." R. Daneel shook his head slowly, "Friend Elijah, you do not understand these men. They are both of rank and scholarship, Fellows of the Imperial Academy. As such, they cannot be subjected to trial of professional conduct except by a jury of their peers-their professional peers-unless they personally and voluntarily waive that right." "Put it to them, then. The guilty man won't waive the right because he can't afford to face the psychic probe. The innocent man will waive it at once. You won't even have to use the probe." "It does not work that way, friend Elijah. To waive the right in such a case-to be investigated by laymen-is a serious and perhaps irrecoverable blow to prestige. Both men steadfastly refuse to waive the right to special trial, as a matter of pride. The question of guilt, or innocence, is quite subsidiary." "In that case, let it go for now. Put the matter in cold storage until you get to Aurora. At the neurobiophysical conference, there will be a huge supply of professional peers, and then-" "That would mean a tremendous blow to science itself, friend Elijah. Both men would suffer for having been the instrument of scandal. Even

the innocent one would be blamed for having been party to a situation so distasteful. It would be felt that it should have been settled quietly out of court at all costs." "All right. I'm not a Spacer, but I'll try to imagine that this attitude makes sense. What do the men in question say?" "Humboldt agrees thoroughly. He says that if Sabbat will admit theft of the idea and allow Humboldt to proceed with transmission of the paper-or at least its delivery at the conference, he will not press charges. Sabbat's misdeed will remain secret with him; and, of course, with the captain, who is the only other human to be party to the dispute." "But young Sabbat will not agree?" "On the contrary, he agreed with Dr. Humboldt to the last detail-with the reversal of names. Still the mirror-image." "So they just sit there, stalemated?" "Each, I believe, friend Elijah, is waiting for the other to give in and admit guilt." "Well, then, wait." "The captain has decided this cannot be done. There are two alternatives to waiting, you see. The first is that both will remain stubborn so that when the starship lands on Aurora, the intellectual scandal will break. The captain, who is responsible for justice on board ship will suffer disgrace for not having been able to settle the matter quietly and that, to him, is quite insupportable." "And the second alternative?" "Is that one, or the other, of the mathematicians will indeed admit to wrongdoing. But will the one who confesses do so out of actual guilt, or out of a noble desire to prevent the scandal? Would it be right to deprive of credit one who is sufficiently ethical to prefer to lose that credit than to see science as a whole suffer? Or else, the guilty party will confess at the last moment, and in such a way as to make it appear he does so only for the sake of science, thus escaping the disgrace of his deed and casting its shadow upon the other. The captain will be the only man to know all this but he does not wish to spend the rest of his life wondering whether he has been a party to a grotesque miscarriage of justice." Baley sighed. "A game of intellectual chicken. Who'll break first as Aurora comes nearer and nearer? Is that the whole story now, Daneel?" "Not quite. There are witnesses to the transaction." "Jehoshaphat! Why didn't you say so at once. What witnesses?" "Dr. Humboldt's personal servant-" "A robot, I suppose." "Yes, certainly. He is called R. Preston. This servant, R. Preston, was present during the initial conference and he bears out Dr. Humboldt in every detail." "You mean he says that the idea was Dr. Humboldt's to begin with; that Dr. Humboldt detailed it to Dr. Sabbat; that Dr. Sabbat praised the idea, and so on." "Yes, in full detail." "I see. Does that settle the matter or not? Presumably not." "You are quite right. It does not settle the matter, for there is a second witness. Dr. Sabbat also has a personal servant, R. Idda, another robot of, as it happens, the same model as R. Preston, made, I believe, in the same year in the same factory. Both have been in service for an equal period of time." "An odd coincidence-very odd." "A fact, I am afraid, and it makes it difficult to arrive at any judgment based on obvious differences between the two servants." "R. Idda, then, tells the same story as R. Preston?" "Precisely the same story, except for the mirror-image reversal of the names." "R. Idda stated, then, that young Sabbat, the one not yet fifty"-Lije Baley did not entirely keep the sardonic note out of his voice; he himself was not yet fifty and he felt far from young-"had the idea to begin with; that he detailed it to Dr. Humboldt, who was loud in his praises, and so on." "Yes, friend Elijah." "And one robot is lying, then." "So it would seem." "It should be easy to tell which. I imagine even a superficial examination by a good roboticist-" "A roboticist is not enough in this case, friend Elijah. Only a qualified robopsychologist would carry weight enough and experience enough to make a decision in a case of this importance. There is no one so qualified on board ship. Such an examination can be performed only when we reach Aurora-" "And by then the crud hits the fan. Well, you're here on Earth. We can scare up a robopsychologist, and surely anything that happens on Earth will never reach the ears of Aurora and there will be no scandal." "Except that neither Dr. Humboldt, nor Dr. Sabbat, will allow his servant to be investigated by a robopsychologist of Earth. The Earthman would have to-" He paused. Lije Baley said stolidly, "He'd have to touch the robot." "These are old servants, well thought of-" "And not to be sullied by the touch of Earthman. Then what do you want me to do, damn it?" He paused, grimacing. "I'm sorry, R. Daneel, but I see no reason for your having involved me." "I was on the ship on a mission utterly irrelevant to the problem

