



***Science and Risks:
The Challenges of Integrating into Social Life:***

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Received: 20 /05 / 2024

Accepted: 14 /06 / 2024

Published: 21 /06 / 2024

Abstract:

Science boasts several advantages, including its cumulative, realistic, and predictive nature. It represents a collection of human experiences, enabling individuals to make informed judgments. As an organized and coordinated body of knowledge, science has both positive and negative aspects. The negative side can pose a threat to society as a whole, while the positive side can offer significant benefits

Given the diverse nature of risks, science endeavors to develop suitable preventive solutions and predict potential problems before they occur. This discussion will cover these efforts, examining the negative aspects of science, such as cloning and globalization, which may threaten our society, alongside the positive aspects, such as inventions and innovations, that help mitigate these risks.

Keywords: *Science, Risks, Challenges, Integrating, Social life*

I. INTRODUCTION

Science is the set of human experiences that make man capable of estimating, or science is the understanding of the phenomena of the universe, their causes and effects.

The two concepts have a common content: the ability to relate causes to causes.

Definition of the new Wester dictionary of science:

Systematized knowledge that arises from observation and study

Experimentation, which is carried out for the purpose of determining the nature, foundations or origins of what is being studied, is a branch of knowledge or study, especially that branch related to the coordination and consolidation of facts, principles and method by means of experiments and hypotheses.

1. Academic definition of science:

1.1. Definition of historian Herbert Butterfield:

that science is a new development of knowledge and a new intellectual trend, necessitated research in its foundations, as well as it required studies and innovative approaches to address the phenomena of society and its problems, and perhaps what stresses most Butterfield in his perception of science, is the occurrence of a scientific revolution certain, and radical changes in the field of science itself, and in the formation and reformation of social life itself.

Louis Pasteur's definition: Pasteur views science as knowledge gained from structured observations, experiments and inferences. (- Dowaidripp. 22-23)

1.2. Characteristics of the flag Realism:

In the sense that science is realistic, that is, scientific knowledge is based on extrapolating the phenomena and experiences that we live in, not just contemplating and looking at them.

Science is formulated in cases

For example, sociology studies issues related to human behavior and everything that is realistic in this science must be presented or translated into the form of issues.

1.3. Objectives of science:

Coming up with a theory:

and theory. It is a structure of interrelated concepts, definitions and sayings, which provide a systematic theory to accidents by determining the relationships between variables in order to explain and predict accidents, for example: the researcher may be a theory about the reasons for failure in a profession, and his variables may be the amount of intelligence, age, experience, anxiety...

The incident to be explained is failure in a profession, and failure in this case, is explained by limited relationships between both the variables mentioned and the failure in this profession and the set of variables and failure at work, and the scientist who uses these concepts successfully, realizes the cause of the failure, and becomes able to explain this failure or to some extent able to predict it.

a. description:

The process of description refers to clarifying the elements and dimensions of an idea or subject (phenomenon) qualitatively and quantitatively in the sense of linking qualitative and numerical description, because sufficiency with narrative description has become insufficient because the phenomenon has more than one side, where it is noted that it is a network of elements that overlap with each other, and this overlap needs to be described.

b. Interpretation explication:

It is the extraction and interpretation of the meanings and connotations inherent in a phenomenon, of a particular idea or situation and the interpretation of types so that we stand at.

Functional explanation: As to say, the more education, the higher the income.

Causal explanation: It is the existence of a cause that leads to a certain result, such as saying that poverty leads to deviation.

Prediction:

It is one of the main goals of science, and it means that we acknowledge what will happen in light of what exists in the sense that there is a correlation between interpretation and prediction, as interpretation does not have meaningful meaning when it does not help to predict.

Prediction also means the certainty of the applicability of the general principles or rules reached by scientific research to other situations in situations different from those previously extrapolated.

Prediction in this image helps to achieve more understanding and destiny greater than interpretation and the acquisition of new science, because it is an important step in completing the process of scientific research, which is an attempt to verify the validity of the information that could be obtained, if the predictions are proven correct, it means that the data on which the prediction was built

If the predictions are not valid, then the data must be revisited or re-searched in light of more of them, or using others or changing search methods.

