

Determinism vs Free Will – The Debate with Profound Implications

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Introduction to the Debate

Does everything in our world including ourselves have a determined future? Or are we living in a random reality governed by the virtue of chance? The topic of determinism vs free will is one of the most discussed among scientists, philosophers, and thinkers. It is a hot debate, indeed, with its roots going as far back in time as Ancient Greece and the Roman Empire with their prominent philosophers and religious leaders taking both sides in the discussion. However, lately, the science guys have also joined the discourse by bringing in their cutting-edge theories and discoveries.

In this essay, I will expose the reader to the debate by providing the most stunning arguments from the fields of neuroscience and quantum mechanics, and then round off by discussing their psychological and moral implications.

Quantum Mechanics and Free Will

Quantum mechanics or quantum theory is a separate branch of physics that works with the tiniest of objects and various strength energy forces in our universe – atomic and subatomic particles and interactions between them. It emerged as a response to the limitations of classical physics that is only capable of explaining large celestial objects, such as planets and stars, and any physical entities that we observe on our planet. It is a relatively new field of science, which emerged in the 20th century thanks to the efforts of Max Planck, Albert Einstein, Niels Bohr, Werner Heisenberg, and other prominent figures.

The key point about quantum mechanics in connection to our topic – it strongly supports the idea of free will, since the behavior of subatomic particles is impossible to predict, and oftentimes scientists cannot even determine if it is a particle, an energy wave, or both. On the tiniest of scales, objects behave randomly, it is possible to determine the speed or position of an electron, but not both properties at the same time. The famous Schrödinger's cat can be alive and dead at the same time, and we cannot tell for sure

unless we open the box. The same is true with the Double-Slit Experiment – a photon is both a wave and a particle until we look at it.

All in all, quantum theory has delivered a big blow to the deterministic approach as in the Mechanical Universe of the classic, Newtonian physics.

Neuroscience and Determinism

The human brain is widely recognized as the most complex object in the universe. Scientists have long tried to unravel its secrets and the way it works in general.

Meet Neuroscience – a relatively young, but highly promising field of science that is deliberately looking at how our brains and the nervous systems work. In doing so, it has achieved stunning success – neuroscientists have recently discovered that many elements of complex human behavior (such as emotions, speech, decision-making, and motivation) are closely tied to the physical processes in our brains.

Furthermore, the enhanced power of computer-based brain scanning devices has been able to let scientists look much deeper into the structure of the brain, calculate the exact number of neurons making up certain key areas, such as the neocortex, and discover particular regions of synapses and their clusters in the neocortex that are responsible for the known types of human behavior.

Another example of a microscale science that poses a threat to free will is genetics. In recent decades, genetics specialists have been able to determine the exact types of genes responsible for risky and aggressive behavior. It turns out that certain people are more likely to commit a crime or cause harm to other people and their property than others. Simply because they were born that way – with violence genes instead of peace-making genes.

All in all, a whole range of cutting-edge discoveries within the newly born scientific fields, points towards the deterministic nature of the world we are living in.

Psychological and Moral Implications

The standoff between determinism and free will touches upon various fields and aspects of human lives, including law, ethics and morality, religion, science, and psychology, to name a few. If only we would ever be able to find the truth, I have little doubt that the consequences and implications of that discovery will have a profound impact on the way we live.

In a number of sci-fi movies, potential criminals get identified and arrested even before they commit a crime. This is a rough, but quite scary picture of the future in which determinism would win over free will. The system of justice would have to be rebuilt taking the deterministic nature of our lives into account, while implications for our moral and ethical values will be far more profound.

Religion, for example, is widely based on the belief that everyone can become closer to God by doing good things to other people and avoiding wrong-doing. The idea of sin and punishment is based on the concept of free will, as well. Think of it, and you'll see how beneficial the concept of free will is and always was for the well-being of our society and individuals.

Personal Reflections

To be honest, this fight would better be won by free will, as freedom of choice is the optimal way our society and we humans work and live. The opportunity to choose between different life options and development paths gives us the reason to act and to achieve results, to strive to become better versions of ourselves. The consequences of the opposite outcome – when determinism prevails, would be catastrophic.

My gut feeling, however, tells me that this world is indeed predetermined, that things happen for a reason, and that certain defined parameters always influence the outcomes. Luckily for us, this is a very complex system, and we don't have the computational power, at least yet, to see through our future. One thing is to predict what

will happen in the next minute or hour, while it has to be more difficult to know the events of the next year, or a decade from now.

So, as long as we are still far away from that computational God-like superpower, humanity has no choice but to accept the existence of free will and enjoy life as always.