at hand. The captain turned to me because he had to turn to someone. I seemed human enough to talk to, and robot enough to be a safe recipient of confidences. He told me the whole story and asked what I would do. I realized the next Jump could take us as easily to Earth as to our target. I told the captain that, although I was at as much a loss to resolve the mirror-image as he was, there was on Earth one who might help." "Jehoshaphat!" muttered Baley under his breath. "Consider, friend Elijah, that if you succeed in solving this puzzle, it would do your career good and Earth itself might benefit. The matter could not be publicized, of course, but the captain is a man of some influence on his home world and he would be grateful." "You just put a greater strain on me." "I have every confidence," said R. Daneel, stolidly, "that you already have some idea as to what procedure ought to be followed." "Do you? I suppose that the obvious procedure is to interview the two mathematicians, one of whom would seem to be a thief." "I'm afraid, friend Elijah, that neither one will come into the city. Nor would either one be willing to have you come to them." "And there is no way of forcing a Spacer to allow contact with an Earthman, no matter what the emergency. Yes, I understand that, Daneel-but I was thinking of an interview by closed-circuit television." "Nor that. They will not submit to interrogation by an Earthman." "Then what do they want of me? Could I speak to the robots?" "They would not allow the robots to come here, either." "Jehoshaphat, Daneel. You've come." "That was my own decision. I have permission, while on board ship, to make decisions of that sort without veto by any human being but the captain himself-and he was eager to establish the contact. I, having known you, decided that television contact was insufficient. I wished to shake your hand." Lije Baley softened. "I appreciate that, Daneel, but I still honestly wish you could have refrained from thinking of me at all in this case. Can I talk to the robots by television at least?" "That. I think, can be arranged." "Something, at least. That means I would be doing the work of a robopsychologist-in a crude sort of way." "But you are a detective, friend Elijah, not a robopsychologist." "Well, let it pass. Now before I see them, let's think a bit. Tell me: is it possible that both robots are telling the truth? Perhaps the conversation between the two mathematicians was equivocal. Perhaps it was of such a nature that each robot could honestly believe its own master was proprietor of the idea. Or perhaps one robot heard only one portion of the discussion and the other another portion, so that each could suppose its own master was proprietor of the idea." "That is quite impossible, friend Elijah. Both robots repeat the conversation in identical fashion. And the two repetitions are fundamentally inconsistent." "Then it is absolutely certain that one of the robots is lying?" "Yes." "Will I be able to see the transcript of all evidence given so far in the presence of the captain, if I should want to?" "I thought you would ask that and I have copies with me." "Another blessing. Have the robots been cross-examined at all, and is that cross-examination included in the transcript?" "The robots have merely repeated their tales. Cross-examination would be conducted only by robopsychologists." "Or by myself?" "You are a detective, friend Elijah, not a-" "All right, R. Daneel. I'll try to get the Spacer psychology straight. A detective can do it because he isn't a robopsychologist. Let's think further. Ordinarily a robot will not lie, but he will do so if necessary to maintain the Three Laws. He might lie to protect, in legitimate fashion, his own existence in accordance with the Third Law. He is more apt to lie if that is necessary to follow a legitimate order given him by a human being in accordance with the Second Law. He is most apt to lie if that is necessary to save a human life, or to prevent harm from coming to a human in accordance with the First Law." "Yes." "And in this case, each robot would be defending the professional reputation of his master, and would lie if it were necessary to do so. Under the circumstances, the professional reputation would be nearly equivalent to life and there might be a near-First-Law urgency to the lie." "Yet by the lie, each servant would be harming the professional reputation of the other's master, friend Elijah." "So it would, but each robot might have a clearer conception of the value of its own master's reputation and honestly judge it to be greater than that of the other's. The lesser harm would be done by his lie, he would suppose, than by the truth." Having said that, Lije Baley remained quiet for a moment.