2. Control:

It means addressing the situations and conditions that have certainly emerged that the phenomenon occurs, in a way that allows achieving a certain goal, and the ability to control increases as the understanding increases and thus the ability to predict increases, in addition to that the success of controlling the phenomenon and its repetition, is at the same time a test of the extent of understanding and interpretation, and the extent of the validity of predictions regarding the phenomenon studied, understanding and interpreting the phenomenon of rural migration and its effects in the industrial city and the consequent ability of this understanding and interpretation, of the ability to predict what happens in situations and conditions Similar ones, which help to modify these conditions and conditions in a way that prevents the occurrence of the phenomenon, or mitigates its severity or changes its course (Akil, Beirut 1982, pp. 26-27).

3. Risk concept:

Definition 01: It is a situation that poses a level of threat to the life, health, real estate or environment of the employee in the workplace, such as: working with fire, flammable equipment, carrying heavy objects, handling sharp objects, working near the streets, working in high areas, or working in closed places.

Definition 02: It is an expression that refers to a potential future risk resulting from the conduct of an action, which led to the concept of risk focusing on the negative aspects of doing an action.

Definition 03: Risk can be seen as an opportunity that can bring positive aspects.

4. Types of risks:

Religious hazards: such as religious extremism.

Social risks: such as family disintegration, divorce.

Economic risks: such as economic dilemmas (drought, lack of self-sufficiency, machine substitution, unemployment).

Cultural risks: Like cultural invasion, different dialects lead to conflict.

Second: Models about science and risks highlighting the relationship between them

II. The positive side of science

Disasters destroy lives and livelihoods around the world. Between 2000 and 2012, 1.7 million people died from disasters and an estimated US\$1.7 trillion in damage. Disaster risk reduction activities aim to reduce the human, economic and inter-agency costs of such disasters, and science can play a fundamental role in these efforts as it uncovers new ways to prevent, prepare for and respond to disasters, as well as identify the most effective techniques in disaster risk reduction. As a result of scientific research, there are now programmes around the world to predict floods, detect tsunamis, prevent disease outbreaks through vaccination, and effectively report disaster risks to strengthen community resilience. Thus, science is already helping to save lives and livelihoods in some cases. But what do we mean by science? Science is knowledge acquired through study or practice. On the issue of disaster risk reduction, science is seen in the broadest sense to include the natural, environmental, social, economic, health and engineering sciences, and scientific capabilities are broadly interpreted to include all relevant resources and skills of a scientific and technical nature."

The more widespread integration of science with disaster risk reduction policymaking will depend on the fact that science is useful, usable and used. The 2009 report of the Scientific and Technical Committee of the International Strategy for Disaster Reduction, entitled Disaster Risk Reduction through Science: Themes and Actions, addressed how the challenge of integrating scientific knowledge into policy can be overcome by improving dialogue between scientists and decision-makers, making science useful for disaster risk reduction. that science is usable in the field of risk reduction

Calamities. By 2015, the Scientific and Technical Advisory Group of the International Strategy for Disaster Reduction aims to demonstrate that science is consistently used in disaster risk reduction.

Case studies illustrate the complexity of disaster risk by exploring the details of a real-life situation and at the individual level, these studies identify specific lessons for success in risk reduction, while working together to clarify common cross-cutting principles that can be observed during each study. The case studies in this report have been selected from various scientific disciplines and from around the world. It shows that science can:

- Be driven by the need to address the adverse effects of disasters on lives, livelihoods, economies and societies
- Allows for more focused disaster risk assessment
- Reduces the impact of disasters by raising the efficiency of the forecasting process
- Improves disaster risk reduction programs.

Looking ahead, the need for more effective science, policy, and practice interaction in support of disaster risk reduction activity provides a great opportunity to learn and work on a collaborative basis, and the science community should find better and faster ways to interact with the results and communicate them to policymakers. For example, forecasting is already evolving in relation to some risks and is expected to improve significantly in the coming decades.

Research agendas should be developed in collaboration with all stakeholders, so that scientists' work is focused on finding solutions to the challenges faced by policymakers and implementers now and in the future. This applies to research across the full cycle of risk

reduction, from prevention, forecasting, early detection to response and disaster mitigation in low-economy settlements where most income comes from climate-sensitive primary resource industries such as agriculture. The Scientific and Technical Advisory Group makes the following recommendations:

III. Promoting the transformation of knowledge into practice:

Greater priority should be given to sharing and disseminating scientific information, translating it into practical ways that can be easily integrated into policies, regulations and implementation plans for disaster risk reduction. Education at all levels, comprehensive knowledge management and the involvement of science in raising public awareness, media communication and awareness-raising campaigns need to be strengthened. Specific innovations should also be developed to facilitate the integration of science inputs into policymaking.

