
UNIT 3 SCIENCE AND TECHNOLOGY REPORTING

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3.0 OBJECTIVES

After going through this unit you will be able to:

- describe the differences between general reporting and science reporting,
- list the sources from which news stories on science and technology can be obtained,
- identify and collect appropriate information to write science and technology news and features,
- analyse the sociological impact of the various applications of science and technology.

3.1 INTRODUCTION

The laws of Nature are revealed to human beings through science. Technology involves the application of science to invent, innovate and improvise newer machines, products and services. Look around yourself. You will notice the changes that are taking place because of science and technology. Even as a general reporter, you cannot miss the impact of science and technology on human society and the environment. In this unit, we shall discuss the specialised skills of reporting events, happenings and innovations in the field of science and technology. If you keep your scientific temper keyed up and your journalistic curiosity alert, you will see much to tell your readers. You will see how simple inventions effect life styles, or how complex technologies touch remote and simple human beings.

Activity 1

Make it a point to watch a science programme on the UGC countrywide classroom, or tune in to your local radio channel for a science report, or read any science article in a newspaper or magazine. Then, answer the following questions by putting a tick mark against the most suitable alternative. Your answer must be based on your observations about the science programme/report that you watched, or listened to, or read.

- 1) You find that in terms of clarity, the report is:
 - a) very clear
 - b) clear
 - c) somewhat clear
 - d) unclear
- 2) You find that the topic has received
 - a) extensive in-depth treatment
 - b) fair and wholesome treatment
 - c) treatment that barely outlines all the issues involved
 - d) less than deserved, treatment
- 3) On an average, you were introduced to
 - a) one new word
 - b) two new words
 - c) less than five new words
 - d) more than five new words
- 4) Assuming that the topic is presented for a general audience, you would say that the measure of information it carries is
 - a) just right
 - b) too much information
 - c) too less information
 - d) no idea

3.2 BRUSHING UP KNOWLEDGE OF SCIENCE

Teaching science is beyond the scope of this unit. But all those who have learnt science at school can become science reporters if they brush up their knowledge of the subject and go on adding to it.

3.2.1 Recapitulate School and College Science Studies



Recapitulation here means going over again, or revising the main points — laws, theories, principles, etc. All science reporters must have a basic knowledge of the elementary principles of science. A knowledge of scientific vocabulary is necessary. That does not mean only science graduates can report happenings in science. In a way, such education helps, but science education at school is broad-based and can be built upon. All students are given the basics of science and mathematics at school. Is it possible to go over what we learnt in our early years at school? Yes, memory has it all stored for re-call. If you have the school books put away, bring them out, dust them and re-read them. If you do not have the books, borrow the science text-books from the next-door child who is studying them. Read those books with an open and enthusiastic mind. A whole world of scientific thought will come rushing back to you. If you are a science graduate, so much the better. A Ph.D. in a science does not necessarily make one a good science reporter.

With your keyed-up scientific temper, observe the happenings in science and technology.

We live in the age of science. The age of science is the age of reason. It is by reasoning that human beings have unlocked the secrets of nature. Again, it is by reasoning that human beings have applied the laws of nature in developing technology.

Do you try and reason it out when you see something strange? Do you investigate it? If you do, you are a person with a scientific temper. If someone says ‘rainfall has diminished because of the sinful activities of humans’, will you accept it blindly? If you do, you are not reasoning. But if you reason it out, you will find the scientific truth unfolding to you. Here, the meaning of the word ‘sinful’ is involved. Sinful activities could include deforestation, water and air pollution, heating up of the atmosphere by industrial activities. Yes, these activities can lead to climatic change, including less rainfall in some places. This is how scientific temper works. Now, apply it to all the happenings around you.

3.2.2 Tips on Science Communication Awareness

When the ancient Greek philosopher Archimedes discovered the principle of buoyancy while relaxing in a bath tub, what did he do? He shouted ‘Eureka!’ and ran into the street, without even dressing up. Why? It was because of the overwhelming desire to share his new knowledge.

Communication is sharing of information. You, as a science reporter, must have the curiosity to know the latest happenings in the field you are covering. The moment you have learnt enough about a particular happening, go to your desk to write it as a report for publication. Your work involves three stages:

- 1) search and research,
- 2) understanding it completely, and
- 3) writing it in a simple style to make your readers know what you have learnt.

The best way to develop science communication awareness is by reading good popular science books and journals. Also, watch popular science programmes on Indian and foreign television channels. Ask yourself why you liked a particular report. You will realise that the particular report appealed to you not necessarily because it brought out some startling facts, but because of its clarity of style so that the lay person can understand it.

3.2.3 Checking Facts through Reference

There is no scope for factual errors, half-truths, bluff, exaggeration and hoax in science. So also in science reporting. Scientific truths and technological facts are verifiable. In the modern world, reference books and computerised knowledge banks are there to verify your findings. When you hear about a discovery by an individual or an institution and if it has an element of half-truth or exaggeration in it, you will smell a rat if you have a scientific bent of mind, or a scientific temper. Yet, in a tired moment of your hurried life, this may not happen. Therefore it is always safe to check the facts with the source of the news or from other sources. Documented reference books and journals are available in all the major libraries and scientific institutions. Go through the alphabetically-arranged index and reach

the information you are looking for. The very exercise will reveal new facts to you and widen your mental horizon. Thus, while you are working on one story, your mind is working itself to show the way to another story. A reporter who verifies facts as a matter of habit will earn the reputation of being credible.

