SOCIO-ECONOMIC PHILOSOPHY OF SCIENCE: THE MESSAGE TO PUBLIC

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Abstract:

Science is believed to be a mute servant of the society, catering to the needs, comforts and pleasures of human beings. It was thought that science, the material power, had nothing to contribute to the value system of life. 'Equality' of groups and sections of the people all over the world was the ideology of a politician or a social reformer, and science had nothing to say either for or against. Scientific discoveries over millennium, however, reinforced the theory of 'equality of people' and a just order. Further, the technological production alone guaranteed the 'rights of all people' in a democratic society. The message of science was thus, proved to be 'egalitarian' in essence.

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Introduction:

Man's struggle with nature for survival developed 'science'. Science, over ages, had managed to acquire sufficient knowledge of the material world. Knowledge inspired 'action'. He progressed from 'knowing' things to 'doing' things. Metamorphosis of science into 'technology' began to modify his surroundings. More 'comforts' were created by scientific discovers. Instruments were designed to improve his pleasure systems. Further, technological production resulted in abundance of physical assets. The affluence thus created had to be distributed among more number of people through 'market systems', normally, determine the consciousness of human beings. Even a ruffian learns to be a Roman in Rome.

Scientific Method:

The dictionary meaning of the word 'egalitarian' is to believe in the 'equality of rights to all the people'. The word sounds political or social and apparently does not belong to scientific jargon. Learners of science are told that 'science is the accumulated knowledge of the physical world'. The definition at that stage implies that it has nothing to do with individual thinking, social habits, philosophical moorings, religious traditions, castes or classes.

History of science tells us that it dates back to a few thousand years Before Christ (BC). Man's struggle with nature for his day to day survival began to reveal the secrets of material world, which were called 'discoveries'. Though modification of surroundings as result of these discoveries gained momentum after the sixteenth century A.D., civilizations like Indus-Valley, Greek, Egyptian, and Chinese flourished with the then existing knowledge of material power from 3000 B.C. itself. Invention of Metals, Utensils, Weapons, Poisonous Substances, Handicrafts, Colors, Textiles, Chemicals and Medicines marked the growth of materialistic culture up to the beginning of Renaissance period in 1500 A.D in Europe

After seventeenth century, Newtonian science, which we call 'modern science' revolutionized ideas in Physics, Chemistry, Biology and Astronomy. The invention of gun-powder, mariner-compass, and electric lamp began the new order of industrial era. The scientific method, as described by Karl P.Popper and Thomas S.Kuhn, developed revolutionary theories in material-understanding, each improvising the earlier one, substantially modifying the former.

Revolution in Science:

Invention of Steam Engine by James Watt in 1736, Electric Lamp by Edison in 1793, the Principle of Vaccination by Louis Pasteur in 1822, Roentgen's X-Rays in 1896, Aero plane by Wright Brothers in 1903, and Penicillin by Alexander Fleming in 1929 gave momentum to the new scientific progress. The scientific 'age' dawned, providing a different way of life, shattering the existing 'faiths' and 'conceptions'. The doctrine of 'Old order Changeth giving place to new' was proved correct. The split of atom in 1940s was a giant whiplash on human civilization. The expansion of science by leaps and bounds, having started after First World War, exploded after World War-II. Technology and engineering were illuminated by the advent of computers, the new wonder of the scientific scenario, in the last quarter of 20^{th} century.

Effect on Human Life:

Modern science is not only capable of providing human comforts but an instrument of producing changes in human character, social-relations and his philosophical thinking. J.D. Bernal, a great science – historian reported that science could be divided into five categories (a) an institution (b) a cumulative tradition of knowledge (c) a tool for development and material production (d) a method of searching the truth and (e) an influence to mould human attitudes.

People generally believe that science is all the a, b, c, d and not 'e'. They do not realize that scientific temperament and technological life influence the thinking of the people. They arrogate themselves to the point of view that human thinking is sacrosanct and cannot be altered by aberrations of science drama.