Science must feature prominently in Hyogo's post-2015 framework. The Scientific and Technical Advisory Group considers it necessary by 2015 to clarify that science is routinely used to enrich disaster risk reduction, and therefore occupies a prominent place in the post-2015 Hyogo framework, and calls on all scientists to provide evidence of this by explaining how science has responded to a problem, what scientific knowledge has been acquired, how the results have been applied to policies and practices, and how Make a difference when executing.

IV. The negative side of science:

- ☐ **The impact of technology on society:**
- ☐ **The positive impact of technology on society:**

Reducing the actual communication between individuals, as remote phone calls and text messages replaced the actual close communication, which led to a radical change in the concept of family cohesion and cohesion based on help and assistance, and the writer Alvin Toffler said in his book *The Third Wave*, civilization has brought us a new family pattern, changed ways of working, love and living, and a new economy emerged that resulted in new political problems, and in the background of all that human consciousness changed)

The spread of books, newspapers and digital magazines, replacing traditional means, which affected the methods of expression and writing.

- Increasing the requirements of life that an individual must provide and acquire, which costs individuals a load
- Increased unemployment rates, owing to the increased use of technology in the fields of industry and agriculture, which has led to the dispensation of some human efforts in the management of these areas.
- Increasing demand for electrical energy sources, as most technology tools only work with electrical energy, which has introduced societies into modern patterns of consumption.

V. The positive impact of technology on society:

Development of economics, medicine and education, which positively affects society

Develop the capabilities of individuals by providing all means of learning, such as learning languages, and learning design programs, for example

Develop the capabilities of individuals by providing all means of learning, such as learning languages, and learning design programs, for example.

Developing the culture of individuals, expanding their perceptions, and keeping them following all world events without any excuses that prevent them from being held up to societies

Facilitating and facilitating the daily life of individuals, as the individual can accomplish many works in a short time and quickly, and the work, movements and orientations of individuals have been associated with this that facilitated the convergence of opinions and points of view; through the provision of technology for community communication, which contributed greatly to identifying the opinions and theories of the other party, and their way of thinking and dealing with them, increasing their experience, knowledge and way of dealing with problems.

VI. Reproduction:

Human cloning:

Human cloning is the making of a genetically identical copy of a human and this term is usually used to refer to artificial human cloning, which is the cloning of human cells and tissues, it does not refer to identical twins as a common way to produce human copies and the ethics of cloning is a controversial issue.

Therapeutic cloning and reproductive cloning is one of the most discussed types of human cloning, and therapeutic cloning is the cloning of cells from an adult and their use as treatment and graft, and one of the common methods of therapeutic cloning is nuclear transfer of somatic cells and recently the synthesis of stimulated stem cells and reproductive cloning is the manufacture of a whole cloned body instead of cloning only specific cells or tissues.

-Types of human cloning:

Reproduction of human cells and organs:

Scientists are in constant search for human parts, hoping to manufacture the hearts, kidneys and livers that humans need, and to find and secure the vitality of joints, bones and skin by renewing the vitality of their cells.

-Embryo cloning:

Embryo cloning is one of the most dangerous types of human cloning, as scientists are not satisfied with cloning human parts, but are moving to make a complete human being by cloning embryos.

Here, the process of cloning human embryos is similar to that used in animal cloning, and is done by injecting cells from a man into an egg that is then implanted in the womb of a woman.

Examples of cloning results:

-Risks of cloning technology in humans:

Risks to the mother:

Often the fetus grows inside the mother's womb and exposes the uterus to explosion, bleeding and infections and may end with the death of the mother and other times the placenta grows to a size that causes strangulation of the fetus and damages the mother and may result in the security fluid and intention to sin, as its quantity is often great and causes the death of both the mother and the fetus.

Risks to the fetus:

Cloned embryos die by 95% of pregnancies in multiple stages and the success rate of completing pregnancy and childbirth does not exceed 1% and most embryos perish a few days after birth, as well as serious abnormalities that occur in the liver, heart and immune system, as well as a multiple physical defect that threatens the life of the fetus with many diseases and often ends up dying after and for its birth In order for researchers to avoid these risks, it is inevitable to follow up carefully and permanently from the first moment of cloning technology during pregnancy and childbirth and afterweeks.