Then he said, "All right, then, can you arrange to have me talk to one of the robots-to R. Idda first, I think?" "Dr. Sabbat's robot?" "Yes," said Baley, dryly, "the young fellow's robot." "It will take me but a few minutes," said R. Daneel. "I have a micro-receiver outfitted with a projector. I will need merely a blank wall and I think this one will do if you will allow me to move some of these film cabinets." "Go ahead. Will I have to talk into a microphone of some sort?" "No, you will be able to talk in an ordinary manner. Please pardon me, friend Elijah, for a moment of further delay. I will have to contact the ship and arrange for R. Idda to be interviewed." "If that will take some time, Daneel, how about giving me the transcribed material of the evidence so far." Lije Baley lit his pipe while R. Daneel set up the equipment, and leafed through the flimsy sheets he had been handed. The minutes passed and R. Daneel said, "If you are ready, friend Elijah, R. Idda is. Or would you prefer a few more minutes with the transcript?" "No," sighed Baley, "I'm not learning anything new. Put him on and arrange to have the interview recorded and transcribed." R. Idda, unreal in two-dimensional projection against the wall, was basically metallic in structure-not at all the humanoid creature that R. Daneel was. His body was tall but blocky, and there was very little to distinguish him from the many robots Baley had seen, except for minor structural details. Baley said, "Greetings, R. Idda." "Greetings, sir," said R. Idda, in a muted voice that sounded surprisingly humanoid. "You are the personal servant of Gennao Sabbat, are you not?" "I am sir." "For how long, boy?" "For twenty-two years, sir." "And your master's reputation is valuable to you?" "Yes, sir." "Would you consider it of importance to protect that reputation?" "Yes, sir." "As important to protect his reputation as his physical life?" "No, sir." "As important to protect his reputation as the reputation of another." R. Idda hesitated. He said, "Such cases must be decided on their individual merit, sir. There is no way of establishing a general rule." Baley hesitated. These Spacer robots spoke more smoothly and intellectually than Earth-models did. He was not at all sure he could outthink one. He said, "If you decided that the reputation of your master were more important than that of another, say, that of Alfred Barr Humboldt, would you lie to protect your master's reputation?" "I would, sir." "Did you lie in your testimony concerning your master in his controversy with Dr. Humboldt?" "No, sir." "But if you were lying, you would deny you were lying in order to protect that lie, wouldn't you?" "Yes, sir." "Well, then," said Baley, "let's consider this. Your master, Gennao Sabbat, is a young man of great reputation in mathematics, but he is a young man. If, in this controversy with Dr. Humboldt, he had succumbed to temptation and had acted unethically, he would suffer a certain eclipse of reputation, but he is young and would have ample time to recover. He would have many intellectual triumphs ahead of him and men would eventually look upon this plagiaristic attempt as the mistake of a hot-blooded youth, deficient in judgment. It would be something that would be made up for in the future. "If, on the other hand, it were Dr. Humboldt who succumbed to temptation, the matter would be much more serious. He is an old man whose great deeds have spread over centuries. His reputation has been unblemished hitherto. All of that, however, would be forgotten in the light of this one crime of his later years, and he would have no opportunity to make up for it in the comparatively short time remaining to him. There would be little more that he could accomplish. There would be so many more years of work ruined in Humboldt's case than in that of your master and so much less opportunity to win back his position. You see, don't you, that Humboldt faces the worse situation and deserves the greater consideration?" There was a long pause. Then R. Idda said, with unmoved voice, "My evidence was a lie. It was Dr. Humboldt whose work it was, and my master has attempted, wrongfully, to appropriate the credit." Baley said, "Very well, boy. You are instructed to say nothing to anyone about this until given permission by the captain of the ship. You are excused." The screen blanked out and Baley puffed at his pipe. "Do you suppose the captain heard that, Daneel?" "I am sure of it. He is the only witness, except for us." "Good. Now for the other." "But is there any point to that, friend Elijah, in view of what R. Idda has confessed?" "of course there is. R. Idda's confession means nothing." "Nothing?" "Nothing at all. I pointed out that Dr. Humboldt's position was the worse. Naturally, if he were