Science entered the phase of 'industrial revolution' in the eighteenth century when the technological production is bigger, sharper and faster, many times, than the primitive hand-made production. To cite an example, a hand-loom produces a saree in fifteen days and a power-loom makes hundreds of sarees in a day. A bible copy could be prepared by hand-composure press in a month, while power-press could print a dozen copies in a day. Same speed could be visualized in other sectors too. The speed of the horse-driven cart was no where near the car or train, not to talk of the aero plane.

The Concept of Equality:

After the French revolution (1789), socio-political philosophy of the world underwent a drastic change. Liberty, equality and fraternity became the philosophical trio-of modern Europe. 'Egalitele' is a French word meaning 'Equality'. Karl Marx in the 19th Century further expanded the theory of equality into theory of communism, based on the politics of France, economics of England and philosophy of Germany, while socialism pleaded for equal opportunities for people according to their ability, Marxian communism prescribed each according to his 'need'. Marx foresaw that his theory of absolute equality will be realized by technological production. The capitalists, the owners of machine production, had to distribute the products to all sections of people for their own profits, resulting in equality of people not by 'consent' but as a 'consequence'. The capitalist cannot afford to discriminate on grounds of colour, caste, creed, race, gender, nation or notion.

Voice of Science:

Technology was welcomed as a natural agent for the emancipation of poor, weak and the disadvantage groups by leaders like Jawaharlal Nehru of India and promoted as a part of egalitarian thinking. A Nehrurian intellectual, Bidhan Chandra Roy, the President of Indian Science Congress in 1957, proclaimed that 'science is an agent of change in the twentieth century that drew-millions of people into one common fabric of human society and social order. When a whole population uses a common railway platform, telegraph unit, telephone link, broadcasting system, omnibus, train, car, and a cinema then results a sense of equality 'identical' way of living without coercion or compulsion.

The unfulfilled 'dream of equality' contemplated by philosophers and politicians for centuries was thus realized by 'science' and its cousin 'technology'. An equal and just society can not be realized by poverty distribution but only by product distribution. It is the technology which created vast amounts of food, clothing, cement, bricks and iron, catering to the needs of millions. Majority of poor people thus got qualified themselves into competition with rich and advantaged sections of the society. R.A Mashelkar (1999) in his Bose-Einstein lecture categorically said that "technology is not value neutral. Certain technical developments are more likely to serve open

democratic processes than others which will have a profound impact on global economic and socio and economic political scenario".

The wonders of scientific age continued as follows:

a. The poor old man in an 'untouchable colony' is saved by a kind of doctor and his anti-biotic drugs.

b. Infectious diseases are contained by detergents, deodorants, vaccines and inoculations.

c. Surgery was facilitated by anesthesia, air-conditioning and electronic gadgets.

d. Proteins, vitamins and nutritious diet supply was possible by medical assistance to all the sick and needy.

e. The genetics and DNA studies confirmed that social inequalities are not ratified by scientific discoveries. The blood-groups A, B, AB and O are physiological divisions and have nothing to do with social determinants like caste, creed or colour.

f. The Environmental science born in the last leg of 20th Century further advanced the argument of equality of all species, humans, animals, plants and microorganisms as a vital need for ecological balance and sustainability of biodiversity. The science of environment prohibits all dubious discriminations as harmful and hazardous to 'sustainability' of life on the planet. The essence of environmental science transcends all inequalities, propounded by political and philosophical texts and declares as null and void.

Conclusion:

The rights of people in the scientific age are guaranteed by material production and not by ideological prediction. T.R. Seshadri, an Indian Chemist and a Fellow of Royal Society categorically stated that 'science further provides intellectual pleasure, happiness and efficiency

'equally' by it's application to economic and social life and the persisting ideas of superior and inferior races, colour prejudices and other indignities inflicted on people are demolished. Science came to support this particular truth of unity of man and makes us more ethical than we happened to be before'. So said TRS in his convocation address to Andhra University in 1963, thus summarizing the burden of our discussion. The essence of the paper is represented in Fig.1.

