The Message of Science Fiction : Prophetic or Trivial?

by

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JAYANT V. NARLIKAR Born in Kolhapur (1938) Maharashtra, Narlikar received his education at the University Children's School, Banaras Hindu University. Became a Fellow of Kings College, Cambridge, from 1963 to 1972 and obtained his M.A., Ph.D. Degree there. He worked with Professor Fred Hoyle on the steady state theory of the universe, and they propounded the 'conformal theory of gravity'. Hoyle also encouraged Narlikar to write fiction. Narlikar returned to India in 1972 as a professor of theoretical astrophysics at the Tata Institute of Fundamental Research, Mumbai. In 1983 he was elected Associate of the Royal Astronomical Society, London. In 1988 he became the first Director of the Inter-University Centre for Astronomy and Astrophysics established at Pune by the University Grants Commission, where he is working still. In addition to his scientific research, Narlikar has written non-technical books and articles that popularize science in English as well as in Marathi and Hindi. *The Return of Vaman* (1989), his first novel in English, marked a new strain in Indian English writing - science fiction. *The Message from Aristarchus* (1992) is set in the 21st century and has all the qualities of his earlier novel. Sri Narlikar has altogether about 50 publications, mostly in Marathi, like *Vidnyan ani Manavacha Jeeven Sangharsh, Preshit, Antaralatala Bhasmasur, Time Machinechi Kumaya*, etc. He has been a Nehru Fellow, S.S. Bhatnagar Laureate, Rashtrabhusan and Padmabhusan. He has also won Maharashtra State Award, Aryabhata Award (Bihar)and Sansthan Samman (U.P.).

Introduction

I thought of this title for my talk because of an earlier experience when, over three decades ago I had the privilege of attending a public discussion between two intellectuals, on the topic: *The Message of Science Fiction: Prophetic or Profane?* The location was the Beckman Auditorium of the California Institute of Technology, and the participants were the astrophysicist Fred Hoyle and science fiction writer Ray Bradbury.

One point which Ray Bradbury made on that occasion comes back to me now. Bradbury remarked that when he reviewed his own life, which had begun in 1920, he felt that he was living through a realisation of science fiction. Ideas like jet planes, electronic computers, nuclear bombs, space technology, etc. were part of science fiction in his childhood, only to become part of reality at the time he was speaking. With the rapid march of science and technology (S&T), the gap between what is prophesised and what materialises, is rapidly dwindling.

This is apparent more so now than when Bradbury made the statement. We are conscious of the new inputs into our life everyday, be they in the computer field, biotechnology, transport, energy, or what have you. Traditionally, we think of science fiction as futuristic, with ability to anticipate developments in S&T and their impact on society. But is it able to do this job well? Has it proved to be prophetic? Or

has it remained a trivial part of literature with a thin veneer of science covering stories of magic and horror?

This is the topic I wish to touch upon in my lecture today.

The prophetic element in sci-fi

Yes, sci-fi can claim to have been prophetic. Jules Verne in the nineteenth century wrote some far seeing science fiction. His description of manned flight to the moon turned out to contain many similarities with the Apollo 11 Mission to the Moon a hundred years later. H.G. Wells wrote about the Martian invasion on the Earth. Whether that will ever happen, he made the very pertinent point of immunity or lack thereof for extra-terrestrials against the microorganisms here on the Earth.

Fred Hoyle wanted in the 1950s to write a research paper on gigantic clouds of gas in space containing molecules. His scientific colleagues could not believe that anything more complex than atomic hydrogen could exist in the interstellar space. And so his paper was turned down by the respected astronomy journals of the time. Nevertheless, he put the idea in a science fiction novel, called *The Black Cloud*, which hit the best-seller list. The cloud was a molecular cloud, *which possessed intelligence.*

It remains to be seen if the intelligence part of the story turns out to be correct; however, the existence of giant molecular clouds is an accepted fact today. In fact it became so a decade after Hoyle first proposed the idea of molecular clouds, thanks to the technology of millimeter wave antennas. Antennas tuned to such wavelengths can pick up the tiny signals coming from the rotational and vibrational changes taking place in cosmic molecules. A typical cloud can be several light years across. There is a giant molecular cloud several hundred light years across in the direction of Orion. Called the Orion Nebula, it has new stars being born. Such clouds are now known to contain not just simple inorganic molecules like water, cyanogens, carbon monoxide, etc. but

also complex organic molecules, including chains of polymers. Molecules known to be part of the DNA-based structure of life here on the Earth, are also seen to exist, thus raising the tantalizing query: if the building blocks of life as we know it exist, can life itself exist elsewhere in the universe?