lying to protect Sabbat, he would switch to the truth as, in fact, he claimed to have done. On the other hand, if he were telling the truth, he would switch to a lie to protect Humboldt. It's still mirror-image and we haven't gained anything." "But then what will we gain by questioning R. Preston?" "Nothing, if the minor-image were perfect-but it is not. After all, one of the robots is telling the truth to begin with, and one is lying to begin with, and that is a point of asymmetry. Let me see R. Preston. And if the transcription of R. Idda's examination is done, let me have it. The projector came into use again. R. Preston stared out of it; identical with R. Idda in every respect, except for some trivial chest design. Baley said, "Greetings, R. Preston." He kept the record of R. Idda's examination before him as he spoke. "Greetings, sir," said R. Preston. His voice was identical with that of R. Idda. "You are the personal servant of Alfred Ban Humboldt are you not?" "I am, sir." "For how long, boy?" "For twenty-two years, sir." "And your master's reputation is valuable to you?" "Yes, sir." "Would you consider it of importance to protect that reputation?" "Yes, sir." "As important to protect his reputation as his physical life?" "No, sir." "As important to protect his reputation as the reputation of another?" R. Preston hesitated. He said, "Such cases must be decided on their individual merit, sir. There is no way of establishing a general rule." Baley said, "If you decided that the reputation of your master were more important than that of another, say, that of Genna Sabbat, would you lie to protect your master's reputation?" "I would, sir." "Did you lie in your testimony concerning your master in his controversy with Dr. Sabbat?" "No, sir." "But if you were lying, you would deny you were lying, in order to protect that lie, wouldn't you?" "Yes, sir." "Well, then," said Baley, "let's consider this. Your master, Alfred Barr Humboldt, is an old man of great reputation in mathematics, but he is an old man. If, in this controversy with Dr. Sabbat, he had succumbed to temptation and had acted unethically, he would suffer a certain eclipse of reputation, but his great age and his centuries of accomplishments would stand against that and would win out. Men would look upon this plagiaristic attempt as the mistake of a perhaps-sick old man, no longer certain in judgment. "If, on the other hand, it were Dr. Sabbat who had succumbed to temptation, the matter would be much more serious. He is a young man, with a far less secure reputation. He would ordinarily have centuries ahead of him in which he might accumulate knowledge and achieve great things. This will be closed to him, now, obscured by one mistake of his youth. He has a much longer future to lose than your master has. You see, don't you, that Sabbat faces the worse situation and deserves the greater consideration?" There was a long pause. Then R. Preston said, with unmoved voice, "My evidence was as I-" At that point, he broke off and said nothing more. Baley said, "Please continue, R. Preston." There was no response. R. Daneel said, "I am afraid, friend Elijah, that R. Preston is in stasis. He is out of commission." "Well, then," said Baley, "we have finally produced an asymmetry. From this, we can see who the guilty person is." "In what way, friend Elijah?" "Think it out. Suppose you were a person who had committed no crime and that your personal robot were a witness to that. There would be nothing you need do. Your robot would tell the truth and bear you out. If, however, you were a person who had committed the crime, you would have to depend on your robot to lie. That would be a somewhat riskier position, for although the robot would lie, if necessary, the greater inclination would be to tell the truth, so that the lie would be less firm than the truth would be. To prevent that, the crime-committing person would very likely have to order the robot to lie. In this way, First Law would be strengthened by Second Law; perhaps very substantially strengthened." "That would seem reasonable," said R. Daneel. "Suppose we have one robot of each type. One robot would switch from truth, unreinforced, to the lie, and could do so after some hesitation, without serious trouble. The other robot would switch from the lie, strongly reinforced, to the truth, but could do so only at the risk of burning out various positronic-track-ways in his brain and falling into stasis." "And since R. Preston went into stasis-" "R. Preston's master, Dr. Humboldt, is the man guilty of plagiarism. If you transmit this to the captain and urge him to face Dr. Humboldt with the matter at once, he may force a confession. If so, I hope you will tell me immediately." "I will certainly do so. You will excuse me, friend Elijah? I must talk to the captain privately."