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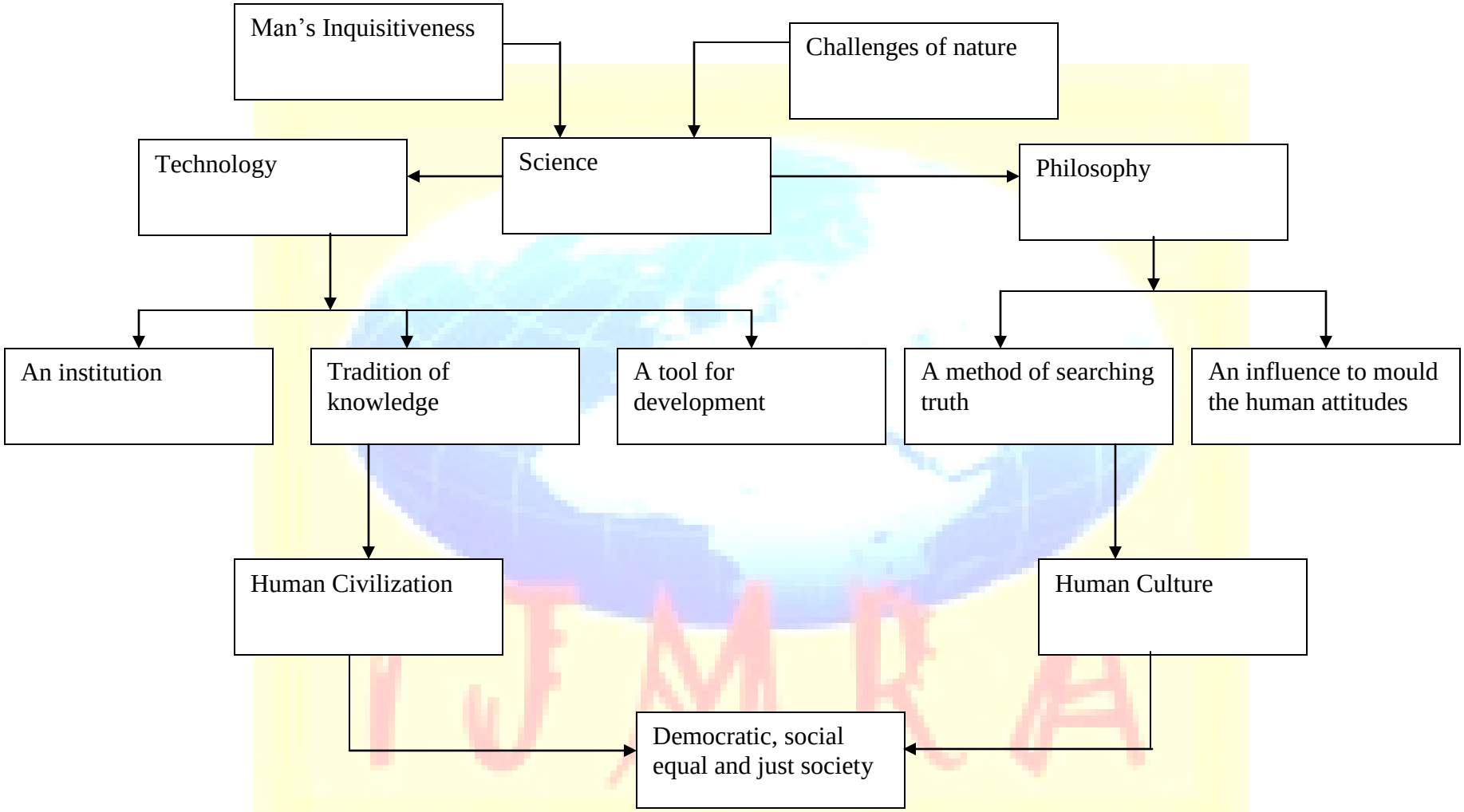

Fig.1. The sketch diagram showing the birth, growth and message of science.