The researcher must supervise and follow up at the cellular level every cell in the embryo and this is impossible theoretically and practically.

-Risks of human cloning to the foster mother and fetus:

The aforementioned risks apply to experiments on human embryos in a larger and uglier way due to the accuracy of the formation of the human embryo and the sensitivity of its embryonic cells and their weak resistance to biological variables. (Robert, 2015, p. 56)

C. Nuclear Testing

The concept of nuclear testing:

Nuclear explosives are explosions carried out by States that possess nuclear technology and are conducted in the atmosphere, at different altitudes, under water or underground, and the immediate effects of these tests and the nuclear waste they leave to which the environment and future generations are exposed. (Khayati, 2009, p. 20)

VII. Types of nuclear tests:

The types of nuclear tests are classified on the test site and these types are:

- Atmosphere: By aircraft, this experiment can cause a large amount of nuclear dust.
- Above the atmosphere: can generate an electromagnetic pulse
- Underwater: on the bottom of the seas and oceans.
- Underground.

French nuclear tests in the Algerian Sahara as a model:

France was not satisfied with killing Algerians in the usual ways, whether before the revolution or during, its methods to the extent of science and technology in an attempt to keep pace with it, which possessed nuclear weapons, resorted to its initial tests in the Algerian desert, and made the inhabitants of those areas, Bedouins, nomads and detainees laboratory rats as an entrance to the nuclear club.

France began its series of nuclear tests on February 13, 1960 with the experience of war and on the blue in the Hammoudia area in the municipality of Reggane, the Algerian province of Adrar, and the power of the explosion reached more than four times the bombing of Hiroshima, and the surface explosion of the bomb had a strong and dangerous impact, which led to the formation of a cloud that covered the region and reached the state of Chad, then France carried out three other nuclear tests called the white jerboa, then the red and finally the green gerbil.

After the international community moved in the early sixties to ban nuclear tests in some environments, especially in the atmosphere, France carried out more than 13 tests in the Ain Enker area in Tamanrasset, southeast of Algeria.

At this time, France had officially announced that it had successfully conducted its first test and joined the nuclear club to the applause of the French.

-Effects of nuclear tests

Most nuclear tests took place between 1946 and 1996, with the United States, Britain, France and China conducting more than 2,000 nuclear weapons tests.

Nuclear tests have created many social, cultural and economic consequences as a result of these tests.

In addition to the displacement of many of them, the loss of their lands, and many of them were prevented from practicing their traditional work in order to earn a living, those affected were not compensated and reported a lack of official accountability.

Nuclear tests have also negatively impacted mental health by fostering a climate of fear of radiation exposure at test sites and creating a culture of social stigma and racial discrimination.

Among the tangible effects of nuclear testing are a sense of humiliation and dissociation from society .

For this achievement, the people of the Algerian region of Reggane were living in horror and horror of what they saw, but they did not realize at the time the effects that the explosion would have on their health or environment.

On the other hand, these nuclear tests have had an impact on both humans and the environment in the surrounding areas, and have resulted:

- 1- Many of those who saw the event lost their sight
- 2- The emergence of some diseases that were rare in that region, such as skin cancer, and eye diseases.
- 3- Repeated deaths of children at birth in addition to birth with birth defects.
- 4- The prevalence of infertility among married couples

Scientific studies have also proven that the nuclear tests resulted in sudden changes in the climate, such as the movement of sand dunes in areas that were factors of air erosion, so the radiation eliminated the various natural bounties that were characteristic of the Rafan region, and this is reflected in the damage to the cultivation of grains and palms, and the radiation led to a decrease in biodiversity and livestock, and the disappearance of a number of birds and reptiles, and the soil was subjected to nuclear burning, making it unsuitable for agriculture, as the vegetation cover was damaged. Agricultural crop production has declined while surface and groundwater have been exposed to radioactive contamination.

VIII. Conclusion:

At the end of this research, we conclude that science has a positive limit and is represented in cloning and various devices were invented in reducing natural hazards... etc. and others.

Science may be useful if you use it in things that benefit the nation and society, it is harmful if you use it in harmful things, this damage returns to us and our society together as a whole.

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