

The value of science:
is science
predominantly good
or bad?



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THE VALUE OF SCIENCE: IS SCIENCE PREDOMINANTLY GOOD OR BAD?

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Tolstoy, in his 1885 book, *My Religion*, said: “ In vain do science and philosophy pose as the arbiters of the human mind, of which they are in fact only the servants. Religion has provided a conception of life, and science travels in the beaten path. Religion reveals the meaning of life, and science only applies this meaning to the course of circumstances” (Tolstoy, 2003).

Even though science cannot give us all the answers in life, it has still has a gigantic influence on our world. In recent history science has taken the forefront in the provision of human knowledge. Before this knowledge was gathered much differently and giant sectors of knowledge was in past times prescribed by the church. Scientific knowledge has been shunned continuously throughout history, scientists has been prosecuted and even executed for their radical beliefs.

With the passing of time we have become more accustomed to scientific “ truths’ about the world. Humans have begun to accept science as a provider of trusted, accurate knowledge. As this transformation of the acceptance of science has progressed the impact science has had on the world, to use a Newtonian analogy, has been gaining momentum and speed and its inertia has become immense. The question now beckons what impact this scientific revolution has had on human kind. This impact has been universal and has had positive and negative effects for humans and nature alike. A rational question that one might ask is whether this impact has been positive or good if you look at science in its totality? Are we better off than we were before this revolution? Is science predominantly good or bad? This essay believes <https://assignbuster.com/the-value-of-science-is-science-predominantly-good-or-bad/>

that it not as simple as merely stating that science has been good or bad for the world.

This essay will examine these questions and explain why it is difficult to make such a value judgment on science. First one must understand how the world sees science today and how this view has evolved. The next section will therefore be on the worldview of science. The subject explained above has an obvious value judgment imbedded within it seeing that the “goodness” or “badness” of science will be examined. This moral judgment will be examined in the light of the moral philosophical areas such as Utilitarianism and Kantian ideas such as the Categorical Imperative. Following this a section will be devoted to the positive and negative sides of science.

Concluding the essay a defense of science will be given and an explanation why this essay believes that science is predominantly good. The world view of science There are some differing views of science available today. Two main groups stand out above the rest according to Kitcher (2003) namely the “scientific faith-full” who describes science as the search for objective knowledge and the apogee of human achievement. Then there are the “debunkers” who sees science as a giant instrument of oppression used by the powerful. Kitcher in his book, *Science, Truth and Democracy*, poses another view of science that he adheres to.

He perceives science as an artisan or a worker that can deliver something of value to the general community, but that is broadly responsive to critique and social standards. Examples of this type of science will be provided in the

section below on the positive impact of science. Another interesting view of science is that of Wilbur Zelinsky (1975: 123). According to Zelinsky science in the past four hundred years has escalated to the position of the dominant religion. Among the lay population the word of the scientist is truth. With a mere formula provided by a Doctor or even better a Professor the truth of a matter can be prescribed to the masses.

He believes that this iconic view of science will not be able to hold on to its position for much longer though due to the negative influence it has on the world. One of the reasons he states for this belief is that scientific revelations can bring wondrous achievements, but the side- and after effects are many a time not worth the gains. He also feels that science does not answer some of the most fundamental questions in life. Furthermore he states that even in this “ Golden Age” of science we are still faced with some of the old festering problems (Zelinsky, 1975: 129). Silvia Manzo (2006), in an essay about the views of Francis Bacon on science, describes science as a new type of power that has developed some quarrels between “ ancients” and “ moderns” over authority.

According to Manzo, Bacon believed that science: “ did not provide for the independent judgment of men”. C. W. Mills also see a social problem within science and describes science as: “ the wasteful absurdities of capitalism” (Mills, 1963: 540). There are many other views of science, which falls outside the scope of this essay.

One should note that there have been many criticisms by influential thinkers on science and the way science is done. The question whether science is

good or bad is therefore an important one. We will see if the criticism can be substantiated by a claim that science is bad. Morality of science Moral philosophy is a giant subsection of philosophy that can help us to put the question of the value of science into perspective. Moral philosophy according to Socrates tells us how we ought to live and why. Some of the basic ideas of morality are that we should not use people as means to an end and that we should look at the benefits of a decision in deciding its 'rightness'.

There are many ideas in the fields of moral philosophy and also many conflicting ideas. This essay will briefly look at the utilitarian theory of Bentham and Mill and also at some of Kant's ideas on morality. To understand utilitarianism one must understand the principles that the theory is built upon. Firstly the 'correctness' of actions should be judged exclusively on their consequences and nothing else. Secondly happiness or unhappiness as consequence is the only important thing. Thirdly happiness counts equally among people.

Therefore the consequences of science would be very important according to utilitarianism if one were to judge whether science is good or bad. The next section of this essay will therefore look at some of the negative (bringing unhappiness) and positive (bringing happiness) consequences of science. It is questionable whether the consequences are the only thing that matter and utilitarianism has received many attacks on this point. Still there are many followers of utilitarianism through the years. Utilitarianism also provides a practical way of analyzing the science problem that this essay tries to analyze (Rachels & Rachels, 2007: 100-103). The next section of moral philosophy that will be incorporated is that of Kant's Categorical Imperative. <https://assignbuster.com/the-value-of-science-is-science-predominantly-good-or-bad/>

According to this theory there are certain rules that you ought to follow, period. Your own wants and desires are not important. An example Kant gives is that you should never lie. Kant phrases the Categorical Imperative thusly: Act only according to that maxim by which you can at the same time will that it should become a universal law. This idea binds rational agents to certain rules no matter the situation. This according to Kant will create a fair and moral world.