In the mid-1970s I wrote a sci-fi story *Dhoomaketu*, in which a comet discovered by an Indian amateur astronomer is feared to be on a head on clash with the Earth. The catastrophe is averted by the scientists on the Earth working together under the United Nations umbrella, by sending a nuclear device close to the approaching comet and exploding it in such a way as to nudge it into a slightly disturbed trajectory which misses the Earth.

In 1944, when Comet Shoemaker Levy impacted Jupiter, the question of comets striking the Earth assumed a tangible form. The chance of a comet hitting Jupiter is considerably higher, the probability of impact being, say, once in a millennium. Jupiter is specially vulnerable because its huge mass attracts the comets. The chance of it impacting the Earth with its much smaller mass, may be less than one in a million, but is *non-zero.* It is now a serious concern as to whether we on Earth are indeed safe under impacts from not only comets, but also other small bodies of the solar system, mainly the asteroids. An asteroid is one amongst thousands, typically moving in an orbit lying between Mars and Jupiter. Occasionally one such body from the asteroidal belt strays towards the Earth. What should one do if the body threatens to hit the Earth?

The solution to this catastrophe being suggested today is the same as described in my sci-fi story...! Indeed an operation called *Skywatch* is now underway to chart out the future trajectories of such solar system objects with a view to identifying those who might impact the Earth later. Forewarned is forearmed!

Changing gears somewhat, biology has provided considerable fodder to sci-fi writers, and some of the

speculations of earlier years are coming out to be true. Some examples are cloning, genetic engineering, the human genome project, etc. Whether, the sci-fi recipes for prolonging the life-span and taking us back to Methuselah, or to the long lived characters in Hindu mythology will some day see the light of the day remains to be seen.

Today's sci-fi prophesies

What can science fiction say today about the future? Certainly, if one takes for granted that any writer of today is bound to be influenced by the technology forecasts which are coming in abundance, then he or she has a menu of considerable diversity. To name a few I list the following.

Space Colonies: Would man leave the terrestrial habitat and look for colonies in space during the 21st century? Already attempts at docking in space by the Russians and Americans, have yielded successful results and experiments are also on on studying the survival and welfare of humans living in space for extended periods. Living in micro-gravity, in a confined space with very few companions will necessarily subject the human health and psyche to hitherto unexperienced strains. But if the experiments succeed and one can build large structures in modular fashion, there are advantages to be gained by sustained presence in space. Purity of alloys, new medicines, and other industrial uses of micro-gravity environment, beckon man to space and one can write good sci-fi warning against dangers and pitfalls of new technology or possible long-term damages to human psyche.

Nuclear holocaust: The recent acquisition of nuclear arms capability by India and Pakistan has revived the fears (which were allayed with the end of the cold war) of a limited conflict escalating into a worldwide destruction by nuclear weapons. Sci-fi literature can project to the future with likely scenarios and generate awareness of this very real danger. Even if nations act responsibly, their nuclear secrets may not be in leak-proof environment. There are sufficient terrorist

organisations, many with suicidal religious fanaticism which could lead to the destruction of the entire living species on this planet.

Pollution: Whereas a nuclear war could kill all the species on the Earth within minutes, and is therefore perceived as a real danger, pollution kills or damages health slowly, and tends to be ignored until it is too late. Good sci-fi today can look three to four decades ahead and point to real threats to environment and hence to life, from indiscriminate use of technology.

Excessive automation: With computerisation taking over day-to-day business, the humans will find themselves redundant, and this may require proper readjustment of life in the future society. Sci-fi can tackle real down to Earth problems of the future and again increase awareness of the dangers along the way where we are heading.

While this list may read like a compendium of gloom and doom, my purpose here in highlighting these dangers of the future is to underscore the possibly constructive social role sci-fi can play. The tendency is generally to glamourize S&T and create the misleading impression that here we are dealing with the modern version of Alladin's magic lamp. The magic lamp brings benefits along with dangers of misuse of science.