3.2.4 Verification through Interviewing Those Who Know

Who can verify scientific facts and principles better than scientists themselves? Who can give a more credible opinion about technological developments and projects than technologists themselves? Therefore, always keep a list of scientists and technologists of merit, living in the city or town where you are functioning as a reporter. Make sure your list contains both residential and office addresses and telephone numbers. Nothing readymade will be available to you. Look up the telephone directory, Who's Who, etc. Then go ahead and, cultivate an acquaintance with these scientists and technologists.

When you visit a scientific institution, go up to the PR or Information Officer and get the list of the scientists. Ask one scientist to put you on to another. This way, you would have a fund of experts to look up to, when you need to check facts or obtain an opinion. Make sure that you approach the scientists whose area of study and research is appropriate to the theme of your story. Take up an appointment. Be punctual. Have the questions ready with you. Note down your questions and the interviewee's answers carefully. Ask supplementary questions when needed. Such interviews can be woven into your main story or written as box items. Make sure you get a photograph of the scientist/expert interviewed.

3.2.5 Personal Glossary of Common Science-Technology Terms and Phrases

A science reporter, like all reporters is hard-pressed for time. You have deadlines to keep. Every writer needs a good dictionary on his writing desk. As a science reporter, you will often be faced with technical terms. Scientists and technologists, and indeed all specialists, are fond of, or used to, speaking in their own technical language, or scientific jargon. While taking down notes, you may not be able to translate these into common language. You have to do so while writing. Therefore, prepare and keep your own glossary of commonly used technical terms. Arrange the words and phrases in alphabetical order. You can prepare such a reference material by working in the reference section of a science-technology library, or a good general library. Keep updating as you progress in your reporting career. The exact commonly used words and meanings of certain science and technology terms may elude your memory in moments of stress. If you have a glossary of technical terms handy, your report will make smooth reading. Newspaper offices do have reference libraries. But do not depend entirely on them. They have too many customers. And avoid making a spectacle of yourself running between the news reporters' room and the reference library several times while doing a story. If you do, you may miss the deadline, or your colleagues may laugh at you.

Check Your Progress 1

Note: a) Write short answers of three sentences each for the following questions.

b) Compare your answers with those given at the end of this unit.

- 1) State the three stages that a science reporter must follow step by step, when preparing a report or news item.

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2) Mention three ways in which a science reporter can do justice to any write up.

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3) Where would you specifically look for books, journals, etc., when preparing a background article on, say, "noise pollution levels in 1995 in your town/city"?

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Activity 2

When you read an article or report in your daily paper or in some book, you must be finding one or two words that are difficult to understand. What do you do then? Do you:

- refer to a dictionary or reference book?
- try to catch the meaning by just reading the sentences over again?
- ask someone about the meaning?
- simply forget the word(s) and read ahead?

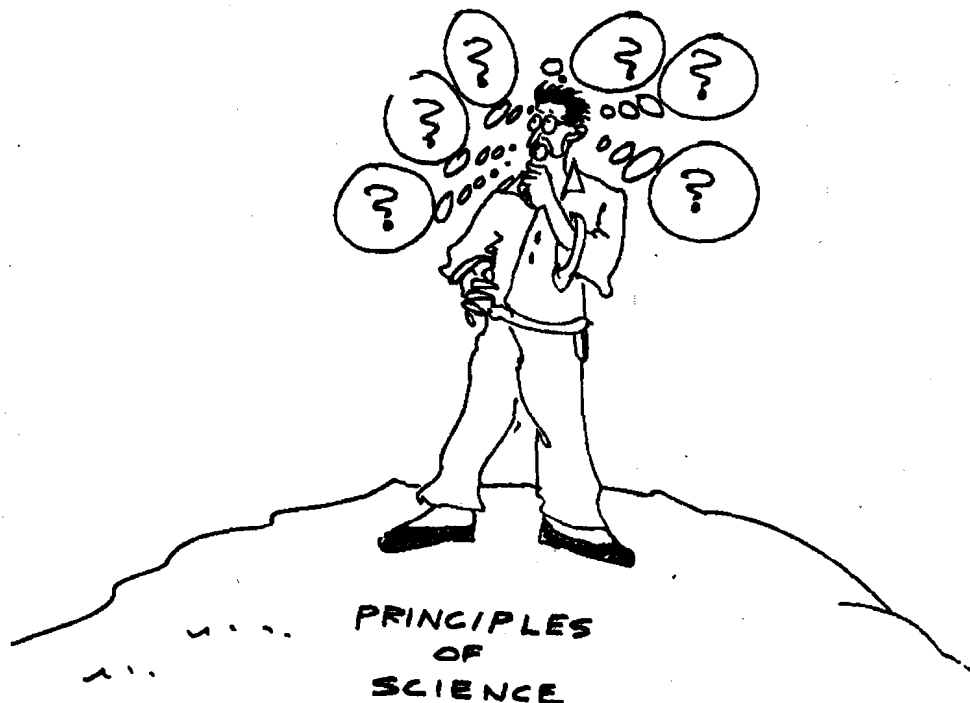
3.3 SOURCING OF SCIENCE AND TECHNOLOGY NEWS

