CHAPTER - VI

BRAVE NEW WORLDS
If there is one distinctive feature of the present age, it is the rapidity with which things around us change. While change has been an ever present phenomenon, it was not noticeable in the past because the rate of change was negligible. Today things change so fast that one finds it difficult to keep track of the new inventions and discoveries in any single field like say medicine or computer technology. A few decades ago, computers were huge machines, occupying a great deal of space and costing vast amounts of money. Today the lap-top computer can be placed inside an executive's briefcase, it is affordable, and is more powerful than its huge ancestors.

In *Future Shock*, Alvin Toffler explains how almost as much has happened in the last few decades, as in the last fifty thousand years. If the last fifty thousand years of man's life on earth were divided in lifetimes were spent in caves. It has been possible to communicate from one lifetime to another only in the last seventy lifetimes because a of the discovery of writing, and it is only during the last six lifetimes that mankind has seen a printed word. We have been able to measure time
accurately only during the last four lifetimes and only in the last two have we used an electric motor. The "overwhelming majority of goods that we use in daily life today have been developed within the present, the 800th, lifetime."\(^1\)

During this 800th lifetime, man's relationship to the resources has reversed itself as is evident in the field of economic development. The original basis of civilization was agriculture. During this single lifetime, it's lost its domination in nation after nation. In most developed economies, less than fifteen percent of the population is engaged in agriculture. During this single lifetime, it's lost its domination in nation after nation. In most developed economies, less than fifteen percent of the population is engaged in agriculture. Toffler has pointed out that in 1956, more than fifty percent of the non-farm labour was engaged not in blue-collar jobs, but in white-collar jobs like 'retail trade, administration, communications, research, education, and other service categories. "By any means, this is a tremendous shift in economic and social terms.

Within a few decades, ten thousand years of agriculture and two centuries of industrialism have been replaced by the new age, "super-industrialism."

This acceleration in the different fields of activity is best understood by an account of the progress in transportation. Since 6000 B.C, the fastest mode of transport available to man over large distances was the camel caravan with an average speed of about eight miles per hour. How difficult it was to exceed this speed limit can be seen from the fact that the stage coach which began operating in England, in 1784, averaged only ten miles per hour, while the first locomotive, in 1825, could manage a top speed of only thirteen miles per hour. The lightning changes that followed are best described by Alvin Toffler:

It was probably not until the 1880's that man, with the help of a more advanced steam locomotive, managed to reach a speed of one hundred mph (mile per hour). It took the human race millions of years to attain that record.

It took only fifty-eight years, however, to quadruple that limit, so that by 1938 airborne man was cracking the 400-mph line. It took a mere twenty-years flick of time to the limit again. And by 1960's, rocket planes approached speeds of 4000mph, and men in space
capsules were circling the earth at 18,000 mph. Plotted on a graph, the line representing progress in the past generation would leap vertically off the page.2

This accelerative trend is seen in other areas also, like the amount of energy generated and consumed, altitudes reached, minerals mined or distances travelled, the 800th lifetime has more than exceeded what happened before it.

It is this kind of environment which is ripe for the growth of science fiction and consequently science fiction flourished only in highly industrialised societies. Today American science fiction is at the forefront because of America's Superpower status, technological advancement, and economic strength. Even in highly industrialised societies, science fiction is influenced by the different national traditions. Patrick Parrinder has highlighted the salient features of the science fiction of the four predominantly industrialised societies:

...Russian science fiction is seen to have been conditioned by its response to (and, at times, criticism of) the official utopianism

of the Soviet state; British science fiction owes its repeated visions of catastrophe to the long national history of industrial and imperial decline; German science fiction is replete with visions of the triumph of a master race; and American science fiction derives both the optimism and the ruthlessness of its approach from the frontier experience and the economic subjugation of the West.

...Science fiction, however, can be described as a homogeneous, international literature only to the extent that one is prepared to accept the conventional American view of it—as reflected, for example, in an anthology title like The Best From the Rest of the World...3

Though science fiction is a form of fantasy, its backgrounds are derived from those similar to ours, or those which can be approximated by logical extension of our background. Thus it will be seen that science fiction "maintains a respect for fact or presumptive fact, (while) fantasy makes a point of flouting these."

