Science and Society

Some scientists and engineers are comfortable working in situations in which some secrecy is required, but others prefer not to do so. It is generally regarded as a matter of individual choice and ethics, not one of professional ethics.

The strongly held traditions of science, including its commitment to peer review and publication, serve to keep the vast majority of scientists well within the bounds of ethical professional behaviour. Deliberate deceit is rare and likely to be exposed sooner or later by the scientific enterprise itself. When violations of these ethical traditions are discovered, they are strongly condemned by the scientific community, and the violators then have difficulty regaining the respect of other scientists.

Accurate record-keeping, openness, and replication are essential for maintaining an investigator's credibility with other scientists and society. Work of Science

In research involving human subjects, the ethics of science require that potential subjects be fully informed about the risks and benefits associated with the research and of their right to refuse to participate. Because animals cannot make informed choices, special care must be taken in using them in scientific research.

A lot can be learned about plants and animals by observing them closely, but care must be taken to know the needs of living things and how to provide for them in the classroom.

When applications of research could pose risks to society, scientists' decisions to participate in that research are based on personal as well as professional ethics.

Scientists can bring information, insights, and analytical skills to bear on matters of public concern. Acting in their areas of expertise, scientists can help people understand the likely causes of events and estimate their possible effects.

Scientists often cannot bring definitive answers to matters of public debate. There may be little reliable data available, or there may not yet be adequate theories to understand the phenomena involved, or the answer may involve the comparison of values that lie outside of science.

In science and invention, progress in science and decision making involves scientific and technological developments.

History often involves scientific and technological developments.

Funding influences the direction of science by virtue of the decisions that are made on which research to support. Research funding comes from various federal government agencies, industry, and private foundations.

Scientists' nationality, sex, ethnic origin, age, political convictions, and so on may incline them to look for or emphasize one or another kind of evidence or interpretation.

Scientists' personal interests and viewpoints can influence the questions they investigate.

Societies influence what aspects of technology are developed and how these are used. People control technology (as well as science) and are responsible for its effects.

Until recently, women and racial minorities, because of restrictions on their education and employment opportunities, were essentially left out of much of the formal work of the science establishment; the remarkable few who overcame those obstacles were even then likely to have their work disregarded by the science establishment.

Some matters cannot be examined usefully in a scientific way. Among them are matters that by their nature cannot be tested against observations.

Many social practices and products of technology are shaped by scientific knowledge.

A scientific world view is like.

Scientists can sometimes be used to inform ethical decisions by identifying the likely consequences of particular actions, but science cannot be used by itself to establish that an action is moral or immoral.

Science affects society.

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Society affects ethics in research.

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