"Certainly. Use the conference room. It is shielded." Baley could do no work of any kind in R. Daneel's absence. He sat in uneasy silence. A great deal would depend on the value of his analysis, and he was acutely aware of his lack of expertise in robotics. R. Daneel was back in half an hour-very nearly the longest half hour of Baley's life. There was no use, of course, in trying to determine what had happened from the expression of the humanoid's impassive face. Baley tried to keep his face impassive. "Yes, R. Daneel?" he asked. "Precisely as you said, friend Elijah. Dr. Humboldt has confessed. He was counting, he said, on Dr. Sabbath giving way and allowing Dr. Humboldt to have this one last triumph. The crisis is over and you will find the captain grateful. He has given me permission to tell you that he admires your subtlety greatly and I believe that I, myself, will achieve favor for having suggested you." "Good," said Baley, his knees weak and his forehead moist now that his decision had proven correct, "but Jehoshaphat, R. Daneel, don't put me on the spot like that again, will you?" "I will try not to, friend Elijah. All will depend, of course, on the importance of a crisis, on your nearness, and on certain other factors. Meanwhile, I have a question-" "Yes?" "Was it not possible to suppose that passage from a lie to the truth was easy, while passage from the truth to a lie was difficult? And in that case, would not the robot in stasis have been going from a truth to a lie, and since R. Preston was in stasis, might one not have drawn the conclusion that it was Dr. Humboldt who was innocent and Dr. Sabbath who was guilty?" "Yes, R. Daneel. It was possible to argue that way, but it was the other argument that proved right. Humboldt did confess, didn't he?" "He did. But with arguments possible in both directions, how could you, friend Elijah, so quickly pick the correct one?" For a moment, Baley's lips twitched. Then he relaxed and they curved into a smile. "Because, R. Daneel, I took into account human reactions, not robotic ones. I know more about human beings than about robots. In other words, I had an idea as to which mathematician was guilty before I ever interviewed the robots. Once I provoked an asymmetric response in them, I simply interpreted it in such a way as to place the guilt on the one I already believed to be guilty. The robotic response was dramatic enough to break down the guilty man; my own analysis of human behavior might not have been sufficient to do so." "I am curious to know what your analysis of human behavior was?" "Jehoshaphat, R. Daneel; think, and you won't have to ask. There is another point of asymmetry in this tale of mirror-image besides the matter of true-and-false. There is the matter of the age of the two mathematicians; one is quite old and one is quite young." "Yes, of course, but what then?" "Why, this. I can see a young man, flushed with a sudden, startling and revolutionary idea, consulting in the matter an old man whom he has, from his early student days, thought of as a demigod in the field. I can not see an old man, rich in honors and used to triumphs, coming up with a sudden, startling and revolutionary idea, consulting a man centuries his junior whom he is bound to think of as a young whippersnapper-or whatever term a Spacer would use. Then, too, if a young man had the chance, would he try to steal the idea of a revered demigod? It would be unthinkable. On the other hand, an old man, conscious of declining powers, might well snatch at one last chance of fame and consider a baby in the field to have no rights he was bound to observe. In short, it was not conceivable that Sabbath steal Humboldt's idea; and from both angles, Dr. Humboldt was guilty." R. Daneel considered that for a long time. Then he held out his hand. "I must leave now, friend Elijah. It was good to see you. May we meet again soon." Baley gripped the robot's hand, warmly, "If you don't mind, R. Daneel," he said, "not too soon."