In New Maps of Hell: A Survey of Science Fiction, Kingsley Amis, quotes Fredrick Brown in attempting to distinguish the two modes. Brown has reworked the Midas story and this is how it reads in its science fiction setting.

Mr. Midas, who runs a Greek restaurant in the Bronx, happens to save the life of an extraterrestrial from a far planet who is living in New York anonymously as an observer for the Galactic Federation, to which Earth for obvious reasons is not yet ready to be admitted.... The extraterrestrial, who is a master of sciences far beyond ours, makes a machine which alters the molecular vibrations of Mr. Midas’s body so his touch has a transmuting effect on other objects.4

Amis says that it is not possible to turn a fantasy story into a science fiction story "merely by inserting a few lines of pseudo-scientific platter" because "in practise the arbitrary and whimsical development of nearly every story of fantasy soon puts it beyond recovery by any talk of Galactic Federations or molecular vibrations."

Having come so far we should now define science fiction. This is easier said than done because no two science fiction writers have agreed on a common definition. The differences in the definitions occur because each writer defines science fiction in such a way as to highlight his area of specialisation. Let us consider three definitions from well known practitioners of the craft, beginning with Kingsley Amis:

Science fiction is that class of prose narrative treating of a situation that could not arise in the world we know, but which is hypothesised on the basis of some innovation in science or technology, or pseudo-science or pseudo-technology, whether human or extra-terrestrial in origin.5

In this fairly straightforward definition, the emphasis is on the word "innovation." This gives freedom to the science fiction writer because he can choose from an inexhaustible source. The mention of "pseudo-science" and "pseudotechnology" in the definition means that a writer need not know science in any detail.

The definition of science fiction by Brian Aldiss, United Kingdom's best known science fiction writer, appears "slightly pretentious" because science fiction is generally thought to be light reading.

Science is the search for a definition of mankind and is status in the universe which will stand in our advanced but confused state of knowledge (science), and is characteristically cast in the Gothic or post-Gothic mode.6

5 Ibid., p.11.

According to Aldiss, in the light of the above definition, the most tried and true way of showing man's statue is to see how he reacts when confronted by a crisis. The crisis could be of his making (discovery of atomic power, and this power), or sciences (a new disease), or a natural one (the Sun dying out). When man faces the crises with extra-ordinary power, and this power is based on science or pseudo-science, then we have a work of science fiction. The greater power the protagonist enjoys over the ordinary, the closer will the work be to hard-core science fiction, and vice versa.

Asimov, on the other hand, defines science fiction thus:

(It) is that branch of literature that deals with human responses to changes in the level of science and technology.7

The "change in the level of science and technology" can be either "advances or retrogressions". Thus taking any

single aspect of scientific or technological change, the science fiction writer can choose from a very wide spectrum. For example, the use of robots for doing dangerous or repetitive jobs is gaining acceptance in society now. Taking his cue from this development, the science fiction writer can write a novel or a story about robots which are specifically designed to kill men, or about robots which take care of all mundane and dangerous work, thereby leaving man free for other pursuits. Closer attention to Asimov's definition will reveal that the accent is on "human response". Given such a definition, the science fiction writer needs to only fleetingly glance at the science and technology aspects of the story, while concentrating on the human angle. We shall see this precise trend in the works of Asimov which are studied in detail in the following pages.

The likely question which any student of science fiction will ask is, "What are the subjects with which science fiction deals"? From the foregoing, it is evident that a science fiction writer takes a given situation and logically advances it further by imaginatively applying science and technology. A few
examples will suffice to show that almost any subject is suitable raw material for a science fiction story.

1. Energy:

Fossil fuels, coal and oil, made the Industrial Revolution possible. Everyone knows that both of these will not last forever. Governments have already started using atomic energy as a power source. In many countries, especially America, solar energy is also being tapped. To a science fiction writer this knowledge can be the kernel of a story or a novel, where the group of persons who control future energy supplies uses it as a tool for blackmail or power or wealth. The development of permanent energy sources can be a fit subject for a writer.

2. Population Explosion:

Whether it be food or minerals, energy or water, the earth has a limited quantity of these resources. If the population continues to grow at the present rate, it is inevitable that there will be widespread famine and
irreparable environmental damage. Therefore population control is at the forefront of government plans, especially in underdeveloped and heavily populated countries like China, India, Bangladesh, and Nigeria. The scientific methods employed to control population; humane or cruel, exploitative or beneficial, can be the hub around which a science fiction story revolves.