Do not wait for news to drop into your lap. Go and look for it. If you wait for a news story, by the time it reaches you, it would have reached a whole lot of other people. So, be alert. Be on the look out. You have a beat. Do your regular checking. Develop friendly relations with the information officers of the institutions. In the town or city where you work as a science reporter there are bound to be scientific institutions which you may use as your source. Do not think institutions which bear "science" or "technology" in their names are the only sources of science-technology news. The government departments dealing with public health, water supply, electricity, telecommunications, construction, transportation, etc., have all applied science in multiple ways. Banks and government offices may go in for computerisation. Industries may go in for new technologies. The real estate business may opt for taller and taller buildings. All such activities are sources of technology news. And, there will be the ever-present problem of environment degradation and, of course, efforts to solve it. All these will give you a constant supply of news stories which your readers will appreciate.

Let us consider a hypothetical story. You read in the local paper the headline, "Rampur to have a 18-storey building — tallest in the district".

This is a general report coming from a construction company, or from the town planners. A whole lot of people in Rampur will feel happy that their town has started growing skywards. People in Sitapur, a neighbouring town of Rampur, will wonder why their town can not have a 20-story building.

As a science-technology reporter, you will have to approach the story from other angles. You can go to the town-planning department and ask whether such a tall building is appropriate in Rampur. Will it not set the trend for other property developers? Will Rampur not end up as an urban concrete jungle? What about water supply, electricity, etc.? An endless stream of questions will come to you.



Then, you can seek out the architect of the building and talk to him. You can meet the building contractor and ask him about his experience in building tall structures. What about fire safety? What about the foundation? What about structural stress analysis? If you write your findings in simple language, the story will lead to a debate. The people of Rampur will begin to see beyond status symbol traps. You may be instrumental in creating a scientific temper among the general public.

Press conferences, press handouts and policy announcements by ministers are alone not sources of news for a science reporter. Events and phenomena in any area of the subject throw up news stories. For instance, epidemics, soil salinity, good and bad water management, population densities, non conventional energy sources, and observation of fauna and flora of the region are all sources of news. A science reporter will not only recognise the existence of problems, but also their causes and effects. By talking to the right people, you may come out with the right answers. Think while you observe. Observe while you think. Your source may not be far to seek.

Check Your Progress 2

Note: a) Answer each question in two or three sentences.

b) Compare your answers with those given at the end of this unit.

- 1) Explain the qualities which a science-technology reporter must have in order to have a nose for news.

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- 2) Briefly outline the possible sources you would approach and quote in your article on the following two topics (i) Increasing incidence of "heart attacks" among young Indian males. (ii) Introduction of latest, high-speed automobiles in the Indian market?

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3) Would you mention or avoid quoting press handouts from the concerned government ministries, in any of your articles?

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3.4 INSTITUTIONS OF RESEARCH AND DEVELOPMENT (R & D) IN INDIA

As a reporter covering science and technology in India, you must have a comprehensive knowledge of the institutions of research and development in the country. India has the world's third largest reservoir of technical and scientific manpower. India has also built up one of the world's largest network of R & D facilities. In the present liberalised industrial and economic climate, these laboratories and research stations will set new goals and work towards achieving them. They will be a major source of science-technology news.

The Department of Science and Technology (DST) of the Government of India looks after the policy planning and administrative details of the largest chain of national laboratories. These come under the Council of Scientific and Industrial Research (CSIR). There are about 40 major research laboratories under the CSIR, besides a network of multi-disciplinary extension centres. Among the premier national laboratories under the CSIR, are the National Physical Laboratory, New Delhi; National Chemical Laboratory, Pune; Central Drug Research Institute, Lucknow; Central Glass Research Institute, Dhanbad; Indian Institute of Oceanography, Goa; Electrochemical Laboratory, Karaikudi; etc. The list, and the range of disciplines handled can be mind-boggling. The CSIR headquarters at Rafi Marg, New Delhi-110 001, will be only too glad to furnish a science reporter with all the information one may enquire about, in a professional capacity.

Atomic Energy and Space are two of the areas where India can boast of frontier research and development. The atomic power stations and rocket development and satellite launching events, capture the headlines. The Bhabha Atomic Research Centre and the Tata Institute of Fundamental Research, both in Bombay, and research facilities linked with these and scattered over the country, have been doing multi-disciplinary, high technology R & D which have success stories to be written about. The Indian Space Research Organisation (ISRO) has done outstanding R & D work at its various facilities, which speak volumes for the calibre of its scientists. Both the work and the scientists are news.