Nevertheless, there are positive and exciting aspects of S&T which have traditionally sustained science fiction. Exploration of Mars, leaps of information technology, new modes of transport, technological aids to surgery, cures of diseases considered incurable hitherto, S&T harnessed to provide more equitable and prosperous lifestyles, etc., can certainly provide topics for stories, novels and plays. One hopes that these positive aspects will draw more of the reading public into the S&T-friendly fold.

Trivial sci-fi

Having discussed the prophetic capabilities of Sci-fi, let me now consider the other side of the coin.

It is generally noticed that the genre of science fiction has not really been assimilated into the literary fold. Certainly in Indian languages, there is so little of it that it hardly makes an impact on their literatures. Bengali and Marathi are languages which can perhaps claim to have developed this form of literature to above threshold level. Even in Marathi, the annual literary conferences hardly touch upon science fiction. This is unfortunate, since as discussed above, in a rapidly changing social environment influenced by S&T, science fiction can be a powerful link between literature and society.

This circumstance, though deplorable, is hardly surprising. Bulk of the fault lies with what which may be summarised as 'pseudo science presented through inferior fiction'. I can very easily summarise the characteristic of this kind of literature:

1. *Jargon*: By using high-tech sounding jargon the impression is created that examples of frontier science and/or technology are being depicted, when in fact unacceptable liberties are being taken with established scientific laws.
2. *Themes*: The themes are the same hackneyed ones like in the westerns or romantic novelettes. The distinguishing impact of science is missing, except through a thin veneer of special effects. An excellent example of this is the movie *Star Wars* and its sequels.
3. *Horror and magic*: The old horror stories or fairy tales often appear in the garb of science fiction, thus replacing the weird effects or the magic wand by strange technology. This does more disservice to S&T than ignoring S&T altogether!
4. *Mediocre literary merit*: The sci-fi story may have an excellent scientific base, and a good plot, but fails on for poor characterisation and other literary criteria. In some cases the presentation may be drab like a technical paper which would naturally put off the average reader.

It is this aspect of science fiction that conveys the impression that it is trivial rather than profound. Thus although there are masterpieces from Jules Verne, H.G. Wells, Arthur C. Clarke, Ray Bradbury, Fred Hoyle and Isaac Asimov, the general impression is one of a superficial form of literature glamourized by special effects in movies and television.

Personal experience

I wish to end this talk with a few comments of personal nature. I have been writing sci-fi in my spare time. What factors prompted me to venture on this track?

The primary inspiration came from my research guide Fred Hoyle, who besides being an internationally distinguished scientist, also wrote excellent science fiction. His example prompted me to do the same in my mother tongue Marathi, and in 1970, I made a modest beginning by entering a sci-fi story writing contest organised by the *Marathi Vidnyan Parishad*, Mumbai. I submitted my story under the pseudonym Narayan Vinayak Jagtap, in somebody else's handwriting, lest the organisers be familiar with mine. The story got the first prize and I revealed my identity. Smt.Durga Bhagavat, the President of the Marathi Literary Congress in 1975, paid compliments to this modest effort. It was then that Mr. Mukundrao Kirloskar, Editor of the venerable Marathi monthly *Kirloskar*, invited me to write stories for the magazine. This encouragement went a long way towards establishing my science fiction writing.

Why do I write science fiction? I do either to convey some exciting scientific finding, or to indulge in scientific speculation for the future, or to look for a socially relevant theme where science or the scientific temper plays a major role. I hope that some of my writing do reflect how S&T are an indispensable element of our existence today.

How have these efforts been received? Judging by the readers' mail, I find that they have taken these stories and

novels seriously. Not only have they enjoyed them, but being science-based, they expect them to be logic-based. So on several occasions the readers ask why the course of events or the behaviour of a character followed a certain course and not any other! So far as critics are concerned, the responses have differed considerably. The more conservative ones find the work wanting by norms set by the traditional form of literature. The more progressive ones are willing to 'give it a chance' as a new form of literature. But on the whole, the literary world exhibits a certain discomfort with understanding a scientific idea and so likes to maintain a distance from such efforts.

I feel that this gap between two cultures needs to be bridged with more dialogues between scientists and science writers on the one hand and the literati on the other. Better science fiction will emerge if writers of traditional fiction turn to it, having surmounted their awe of science and technology as edifices to be admired from a distance but to be left to the exper6ts. S&T are no longer confined to the specialist territories: they have become an integral part of our lives.

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