3. **Space Travel:**

When the earth is drained of oil and coal and the population has increased to unsustainable levels, man will be forced to migrate from the earth to other planets. The hazards of space travel, including encounters with other intelligent life and monsters from outer space, have been staple food for science-fiction-hungry writers.

4. **Space settlements:**

Once human beings take to space, it is a matter of time before a full-fledged space colony is established. Since no other planet
or galaxy has an atmosphere in which man can survive, it would be necessary to create enormous artificial structures which will be able to support millions of people. What would such a large group of people not need? Beginning with agriculture, an entire civilization will have to be created in hostile conditions. People who are already enjoying the benefits of these new cultures would like to keep new comers out—a logical extension of the immigration policies of advanced countries.

5. Robots:
Throughout history, man has used animals or other human beings to do exhausting manual work. Today machines have replaced muscle in a wide range of activities. Infact, in developed countries, robots are being increasingly used in dangerous jobs. If these can be developed with an approach to human versatality and human appearance, then they can make full use of technological tools made for human beings. If they are intelligent in
addition and incapable of revolt, then they
can be man's friends as well as servants.

What is a robot? In 1920, Karel Capek, a Czech
playwright published a play, R.U.R. The initials stand
for Rossum's Industrial Robots. In Czech, the word
"robota" means "one who is engaged in involuntary
servitude" or a slave. In the play, the artificial
human beings created in the industrial plant are called
robots. Ironically, in today's terminology, they would
be "androids". Robots are mechanical devices, built
largely of metal, with the appearance of a human
beings. The robot is thus a machine with the
appearance of a human being. In the stories and novels
that we will study in detail, these robots are equipped
with "positronic brains" which enable them to speak
and respond to human commands.

Before taking up any story about robots by Asimov,
it is necessary to recapitulate the Three Laws of
Robotics which have been referred to in the first
chapter. They are:
First Law : A robot may not injure a human being, or through inaction, allow a human being to come to harm.

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

Third Law : A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.8

Asimov has made these Laws the basis of all stories and novels concerned with robots. The reason for this is quite simple. Being machines, robots are seen as dangerous and undesirable. If they are intelligent also, then there is the additional antagonism because they can replace human beings in practically every field of activity, thereby rendering them jobless. By building the Three Laws deeply in the robot's brain,

Asimov achieved three things. Firstly, the human characters in the novels would not have to fear robots. Secondly, the robots are one notch below human beings, however intelligent they may be. Thirdly, the robots can be servants, friends, protectors, or companions depending on the needs of the plot.

The action in the short story *Runaround* takes place on the planet Mercury in the year 2015. The principal characters are two humans, Gregory Powell and Mike Donovan, and a robot, Speedy. The story is about the second expedition to Mercury, ten years after the first one. The aim of the expedition is to "report on the advisability of reopening the Sunside Mining Station". When Speedy does not return after five hours, the excitable Donovan reports the fact to Powell, whose favourite platitude is that nothing can be gained from excitement.

This is a crisis. On tracking Speedy, they find that the robot is circling the selenium pool. But why is selenium so important?

It worked itself as simply as a syllogism. The photo-cell banks that alone stood between the full power of Mercury's monstrous sun and
themselves were shot to hell. The only thing that could save them was selenium—the only thing that could get the selenium was Speedy. If Speedy didn't come back, no selenium. No selenium, no photo-cell banks. No photo-banks—well, death by slow broiling is one of the most unpleasant ways of being done in.9

The first thing to be noticed about the paragraph quoted above is the racy languages of the thriller. The tone is half-humourous. A grave situation is presented without resorting to heavy language or symbolism. This is true of the other works of Asimov also, and is one of the reasons for his immense popularity.