Technical departments under other central ministries too have their research programmes under specialised agencies. Department of Agriculture does a wide range of crop research through the laboratories and research stations of the Indian Council of Agricultural Research (ICAR). The Union Ministry of Health and Family Welfare has under it, the Indian Council of Medical Research, which runs a major chain of research laboratories. Then, there is the Research Development Service Organisation under the Railway Board. Every department — communication, irrigation, power, surface transport, mining coal, petroleum, environment, etc. — has an R & D wing to run its laboratories.

All of us know that every university has research programmes going on in their post-graduate departments. These may be in pure science, such as Physics, Chemistry, Geology and Biology, or in applied science such as Medicine, Agriculture, Engineering, etc. The Indian Institutes of Technology (IITs) do considerable frontier research. The Indian Institute of Science at Bangalore, is rated among the world's top basic science research organisations.

All that when pooled, becomes an ocean of science and technology news. The attempt in this unit is only to give a fleeting vision of the mega picture of the potential for science and technology reporting and writing. See the vastness of the opportunities awaiting you. If you have your scientific temper heightened, science reporting can be one of the most exciting fields of mass communication. After all, we live in the age of science.

Check Your Progress 3

Note: a) Answer the following questions in one or two sentences each.

b) Compare your answers with those given at the end of this unit.

- 1) Name any two laboratories that belong to the 40-odd member chain headed by the CSIR.

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- 2) Name a research organisation that is conducting research in basic science.

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- 3) Name the Ministry which oversees the working of the Indian Council of Medical Research (ICMR).

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- 4) Who prepares the science-technology policy for the country?

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- 5) Why does a science reporter have to know about R & D organizations?

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3.5 PERSONS WHO MATTER IN SCIENCE AND TECHNOLOGY

Why must you have a cursory knowledge of outstanding scientists and technologists? Because leading names make leading headlines. Here, we are talking about living men and women of science, particularly Indian. You may write about their latest achievements. In such reports you must make a reference to their earlier achievements. A leading scientist may visit the town where you are working. Your editor may ask you to interview the person. Or, you may be covering a lecture, which (s)he delivers at a local function — a memorial lecture, a foundation laying ceremony, or whatever else. If you are familiar with the highlights of that person's life, your interview or news report will be that much more interesting and evoke the reader's interest.

Biographical knowledge of three categories of scientists and technologists must be in your memory or in your reference recall system:

- 1) Outstanding men of science of the past who made path-breaking, or epoch-making inventions. Their work is globally recognised. Reference to them can be found in an encyclopaedia of science, or even in general knowledge books. In day to day reporting, such names may not and cannot figure. But the science reporter's knowledge should extend beyond the usual current affairs.
- 2) India's outstanding scientists and technologists of the past — say, since the renaissance. Here will figure names like C.V. Raman, Jagadish Chandra Bose, M.S. Krishnan, K.S. Krishnan, Homi Bhabha, Meghnad Saha, S.S. Bhatnagar, Vikram Sarabhai, etc. They have tremendous significance because their contributions led to

India's present-day achievements in science and technology. Their connections and interactions with India's first prime minister, Pandit Jawaharlal Nehru, enabled the latter to lay the foundations of independent India's science-technology progress. If India is in a position to import, adapt and cope with the very latest technologies, it is because of the institution building efforts of the Nehru-Bhabha-Bhatnagar team.

- 3) India has scores of living world-class scientists and technologists. They are to be found in every discipline and sphere of science and technology. It is beyond the scope of this unit to list them. Look up the Who's Who, Year Books and General Knowledge Books, etc.

Check Your Progress 4

- Note:** a) Answer the following questions in about five sentences each.
b) Compare your answers with those given at the end of this unit.

- 1) You are to interview a Nobel Laureate in the field of science. List the questions you would ask the person in her or his area of specialization: say, the contribution to the discovery of a protective mechanism in plants.

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- 2) "Video Games may cause epileptic fits", is a news flash that your newspaper receives. You are immediately asked to write an article on the topic based on an-interview that you are to conduct with the research scientist. Write down the questions you would definitely seek answers to, from the scientist.

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- 3) A most "Ordinary" citizen has invented a 'clean-burn engine' for use in vehicles. What questions would you prepare to ask in an interview to popularise the new technology?

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3.6 SCIENCE-TECHNOLOGY INDUCED DEVELOPMENT AND ENVIRONMENT

In modern times, much is said and written about the human environment, both physical and social. The print and electronic media put out almost a daily dose of news and features about the environment. Many people wave these away as being a fashion or a fad. For others, the word "environment" is almost like a **mantra**. You, as a science reporter, must be cautious not to fall into such traps. That means, you must have a deeper understanding of the environment. The deeper your understanding of the environment, the higher would be your scientific temper.

How often do you think about the environment? How often do you wonder about your physical surroundings? We live in an environment which is as complex as life itself. Delicate, too! Look from any angle of human development, and the fast changing environmental condition will become evident to you.

One basic principle of mass communication is that you should not clutter up your news reports with too many facts. Also, you must not talk or write in complex terms. That way, people with different levels of understanding will not be able to grasp your meaning. Now, let us see the impact of development on the environment.