The decision Harry Truman had to make regarding the nuclear bombing of Hiroshima and Nagasaki in the Second World War would have been wrong according to the Categorical Imperative. Truman argued that the bomb was the best option available to him to end the war (Rachels & Rachels, 2007: 120-129). A further idea of Kant that deserves mentioning is his later formulation of the Categorical Imperative namely: Act so that you treat humanity, whether in your own person or in that of another, always as an end and never as a means only. Kant believed that the value of humans is more than anything else seeing that humans have desires and goals and also intrinsic worth. This leads Kant to the conclusion that humans, as rational beings, should always be treated as an end in themselves. If one accepts these theories of Kant then science has lead the world astray.

Examples of this will be covered in the next section of this essay. (Rachels & Rachels, 2007: 120-129). Positive impact of science Science has provided us with some truths about the world that has been a mystery to our ancestors. Some of these truths have replaced old prejudices and superstitions.

These ideas has enlightened the human race and allowed us to live fuller, longer, saver lives and to become as Kitcher (2003: 3) says: “ more fully human”. The aim of this side of science is to provide the world with unbiased, but still morally based, knowledge. As explained above Kitcher uses a metaphor of science as an artisan. Some examples of this follow. The Human Genome Project is a good example where many countries have worked together and sponsored scientific enquiry into the molecular structure of DNA.

The goal of this project is to provide pivotal information for future biologists about human genes. These new findings can also advance biotechnology and better the human species and this aspect of the project interests’ economists and politicians. There could however also be a negative side to this argument which will be discussed in the next section. Our space exploration programs are also an example of the achievement of science. Scientific ideas have here been used to help man reach the frontiers of space. There are a immesurable amount of examples of the accomplishments of science though and most of these has positive and negative side- and after effects.

As one can see there are many cases where science has improved the happiness of people all across the world as the utilitarian’s would have wanted it. Negative impact of Science Poincar (2007: 12) believes that science cannot bring us happiness, but without science man will be unhappier. He feels that once humans have a taste of science we are unable to let it go. Aristotle said: “ We often know how cruel the truth is, and we wonder whether illusion is not more consoling, yea, even more bracing, for illusion it is which gives confidence.

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Science has the goal to provide truths of the world and once we know them we cannot take them back or as Poincaré say live without them. We are therefore stuck with science according to this idea and unfortunately not all scientific truths have had positive outcomes. Sometimes the greatest ideas can be misused such as that of Einstein when some of his ideas were used to destroy Hiroshima and Nagasaki with nuclear bombs. It is difficult even to say whether this can be classified as the wrong decision as we have seen in the section on morality. Also the application of science in negative ways is not necessarily a bad aspect of science, but misuse of technology. This aspect will be further discussed in the next section.

Still science can clearly also show us a monstrous side. The objective search for knowledge may and have led to atrocities in human history. Think of cases as the experiments in Nazi death camps which literally went as far as torturing people in the name of science. So called “ pure science” is science that exists outside the realm of political, moral and religious values. Many believe that the idea that science is bound by social and moral obligations is a farce (Kitcher 2003: 4-5). Another example of where science has damaged the planet is that of nuclear waste dumping.

Kristin Shrader-Frechette (1996) from the Notre Dame University has highlighted the damage nuclear waste has caused the planet in her essay: Science versus Educated Guessing: Risk Assessment, Nuclear Waste, and Public Policy. She explains the case of the dumping of nuclear waste in the Yucca Mountain region and the decisions surrounding this by the National Research Council (NRC) of the National Academy of Sciences. Shrader-Frechette has been studying the impact nuclear science has had socially and <https://assignbuster.com/the-value-of-science-is-science-predominantly-good-or-bad/>

what the ethical issues are behind these sciences (Longino, 1997: 176). The example stated above of the Human Genome Project will even have a negative side according to Kitcher (2003: 5-6). He believes that the advancement of genetics will enable some people to advance their genes and others too lag behind and be discriminated against for instance by insurance companies who will have their genetic information. Defense of science To list all the examples of the achievements of science and how it bettered or worsened the lives of humans would be superfluous and nearly impossible.

Still it is important to note that the world has had some dramatic changes owed to science. Some philosophers such as Kitcher (2003: 8) believe that there should be a divide between science and technology. Science provides us with information and the application of that information ensue through technology. It could therefore be argued that it is not science that is bad, but the application of scientific knowledge in bad ways. The Nazi's example escapes this defense, but in that specific case one can argue that science has not been bound by morality and should be. Conclusion There are clearly more to the question of whether science is predominantly good or bad than weighing the positive and negative outcomes of science against each other.

Science has been misused in the past and the world has felt the effects of this. This essay agrees with Poincar in his view that once we have started to unlock the secrets of the world using science and felt the power it holds we cannot return to a world without it. People are today living longer. Many diseases have been overcome; humans are reaching targets never before

imagined. There have been many negative repercussions as well as we have seen. Still this essay has an optimistic outlook on science.

There are abusers of most things in this world and science has not escaped the grasps of misuse through the years. Institutes such as the National Academy of Science helps to keep science on a moral responsive path and thereby underpins the beast that could emerge if “ pure” science were allowed free reigns. We should value science for the sake of science and not use it as a means to an end, but as an end in itself. This line of thought follows the Kantian Categorical Imperative. This end is a better understanding of our world and this essay believes that science is working towards this end. Therefore the answer to the question of whether science is predominantly good or bad is that science is predominantly good.

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