The plan which Powell and Donovan think up is to take a couple of robots from the earlier expeditions and track down Speedy. The earlier model robots move only when a human being sits on them. They have humped backs so that the riders can sit comfortably, and the shoulders have hollows in which the rider can place his thighs. This was done so as to assure people that the robots could not move around on their own and were completely at the back and call of human beings. They find Speedy circling the selenium pool and call out to it. Instead of promptly obeying an order, Speedy talks

gibberish. What has happened is that following Donovan's order, Speedy has gone to collect elenium in obedience to the Second Law of Robotics which says that, a robot must obey orders given to it unless the orders are harmful to other human beings. Unfortunately, carbon monoxide, which is harmful to robots, is issuing forth from the Selenium pool. So the Third Law comes into play. According to it, a robot must not endanger itself so long as it is not contrary to the First and Second Laws. The potential set up by the Second Law following Donovan's order, is balanced by the counter-potential set up by the Third Law. This is responsible for Speedy's erratic behaviour.

The impasse is broken when Powell puts himself in mortal danger by going into the roasting heat to Mercury's Sun. The robot that he has been riding comes to save him, but he orders it away. It is of no use because the First Law is so strong that it compels the old robot to go to Powell's help. He moves away from his prospective saviour and calls out to Speedy for help.

He called a last time, desperately: "Speedy! I'm dying, damn you! Where are you? Speedy, I need you".
He was still stumbling backward in a blind effort to get away from the giant robot he didn't want when he felt steel fingers on his arms, and a worried, apologetic voice of metallic timbre in his ears.

"Holy smokes, boss, what are you doing here? And what am I doing - I'm so confused -" "Never mind", murmured Powell weakly. "Get me to the shadow of the cliff - and hurry!"

In all the short stories about robots, Asimov uses the tension between the Three Laws to create a seemingly deadlocked situation, which is resolved at the very last moment by the application of these same Laws.

One of the likely subjects for science fiction writers is World Government. To any rational individual, it will be clear that as long as the nations of the world spend most of their time and energy in quarreling with words and weapons, a concerted offensive against the problems that threaten human survival is not possible. One way of overcoming this problem is to have a World Government which will indentify the problematic areas, and channelise human efforts with a view to overcoming them. Due to the complex geographical, nationalistic and cultural issues at stake, the World Government will have to be a federal

10 Ibid., p.58.
one, with regional and local autonomy safeguarded and with cultural diversity promoted. Perhaps such ideas lead to the formation of the United Nations Organisations was a similar one.

In the short story, The Evitable Conflict, Asimov has used the idea of a World Government with one very important difference; The decisions on all matters are made, not by human beings, but by Machines. It is an ideal world.

And the Machines are nothing but the vastest conglomeration of calculating circuits ever invented. They are still robots within the meaning of the First Law, and so our Earth-wide economy is in accord with the best interests of Man. The population of Earth knows that there will be 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. Whoever owned then .... a man, a group, a nation, or all mankind, they could be utilised only as the Machines diverted. Not because men were forced to but because it was the wisest course and men knew it.11

Now these Machines are not ordinary machines. They are a gigantic extrapolations which no single human being or group of human beings can understand. A team of mathematicians work several years to calculate the parameters of a positronic brain. Using this brain, they make further calculations, to create a still more complicated brain. When this step is repeated ten times, a Machine is the result. So long as the Machines work properly, humanity can rest assured that no problems will arise.

The fine balance achieved by the Machines is evidently disturbed because the Mexican Canal is two months beyond schedule; the Hydroponics plant at Tientsin has been laying off men; the Mercury mines at Almaden are producing than it should. These four anomalies are occurring in the four regions of Earth. The Co-ordinator, Stephen Byerley, thinks that since the members of the Society of Humanity are responsible for the trouble, he will have the Society outlawed. He wants to go further and remove all known and suspected Society members from all responsible positions. At this point, the "Robopsychologist", Susan Calvin, steps in. She tells the Co-ordinator that he cannot do what he is
proposing because there is no problem. Being robots, the Machines follow the First Law. Since they work not for any individual but for all humanity, the First Law is modified slightly: "No Machine may harm humanity; or, through inaction, allow humanity to come to harm". The Machine is so arranging matters that even if the members of the society disobey its orders; the deviation that will be caused by the disobedience is already taken into account. In addition, the Machine by nudging the economic forces in the desired direction, is making sure that members of the society are removed from sensitive positions without suffering any harm. Thus Vrasayana and Villafranca are removed from their positions and placed in other jobs. Consolidated Cinnabar is forced to sell the mercury mines to people who are likely to obey the Machine, and the Directors of World Steel are losing their grip on the industry. The Machine is doing all this quietly because if it were to become known that the Machine was the true master and was manipulating human beings they would become unhappy and their pride would be hurt. This would be contrary to the First Law.