Let environment awareness begin at home. Suppose you are living in a small house in one of the suburbs of a city. Suddenly, you realise that the density of population has increased in the area. Real estate values are shooting up. As a result, tall buildings are coming up all around. Now, observe your home environment. Very little sunlight enters your house. The cross flow of breeze, which you used to enjoy, is no more there. There is the stench of garbage in the air. Your breathing becomes heavier as if you are suffocating. More illness in the family. The water supply comes only for an hour in the morning and an hour in the evening. You find the noise in the neighbourhood oppressive. As self comes before charity, you tone up your music system. Suddenly, the electricity goes. You open your bedroom window to get some fresh air. All you get is a rush of stench. The tree from which you used to hear the chirping of birds is no more there. The mouldy back-side of a tall building comes bang in your line of vision. You run out of the house. The roads and lanes are littered with cars, people and garbage.

Now think about all the technology inputs in your home and neighbourhood. You cannot deny that the neighbourhood has developed by "leaps and bounds". Then, why this environmental degradation? Think. The house, that was small and comfortable in the beginning, faces a decay in the home environment due to the pressure of changes in the neighbourhood. And the boom in construction and the higher density of population have caused the decline in the environmental quality of the suburb itself. Then, you can see the cause and effect principle in the urban growth and decline, as well as in the rural underdevelopment and in the fall in the quality of life. The chain goes on: rural underdevelopment population pressure—migration of people to urban areas—growth of slums in towns and cities—urban environmental decline due to development and under-development — urban pressures on rural areas — further fall in rural life quality — and so on.....

Similarly, you will see the rampant tree-felling for fuel and timber, and for agriculture, which leads to deforestation, top soil erosion, floods, reduced rainfall, desertification, etc. If you build big dams for irrigation and energy, fertile land which is the much-needed input for development, is submerged, people are displaced, and the cause and effect chain goes surging forth. Similarly, you can see the industrialisation and pollution chain. And, the lack of industrialisation and poverty syndrome will present another startling picture.

All that calls for balanced development and caution about leaping in any one direction. The science-technology correspondents, in concert with economic and political reporters, can play a significant role in development journalism.

As a young reporter you may not cover big conventions and conferences, though your turn will come. Even for the beginner, there will always be lots of stories to cover. One story will lead to another. The questions always will be: Do you have a keen scientific temper? Are you alert?

Activity 3

You must visit the head of Department or a PRO of an institution in any one of the following places:

- a science department in a university
- a research institution in the areas of science and technology
- an industry with an 'R and D' wing.

Space is given here for you to note down the place, date and time of appointment with the person you have contacted.

Date & Day..... Name of Person
 Time Address of the Institution

At the outset, specify that you are looking for information on the area(s) of work and activities of the institution. Note down your findings in this table.

Nature of Experiment	Result(s) of Observations	Pilot Test Study: Conducted/Not conducted	Application(s) of successful Result(s)	Future challenges to be undertaken
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3.7 IMPACT OF SCIENCE AND TECHNOLOGY ON SOCIAL ATTITUDES

The age of science is the age of terrific change. Technology, as applied science, has infused rapid movement in every conceivable human activity. Whether it is transportation or communication, construction or manufacture, exploitation of natural resources or polluting the environment, speed is the main phenomenon. Speed in production and consumption has come to be taken as the criterion of progress. This has led to competitiveness in acquisition of goods and services. Individuals, societies and nations are caught up in the acquisitive attitude which manifests itself in norms and policies. The result is social distortions, intra-group competition and conflicts.

As a science reporter, you are not just a collector of spot information. That, in any case you have to do as a daily routine. But, while doing that, your social perceptions too will get sharpened. You will observe the holistic picture of the pros and cons of heightened, technology-infused change on society. Reports of such developments make societies take stock of themselves. Such reports help policy makers take corrective measures.

A forest officer begins his learning by studying individual trees and plants, then he observes them in groups, or inter-related clusters. Eventually he gains the complex knowledge of the fauna, flora and ecology of a forest. Similarly, as a science-technology reporter venturing into studying the electronics industry, you may start with entertainment electronics. Then, you will learn about professional electronics, then, information technology. By then, you would have had glimpses of computerisation and automation. By the time you begin to have a complete view of the electronics industry, the whole technology would have undergone rapid changes. You must keep pace with technology updates.

Just think about the social and attitudinal changes brought about by satellite communication. Television has gone global. Print technology is changing by leaps and bounds. News travels as fast as light. Even the distance education method by which you have undertaken to study this P.G. Diploma Course is a product of the progress in communication technology. The so-called global village is no more a dream. It is a fast materialising reality.

Having a global view is necessary. But, good reporting is not done from the global viewpoint. See the happenings at local, regional, national and international levels. Learn to observe specifically and sectorally. Always keep the reader in mind. While reporting a specific development in science-technology, if you can give the social implication of its application within a time frame, the reader will sit up. As it is said, 'think globally, act locally'.

3.8 LANGUAGE IN SCIENCE-TECHNOLOGY REPORTING FOR POPULAR APPEAL

Journalistic writing must be a precise form of communication. Science reporting calls for even greater precision. Science deals with the laws of nature. Ideas and images in science communication should flow in logical progression. The written language must be like a precision instrument if it is to register the meanings in the minds of those in a hurry.

