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Science is not a matter of a steady accumulation of knowledge. All scientific inquiries need not necessarily lead to success. New theories are proposed, some of the existing ones are still used while some others are abandoned. The existing knowledge at any period is only provisional, never final and irrefutable.

In fact, Karl Popper (1959), one of the philosophers of science, is of the opinion that it is never possible to prove anything in science with absolute finality. He asserts that there is always a possibility that an exception will be found to every scientific law. “ All that we can do is disproving hypotheses, and our scientific knowledge consists entirely of theories that are not yet disproved, although one day they might be. Competition in Science:

Scientist’s Desire for Recognition: Competition is one of the factors involved in the social process of innovation. Scientists are also caught in a competitive race like any other individuals because of their longing for recognition. Those who arrive at first in a discovery naturally obtain name, fame and honour.

The scientist who gets there second by independent work is ignored, no matter how meritorious his or her work consists in. Scientists are also socialised to do original research. Importance is laid on this aspect. Because, researchers get no credit or recognition for following in the footsteps of others. Since professional recognition is of great importance to the scientists they normally prefer to follow their own path and break away from that of others. Functional Effects of the Desire for Recognition: The desire for recognition on the part of scientists may have its own undesirable effect by encouraging secrecy. But such a desire is not always dysfunctional. It has

several functional effects such as the following: Firstly, desire for recognition encourages scientists to publish their findings and communicate their results to others as soon as possible.

Secondly, competition reduces wasteful duplication of efforts for scientists are motivated to tackle problems that the others are not working on. Thirdly, competition encourages scientists to explore new specialties or even to find new disciplines in the existing areas of ignorance. : Innovation is an essential aspect of science. Growth of science hinges more and more on innovations. But the history of development of science reveals that innovation has not always been encouraged and welcomed. On the contrary, it is often resisted. As Thomas Kuhn points out, “ Resistance to radical innovation has been the norm rather the exception in the scientific community.

” Examples: (i) Galileo’s colleagues, for example, refused to look through his telescope to the moons of Jupiter; (ii) Scientist Giordano Bruno was burnt at the stake for having proclaimed that the earth revolved round the sun. (iii) Louis Pasteur’s germ theory was ignored by the surgeons of his time, who could have saved countless lives by washing their hands and instruments before operating on the patients, (iv) William Harvey’s theory of the circulation of blood was greeted with hooting and derisive laughter’s when he presented a paper on the subject in a gathering of the physicians, (v) Sigmund Freud, was shouted down by his furious fellow psychologists when he proposed his theory of childhood sexuality. In fact, a contemporary biologist Edward Wilson made an attempt to launch a new science namely, “ sociobiology” (the unified study of all social animals, including human beings) which was severely opposed by scientists in several fields. In the <https://assignbuster.com/science-scientific-law-all-that-we-can/>

same manner, various discoveries of modern physics, such as - the laws of gravitation, theory of relativity, wave theory, and quantum theory, were vigorously resisted for years after they were first announced. : The examples cited above give rise to a pertinent question: " Why so many of these scientists themselves are reluctant to accept scientific innovations?"

Scientists during the early days were reluctant to accept new scientific theories or innovations mostly due to the following reasons: Firstly, most of the scientists used to follow the existing norm of the day, that is, -rejecting as unacceptable any new theories or discoveries that deviated from or undermined the existing one. Secondly, scientists might be reluctant to give up the ideas that have proved useful in the past, and particularly when their reputation is very much tied to their work. Thirdly, scientists were reluctant to admit fresh evidence that would upset their tidy theories, or make them look foolish in the eyes of the public. Fourthly, the scientific community was under the heavy influence of the society especially during the early times.

As it could be observed in the 17th and 18th centuries, and also earlier, scientists were blinded to the facts by the religious dogma of the time. By the late 19th and 20th centuries, the religious world view was no longer uncritically accepted. Further, there was growing faith that the science could unlock the mysteries of nature. Hence, new theories started getting quick acceptance. : It is significant to note that the time lag between an innovation and its final acceptance was far greater in the past than it is today.

For example, it took centuries for the scientists to accept the evidence of the earth's age, but it took only decades before most of them accepted the evidence for the evolution of the species. Scientists have become today

more open minded. They are mentally equipped to accept new facts and give up the old ones, if they are proved to be wrong. Why is this change in their approach? Why the scientific innovations are much more readily accepted today? : According to Kingsley Davis, there are four factors which make the modern society more or less willing to accept comparatively quicker the scientific innovations. They are as follows:- Firstly, society's attitude towards change very much influences its preparedness or unpreparedness to accept innovations. Most of the modern societies are no longer suspicious of change. Those societies which believe in " progress" and acknowledge the role of scientific innovations in bringing about that progress, normally have a readiness to accept novel ideas, new findings and innovations.

Secondly, the factor of institutionalisation of science affects also influences the acceptance of innovations. The process of institutionalisation of science leads to the primacy of science. In a society where science is institutionalised, science becomes a central activity rather than a marginal one. In such societies, scientists are socially rewarded for new discoveries. Needless to say, innovations take place much faster in them. Thirdly, the factor of specialisation also affects the tempo of innovations. We are living in an amazing world where life is short and intellect is limited.

If scientists are amateurs in several fields, they are less likely to make discoveries than highly specialised practitioners. These practitioners are intimately acquainted with a particular field. They delve deep into that field and try to know a small topic. They become specialists in their respective fields. They are the ones who take initiative in innovations and who invite

and encourage innovations. Fourthly, the factor of the methods and means of communication not only influences innovation but also contributes to its diffusion. If new ideas can be conveniently stored and quickly transmitted, information becomes more accessible and can more readily be put to use. The modern means of communication such as computer networks, internet, e-mail, etc, have added to the process of diffusion of innovations.

As Kingsley Davis has pointed out the four factors mentioned above, have been operating in most of the well developed modern societies to make them accept rather than resist innovations.