Increasingly, one sees a solid conservative faith in technology in Asimov's works. Robots and computers
are seen as man's protectors and friends. He has single-handedly destroyed the Hollywood myth of robots being metallic monsters out to destroy humanity. He is not alone in believing and advocating that intelligent Machines will be "human-friendly". Let us see what Arthur. C. Clarke, the father of the communications satellite and one of the best-known science fiction writers, has to say on the subject:

The popular idea, fostered by comic strips and the cheaper forms of science fiction, that intelligent Machines must be malevolent entities hostile to man, is so absurd that it is hardly worth wasting energy to refute it. I am almost tempted to argue that only unintelligent Machines can be malevolent.... Those who picture Machines as active enemies are merely projecting their own aggressive instincts, inherited from the jungle, into a world where such things do not exist. The higher the intelligence, the greater the degree of co-operativeness. 12

In The Caves Of Steel, the first robot novel, Asimov creates a New York City thousands of years in the future. It does not resemble the New York City of the present; even the Statue of Liberty and the Empire State Building are conspicuously absent. It is a City of

twenty million humans and only three centuries old, though its predecessor had existed for three thousand years.

The present day cities cannot support huge populations, as is evident from the state of Calcutta or Bombay to even a visitor. The scenario Asimov presents is difficult for us to imaging because it is outside the realm of reality. The future City is based on the concept of efficiency through bigness. There are no kitchens or bathrooms in the apartments of the City because they mean wastage of precious space. Instead, there are community shower rooms, also called "personals" - for obvious reasons and efficient diners. Food, as we know it, is no more available. The population feeds on yeast and hydroponically grown food. The only mode of transport available is the expressway in combination with local ways and the "strips". Each City is a semi-autonomous unit geared to maximum utilisation of scarce resources.

The whole structure is enclosed, and the City is a cave of steel. At the centre is the enormous complex of administrative offices. Towards the outskirts are "the
factories, the hydroponic plants, the yeast-culture vats, the power plants". The land between the Cities is used for agriculture, grazing and mining. Though old fashioned and inefficient compared to modern industry, agriculture and grazing are practised because natural products are in great demand and; beef, pork and grain are luxury items and can be used for export. But the physical work on the farms, ranches and mines is done by crude robots under the supervision of man.

Though the scenario seems far-fetched, it is plausible given the direction society is taking in advanced countries. People who visit Tokyo invariably comment on the compactness of hotel rooms and flats. A flat of one thousand square feet is a luxury only the very well-to-do can afford. Knowing that they can never own a decent house, most Japanese spend all their money travel or buying expensive cars and gadgets.

But man is never content with what he has. He either dreams of a future which will be free of botheration; or nostalgically harks back to a past which appears golden compared to the troubled present. In The Caves Of Steel, we have the Medievalists who feel
strongly that the ills of the city are due to man breaking away from his past. They are particularly against the introduction of robots in the cities because they are seen as job-stealers. Julius Enderby, the Commissioner of Police is a medievalist. He goes to extreme lengths, like weaning spectacles and having "windows" in the office.

He stood up, turned away and walked to the wall behind his desk. He touched an inconspicuous contact switch and a section of the wall grew transparent. Baley blinked at the unexpected insurge of grayish light. The commissioner smiled. "I had this arranged specially last year, Liye. I don't think I've showed it to you before ...... In the old days, al rooms had things like this. They are called "windows". Baley squirmed a bit. There was something indecent about the exposure of the privacy of a room to the outside world ...... With mild shock, Baley realised that it was raining ...... Against his will, Baley had to admit to himself that it was impressive. In his forty-two years he had rarely seen rain, or any of the phenomena of nature, for that matter. He said, "It always seems a waste for all that water to come down on the city. It should restrict itself to the reservoirs".13

The Commissioner has called plain-clothes man, Elijah Baley rating C-5, to his office to appraise him

of a murder. A 'Spacer', Dr. Sarton, has been murdered at Spacetown, which is located just outside New York City. The Spacers are naturally anxious to have the murderer brought to book. They have agreed to let the police department of the City probe the murder on one condition. The department is to use one of their members on the investigating team. The department's man in-charge of the investigation is Elijah Baley, while the spacers have sent R.Daneel Olivaw as their representative. The initial 'R' stands for robot. The Sherlock Holmes and Dr. Watson team of the future is formed, Elijah Baley and R.Daneel Olivaw.