The skill of good writing improves with usage. Writing and rewriting are machines which sharpen your language. But you as a reporter will have deadlines to keep. There may not be time for re-writing. Therefore, your writing should be patterned after recognised news writing structures in a daily newspaper. Easily understandable news writing is more than simplicity in the use of words, defining difficult and uncommon ideas and including background material. All these are required and ought to be used appropriately. But, all important news explanation and background packaging may fall flat before the reader. Why this, after all your enthusiastic news collection and packaging efforts? What more does the reader expect from you? You must ask yourself these searching questions when you are preparing a report. The answer? Good science technology reporting needs language that communicates clearly.

Here comes the matter of grammar and usage. Don't be intimidated by the dictates of stiff necked grammarians, which were driven home to you by your language teachers. Give them due respect but go with the contemporary times, and where you are functioning. You have to follow the grammatical practices that make your writing orderly for others to follow. Grammatical practices bestow continuity and universality to a language. These are the very elements of language used in mass communication. The discipline and standards must be followed in any language. Otherwise, a language becomes anarchic and bursts into minor dialects. On the other hand, if the straight jacket approach for grammarians is blindly followed over a period of time, a language gets ossified. That is the death of a language.

If the English language has come to be virtually accepted as the global language of the science-technology era, it is because of three reasons:

- 1) It has had a global spread.
- 2) Since Newton's time, major developments in science and technology have taken place in the English-speaking world. Certainly there have been developments in areas speaking other languages. Nonetheless, there is a chance that the people may be acquainted with the English language and they may have published their discoveries and inventions in English.
- 3) The English language is a changing language. It keeps in tune with the changing times. While keeping the basic standards of grammar, it is amenable to improvisations.

The English language is today considered as the window to the science-technology information of the world. Even the non-English science-technology intensive areas of Europe, the Russian Commonwealth of Independent States and Japan, are introducing English language studies in a big way. Therefore, no matter in which language you propose to write as a science-technology reporter, a keen knowledge of the English language is also a must for you.

3.8.1 Words, Sentences and Readability

Words denote images. Nouns evoke images of objects, subjects, actions, etc. Verbs work the Nouns. All other forms of words are accessories to the chains of words, which we call sentences. There are tested patterns of constructing newspaper stories. The opening sentence must say the most important point of the news. The first sentence, on its own, or the first two or three sentences should give the gist of the story. The paragraphs must be small. Fifty-to-sixty word paragraphs are considered to be ideal in news writing. Remember, the story must move on from sentence to sentence, and paragraph to paragraph. Otherwise, the reader will feel the jerk. Readers have a tendency to abandon a news item at the point where it begins to jerk or waver, unless, of course, they have a specific and special interest in it.

3.8.2 Report Structure

The science-technology news report structure is not different from that of any other news report. A good beginning (intro), followed by the more important news points at the top of the story, and the lesser ones mentioned as you go down. That is the accepted pattern. This has been explained to you in the general news reporting unit and other specialised area reporting units.

All the five Ws and H — who, what, where, when and why and how — need not be cluttered in the intro. But these elements of beginning a news story must appear at the top. Nothing is ever printed without being edited. Every report you produce goes through the creativity of editors, particularly news editors and sub-editors. If your copy is badly written, no one on the editorial desk has the time or inclination to rewrite it. Science-technology news reports are almost never rewritten, because nobody wants to be accused of having tampered with its precision. Normally, there is no sense of loss if one of the paper's reporters messes up a report because reports from the news agencies are waiting — they get through the teleprinter before you, as a local reporter of the paper, manage to produce your copy. Unless your copy has the merit of being a well-written piece, the news desk has the option of using the news agency report. You may be called to the news editor's desk the next day, to explain. You do not want this to happen to you ever; never for the second time. That is why you are told to practice the art of news writing before you launch yourself as a professional reporter.

3.8.3 Human Interest

People are interested in reading something which concerns them directly — young or old, man or woman, you or yours. If your science-technology story says something which people are interested in, just make it felt. If it is about a fuel-saving device, just start: "An automobile user can now save 20 per cent of his fuel cost by opting for the 'so and so' engine system, claimed the makers of etc. etc."

Similarly make the readers feel that you are their monitor and reporter. Do not fall for the advertisement techniques of selling. Instead, seek to be the best source of information for your reader, the consumer.

3.8.4 Avoiding Exaggeration and Sensationalism

Everyone knows that exaggeration and sensationalism catch the attention of the reader. But science-technology facts simply cannot hold exaggerations. If a discovery, invention, or improvisation has an element of sensation, you should not be inhibited in including some of the sensational in your story. But do not make an invention look like something the world has been waiting for, when it is just an improvement on something that already existed.