Thousands of years ago, before the development of cities, Earth men had colonised thirty Outer Worlds. They had beaten a hostile environment and developed the colonised planets. In due course, the Outer Worlds proposed; and their inhabitants went and occupied twenty new worlds. Initially, the Outer Worlds were under the domination of Earth. With the passage of time, the tables were turned and Earth the mother planet, was at the mercy of the Outer Worlds. The Spacers, inhabitants of the Outer Worlds, had once sent soldiers in gleaming cruisers into Washington, New York
and Moscow to collect what they claimed was their. Since then, Earthmen knew better than to cross swords with the spacers. The Spacers have come to Earth with a specific project in mind. The government of Earth is in no position to deny the Spacers anything because they can overwhelm Earth anytime they want to.

The murder of Dr. Sarton has to be solved soon, as otherwise the Spacers can use this as an excuse to levy indemnity charges on Earth. Politically, it would be suicide for the Earth government to pay; not paying could result in a humiliating defeat. The only way out for Earth is to find the murderer defeat. The only way out for Earth is to find the murderer and hand him over to the Spacers. That is easier said than done because the Spacers have already conducted their own investigation without any result. They have only one suspect, Julius Enderby - Commissioner of Police, because he was deprived of his blaster as soon as he entered spacetown as per the norms.

Elijah Baley is disturbed that he has to work with a robot. As if this were not enough, he is expected to let Daneel stay in his house. It is well known that
Earth people dislike robots because of the new government policy of replacing men with robots in all jobs. The persons who lose their jobs, or are declassified, have to live on the outskirts of the City, near the factories and yeast plants. They become social outcasts. Baley's father was a physicist in-charge of an atomic plant. Due to an accident which resulted in fatal casualties, Baley Sr. was declassified. Unable to bear the shock, Elijah's mother died. His father too died shortly afterwards, and Baley spent his childhood in the section orphanage with his sister.

Against this background, he meets R. Daneel Olivaw at Spacetown. Though a robot, Daneel is almost human to look at. Only on very close examination, can one tell that he is a robot. Elijah Baley is also deceived, and when Daneel tells him that he is a robot, Baley is furious with himself. When they are returning to Baley's apartment, a disturbing incident occurs at a shoe store. A lady customer does not want to be waited on by the robot clerks and makes a scene. Within minutes, hundreds of people gather and the tension is palpable. The mod wants to destroy the robots. Baley
is apprehensive of the situation and wants to call reinforcements. But Daneel controls the crowd by threatening to shoot the trouble makers with his blaster. The crowd disperses, and the only damage done is to Baley's ego.

In the course of investigation, Baley wants to visit Spacetown. There he makes a complete fool of himself by alleging that Dr. Sarton is alive. He says that what the Commissioner saw was not the body of Dr. Sarton, but a robot. Dr. Sarton is pretending to be R. Daneel Olivaw. He arrives at this wrong conclusion due to haste and a desire to show himself superior to the Spacers. His doubt is set to rest when Daneel reveals his metallic insides. Baley is no further in his investigation than when he had started. It is then that he learns why the Spacers have come to Earth.

Dr. Fastolfe begins by explaining to Baley why the Spacers avoid contact with Earthmen. When his ancestors colonised Outer Worlds, they found themselves on planets which did not have any Terrestrial bacteria and viruses. Their own diseases were conquered by the latest microbiological techniques which they had brought
with them. Gradually a stage was reached when one by one the Outer Worlds became disease free and to keep them that way Earthmen were kept out by rigorous immigration requirements. Due to the sterile environments the Spacers did not develop immune systems in their bodies. In such a situation, even a cold or fever could prove fatal to them.

On the one hand, the Spacer's lives on the Outer Worlds are "too long to risk and too comfortable to upset", while on the other, Earth is surely headed for disaster due to the city culture and the growth in population. Face with the imminent destruction of the human race, the Spacers have thought of a plan to get the Earth people out of the Cities and into space.

"In trying to introduce robots on Earth, we're doing our best to upset the balance of your City economy".
"That's your way of helping?" Baley's lips quivered. "You mean you're creating a growing group of displaced and declassified men on purpose". "Not out of cruelty or callousness, believe me. A group of displaced men .... are what we need to serve as a nucleus for colonisation. Your ancient America was discovered by ships fitted out with men from the prisons ..... The new colonies will be built by humans who have the City background plus the beginnings of a C/Fe (carbon plus iron or human plus robot) culture
"As it stands now, Earth's own structure must go rocketing down in the near future, the Outer Worlds will slowly degenerate and decay in a come — what further future, but the new colonies will be a new and healthy strain, combining the best of both cultures. By their reaction upon the older worlds, including Earth, we ourselves may gain new life".14

Though the plan is good in theory, it is not able to succeed because of the intense opposition on Earth to the introduction of robots. One group of Earthmen who have shown this antagonism is the Medievalists. It appears that, inspite of the noble aim, Dr. Fastolfe's mission will not succeed.

Baley gets expert opinion from a roboticist about how the murder could have been committed. While a human being is capable of murdering another human being, the particular circumstances rule out such a possibility in this case. Firstly, no human can carry a weapon into spacetown because it is taken away from him at the entrance. There is one way by which a blaster can be taken into Spacetown. If a human were to cross over from the City to Spacetown through the open fields, he could evade the security guards at the entrance. But

This is impossible because no human will dare to walk through the open fields because of the fear of open spaces. A robot, on the other hand, can cross the open spaces. A robot, on the other hand, can cross the open fields with a blaster but it cannot kill a human being because of the First Law imprinted in its positronic brain.

In the end, Baley proves that the murderer is none other than Julius Enderby, the Commissioner of Police, who is a staunch Medievalist. He has already expressed himself against the introduction of robots in the Cities. Dr. Sarton, has been consulting Enderby on the C/Fe (human/robot) combination Dr. Fastolfe has explained to Baley. It is not Enderby's intention to kill Dr. Sargon. He has planned to destroy R. Daneel, Spacetown's humanoid robot. Enderby has ordered the departmental robot, R. Sammy. In the excitement, he drops his spectacles at the precise moment that the door is opened. He mistakes the figure to be R. Daneel and blasts Dr. Sarton. The Spacers and Baley make a deal with Enderby whereby they agree to hush up the murder if Enderby agrees to use his influence to manoeuvre the medievalists in the direction of colonisation of outer space.
In *The Naked Sun*, we see the Spacers on one of their own worlds, Solaria. Baley has been invited by the Solaraiian government to investigate the murder of Dr. Delmarre, the only fetal engineer on Solaria. The Earth government wants Baley to observe the situation on Solaria and report about the weakness of the Spacers. The sociologists on Earth, have come to the conclusion that the Galactic situation is unstable. The fifty Outer Worlds are under-populated, robotized, economically and militarily powerful, and the people live long, healthy lives. On the other hand, the Earth people are short-lived, the Cities are over-crowded, and economically in a decline. Given the antagonism between the Spacers and the Earthman, the sociologists predict rebellions against Spacers which will be totally crushed. The vicious cycle of "revolt, suppression, revolt, suppression" will wipe out all human life on Earth within a century. The sociologists do not have any information about the Spacers which can be used to Earth's advantage. No Earthman is allowed to enter any of the Spacer Worlds because of the Spacer's dread of disease. Whatever information the sociologists have is given by the Spacers themselves, and consequently they know only their strong points. Baley's trip will
provide the socialogists with information which they
desperately lack.

Of the fifty Outer Worlds, Aurora is the most
powerful. It has insisted that Baley be in-charge of
the investigation, and that his partner be an Auroran.
Baley's partner will be R. Daneel Olivaw, the robot who
has already worked with him in solving the murder of Dr.
Sarton in *The Caves Of Steel*. The Aurorans have paired
Daneel with Baley because if the Solarians see a human
of the Outer Worlds associating with Baley, it will
raise his status in their eyes. Since Daneel is almost
human, he can successfully carry out the subterfuge.
The ulterior motive of the Aurorans however is to study
Solarian society which is far ahead of them in the
knowledge and application of Robotics.