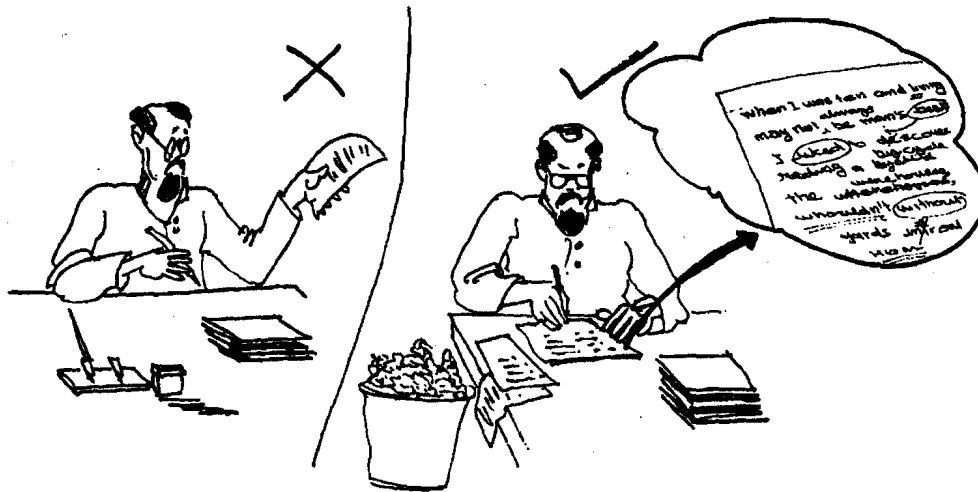
Just think about the following. During the last three decades, there have been several claims of drugs with curative and preventive properties to deal with cancer. News reports on the claims have been blown sky high. An expectant public has been waiting for the miracle to happen. The world of cancer continues to remain without the miracle drug. This is where the ethics of a science-technology reporter come into play. Do not take your reader for a ride on baseless and sensationalised points.

Sensationalism and exaggeration can only do harm to the publication and to the credibility of a reporter. A reporter whose credibility is repeatedly doubted, can never grow professionally. Just like the scientist, a science reporter also should be a seeker of truth. Like a technologist, a technology reporter too should be one who believes in precision and in updating knowledge.

3.8.5 The Importance of Rewriting

A sentence, a paragraph or a piece of writing can never be perfect. That is because of the very nature of language. There are two sides to linguistic communication — the communicator and the receiver. Only when a reporter makes sense to the largest section of

readers does he or she qualify to be a professional writer. The first draft of any writer may need a lot of tightening up, chipping and polishing. So rewrite whenever your first effort is unsatisfactory for the reader's sake.



Even so, a reporter hard-pressed to meet deadlines may be left with hardly any time to rewrite his or her copy. So, when you sit down to write, be disciplined and alert in the structuring and construction of your reports. Place the important points at the precise junctures of your story. Invariably one needs to revise the copy and make it crisp. If you are left with some time before the deadline of handing in your copy and you feel the need for it, rewrite the story or part of it. You may have to miss a coffee break and the chance to chit-chat with your colleagues. But you will be gratified in many ways if you find time to rewrite your copy.

3.9 COMPARING GOOD, BAD AND INDIFFERENT SCIENCE-TECHNOLOGY REPORTS

Every reader, and any reader, is impressed by an excellent news report. Such a report carries all the elements of good news writing. While being a reporter, you must continue to be a keen reader too. Read stories by reporters who are recognised as good writers by the profession and the public. Think about what has made them outstanding. When you see an excellent piece of reporting in a newspaper, and also a lousy one in another, just compare them. The very exercise of doing so will discipline your reporting sensibilities.

Check Your Progress 5

- Note:** a) Answer each question in about three sentences.
 b) Compare your answers with those given at the end of this unit.

1) How are the areas of development, Environment and Science-technology interlinked?

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2) If water management were a crucial problem in your region, in what way would you help to solve the problem?

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3) Comparisons are not always odious. Why is it important for a science reporter to keep comparing different articles on the same topic?

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4) List the qualities of any good science report.

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3.10 LET US SUM UP

By now, you are aware of the need for a scientific temper in order to be a science-technology reporter. As science and technology are disciplines with the hallmark of precision and factuality, you too as a reporter of the happenings in these fields, have to learn to be precise and factual. Science and technology are no more considered dry-as-bone subjects. They are the moving force of our times. People are looking up to science and technology for answers to their problems. At the same time, wrongful application of science and technology causes enormous harm to all life on Earth. Think about the use of atomic energy by nations at war with each other. Think about military industries moving the economy. Ponder over the population explosion and also the means of controlling it. Wonder and worry about humankind's thoughtless exploitation of nature and the environmental backlash. You are beginning to get your scientific temper keyed up.

Those of you who have opted to monitor the happenings in the science and technology fields of development are fortunate. The ills and cures of contemporary world are rooted in science and technology. Technology is getting updated and upgraded all the time. As a science-technology reporter, you also have to update and upgrade your knowledge about the subject and your skills of reporting. After all, the average reader must be able to understand what you write. Therefore, your top priority must be to use language that is easily understood by everyone.

3.11 FURTHER READING

Varma, A.K., (1993) *Advanced Journalism*, Har-Anand Publications, 364-A, Chirag Delhi, New Delhi.

3.12 CHECK YOUR PROGRESS: MODEL ANSWERS

Check Your Progress 1

1) i) A science reporter must search and research;
ii) Understand the topic completely; and
iii) Write it in a simple style for the readers to understand it with ease.