Solaria has only twenty thousand human beings on
it. For each human being, on an average, it has ten
thousand robots. They are so many and so specialised,
that the Solarians have managed to avoid all physical
contact with other humans. Instead of seeing one
another, they "view" each others trimensional images -
the contact being established by a specific robot. The
obsession with hygiene has become a fetish and humans touch each other only by assignment for the purpose of maintaining a steady population level. When the woman has conceived, the foetus is removed from her womb a month after the conception and tended by fetal engineers. They allow only those foetuses to mature which are perfectly healthy. From that stage on, the infants are cared for only by robots. No one knows who his or her parents are. All the needs of the child are fulfilled by different sets of specialists supervising specialised robots.

In such a society, the only thing that gives people a sense of security is the knowledge that because of the Three laws of Robotics, the robots will never harm them and will always obey them. How could a murder occur when people don't even see each other, leave alone touch one another? With hundreds of robots around at any time, how could the murderer escape? What was the motive for the murder? What weapon was used? These are questions that Baley must find answers to, if he is going to solve the murder. Though the fatal blow has been struck by the victim's wife, Gladia Delmarre, the actual murderer is Dr. Leebig, the robotist. He has
manipulated Gladia as he would manipulate a robot. On his orders, a robot has handed over one of its detachable limbs when Gladia is having a heated argument with her husband with the detachable limb which has killed him. Since Dr. Leebig is the first person to attend the scene of the murder, he removes all clues and carefully and erases all record of the incident from the robot's positronic brain.

Why has Dr. Leebig planned the murder? He and Dr. Delmarre are paranoid about human contact, and is working to eliminate it in his field. While Dr. Delmarre is working towards a future where marriage will not be necessary because of ectogenesis, Dr. Leebig is planning to make spaceships with positronic brains. If he succeeds, then these spaceships can be used to destroy spaceships from other planets, even if the conventional spaceships too. This is far-fetched, we should remember that the horror and misery of the Second World War can be traced back to one man, Hitler. At the other end of the spectrum, one man was responsible for the British leaving India without bloodshed, Mahatma Gandhi. Again, it was he alone who could
quench the fires of hatred by undertaking a fast-to-death as a way of repenting the barbaric cruelty of his fellow-countrymen.

Baley’s report about the weakness of the Spacers is brief. The experts thought that the strength of the Spacers are, their low population, their longevity, and robots. Baley says that these have now become their weaknesses. By giving up human contact, by living in splendid isolation, the Spacers have reduced life to an easy gambol where there are no intellectual challenges. The robots have contributed to the mental stagnation by taking over all the work from the Spacers. Their long lives have made the Spacers complacent and selfish. They shun change. Earthman are at the other extreme. They don't want to leave the Cities, but burrow deeper, thus retreating further and further from the Galaxy. Baley suggests that the way out of the stagnation is a new wave of colonisation of outer space.

Whether it is The Naked Sun or The Caves Of Steel, the most glaring issue is the selfishness of the Spacers who are better off than the Earthmen. They want to exclude their less fortunate fellow humans from the good
life they are living. Taken a step further, this attitude results in selfishness at individual levels, as we have seen in the case of Dr. Leebig. This drawing away from others makes existence sterile. The Solarian's obsession with cleanliness is also a negation of life. They deny the very life processes which make society possible and consequently they are decaying. Though science fiction is 'fun' reading, I wonder whether Asimov isn't criticising the "exclusiveness" of Western society.

It is common knowledge that Europe's population is declining. In America, people don't want to have children because they are "bothersome". With the coming of industrialism, the joint family has given way to the nuclear family. People want to further "streamline" the family by avoiding children. An anthropologist, Margret Mead, says that in future, parenthood would probably be limited to a small number of families, whose principal function would be childrearing. This would leave the rest of the population "free to function - for the first time in history - as individuals". As Alvin Toffler says, future newspapers may well carry advertisements aimed at young married couples:

It sounds humorous, but the tragedy is that society is moving in that direction. From there to the "fetal-engineers" of The Naked Sun is not far away. The images of sterility in T.S. Eliot's The Waste Land are becoming reality! If science fiction is seen as an "inescapable projection of the hopes and fears about the direction in which society (is) moving"; the future will demand greater effort from us just to stay human.