2) To do justice to one's own write-up, a science reporter should first verify its facts. This can be done by checking with the original sources or interviewing persons who know the subject thoroughly. One must also adopt a lucid style of writing for the report to be as self-explanatory as possible. Referring to one's personal glossary of science and technology terminology helps when one is preparing a report for a general audience.

3) A science reporter preparing a backgrounder on any aspect of the environment, say on noise pollution, will immediately have to refer to a science-technology library or

even the reference section of any comprehensive library for subject specific journals, some previous articles, reports on the same or similar subject and even statistical reference book or files if any. Of course, all this material will have to be sifted through and only the points most relevant to your topic, "noise pollution levels in your town/city in the year 1995", need to be considered. Ideally, you should have your own collection of articles on the subject in a separate file for reference. Further, if you have the facts at your fingertips for instant recall, it would facilitate your own report writing as you would be faster in collecting your thoughts, in addition to writing your report with ease.

Check Your Progress 2

- 1) An inherent scientific temper, a wide network of acquaintance among the scientists and technologists of the region, an analytical mind that will not accept anything at face value, but investigate the matter thoroughly for oneself before accepting it, a perceptive mind that thrives on a keen awareness of every event and phenomenon going on in the world around us, awareness of problems and their causes-effects-solutions.
- 2)
 - i) Interviews with acknowledged heart specialists, nutrition experts, research scientists, experts in the medical teaching profession, even persons who run gymnasiums, besides statisticians of the population. You will be expected to base your report on extensive research of the trends observed among persons who have suffered strokes. You will have to include the stress factor, the percentage of cholesterol in the diet of the average Indian male, etc. You might even be inclined to observe a general trend in the economic background, age and other points that have a bearing on the occurrence of 'strokes'. All your deductions will however have to be based on evidence.
 - ii) Automobile technology experts, retail outlet owners, motor car industry spokes person(s), traffic department personnel, Road and Transportation authorities, etc., for their opinion on the pros and cons of the use of latest model, high-speed vehicles on the Indian roads. The safety aspect together with the advances of technology are other points which should be elaborated upon, during the interviews with your sources.
- 3) If relevant, then certainly. You may even build your report on the public announcement of any ministry, using it as your news peg. This must necessarily be supplemented with other information, from persons representing the industry and those with hands-on experience in the area.

Check Your Progress 3

- 1) Central Drug Research Institute, Lucknow; Central Glass Research Institute, Dhanbad.
- 2) Indian Institute of Science, Bangalore.
- 3) The Union Ministry of Health and Family Welfare.
- 4) The Department of Science and Technology of the Government of India.
- 5) Organizations that conduct research and development in science and technology are an important source of news. Discoveries and inventions, always carry great implications with them. Their application(s) have to be explored and presented to the citizens. One could go so far as to say that the world of a science journalist revolves around research organizations. Researchers and their researches provide ample material for science articles and news stories. Thus, it is imperative for a science reporter to have more than a casual acquaintance with the personnel of R & D organizations.

Check Your Progress 4

- 1)
 - i) How long did you have to conduct research before you obtained results?
 - ii) Did you conduct research on your own or alongwith another colleague?
 - iii) Would you explain to us the phenomenon of the existence of a protective mechanism in plants?

- iv) What are the applications of this very important discovery?
 - v) Would you tell us what preventive steps to take when pruning any plant so that none of its tissues are damaged in anyway?
- 2) i) What are the dangers of playing computer games?
- ii) What exact conditions trigger such extreme reactions?
 - iii) Do the reactions differ in the degree of their severity?
 - iv) What is the general incidence of such reactions?
 - v) Does a player's gender, play a role in it?
 - vi) Can the video games be improved in terms of the visual stimulation they provide in order to overcome this drawback?
- 3) i) What is meant by clean-burn?
- ii) Is the technology more complex as compared to the type of engine currently in use?
 - iii) What is the extent of control on the emission of greenhouse gases like carbon dioxide?
 - iv) How are you planning to promote your invention in the motor car industry?
 - v) What is the percentage of fuel efficiency?

Check Your Progress 5

- 1) Yes, advances in science and technology can bring about changes for the better or worse in the environment both natural and man made. The application of discoveries and inventions in science and technology have wide implications for the development of the people belonging to different strata in society. A science technology reporter has to be exceptionally alert to changes including ones that are not quite apparent at times.
- 2) A science-reporter would present all sides of the crisis in water management. One may suggest a strategy to solve the present crisis and even to ensure that it never recurs. The article would include the reasons for the scarcity of water together with mention of the possible sources of potable water and taps to filter the available water. Officials in charge of the region's supply must be approached for comment on the crisis. The public's right to information about the measures taken by the government in this regard has to be fulfilled in this manner by the science reporter.
- 3) When one is a trainee journalist and continuing into the period when one is a full-fledged science-technology journalist, one has to compare and contrast different articles as a habit. This is one way by which to observe and learn from the different treatments given to a single topic by different writers. Nevertheless, one must evolve a creative style of expression of one's own.
- 4) A 'good' science report is one that is readable, easily understandable, having a 'crispness' that only comes with rewriting and 'polishing' so to say, and one which avoids sensationalism and exaggeration, but includes the element of human interest.