

Advancements in Technology May Profoundly Change Our Views of the World

What technology does to us is undoubtedly an important and timely question, but, I think, we should also discuss the equally important question of what technology (through fundamental physics, for example) does to our views of the world.

In theology and in religion in general the ultimate judge is God. In science, particularly in physics, the ultimate judge is Experiment. And the crucial experiments, especially in the last 100 years, which confirmed the predictions of the theory of relativity and quantum mechanics - the two greatest revolutions in physics - became possible due to major advancements in technology.

As our views of the world were profoundly affected by these two discoveries in fundamental physics, it is clear that advancements in technology have almost direct implications for our views of the world.

While the changes due to quantum mechanics do not appear to have any relevance for theology, the implications of the theory of relativity directly affect core issues in theology, e.g., the biblical accounts of creation and predestination.

In my 10 minutes I can only briefly outline the greatest intellectual challenge that humankind has ever faced, which is directly related to predestination. It came from the theory of relativity or, more precisely, from spacetime physics and specific advancements in technology which made it possible to prove experimentally the kinematic predictions of spacetime physics - the relativistic effects of time dilation, length contraction and the twin paradox effect.

In fact, this intellectual challenge originated from the discovery of the spacetime structure of the world by Hermann Minkowski, Einstein's mathematics professor, who in 1908 successfully decoded the profound physical message hidden in the failure of all experiments (captured in Galileo's principle of relativity and the Michelson-Morley experiment) to detect uniform motion in the absolute three-dimensional space. Minkowski demonstrated that those experiments failed because there was no such absolute (that is a single) space in Nature. The true higher reality turned out to be a four-dimensional world with time as the fourth dimension, which can be described in ordinary language as containing an infinite number of three-dimensional spaces. In this frozen, forever-given four-dimensional world the entire histories in time of physical bodies, including our human bodies, are forever-given four-dimensional worldtubes. Perhaps the best visualization of this four-dimensional world is the film strip of an old movie. On the screen we see what appears to be genuine actions - how the actors in the movie perform their roles and it appears that they have free will. But on the film strip the whole story of the movie is entirely given at once and the roles of the actors are completely predetermined.

Hermann Minkowski particularly emphasized it that the strength of the new radical views of space and time - showing that space and time are unified in a forever-given four-dimensional world, which we now call spacetime - originated from experimental physics. And indeed none of the experiments that confirmed the kinematic relativistic effects would be possible if the world were NOT four-dimensional.

The Global Positioning System (GPS), for example, would not work if the world were not four-dimensional. Now, I believe, you see clearly how technology - even through the single example of GPS - virtually directly changes our worldview: the very fact that GPS works demonstrates that the world is four-dimensional; it should be emphasized as strongly as possible that GPS would not work in a three-dimensional world.

Now, I hope, you understand the essence of what I called the greatest intellectual challenge that humankind has ever faced - it is an experimental fact that behind the perceived by us three-dimensional world lies a higher (true) reality, which is a four-dimensional world, which means that our lives are predetermined and we do not have free will.

This shocking result seems to self-evidently contradict what we all perceive. It appears that two facts contradict each other. The first fact is the experimental verification that the physical world is four-dimensional, which in ordinary language means that past, present and future are given at once in this higher reality. The second fact is inter-subjective - we are all aware of ourselves and of the world only at the constantly changing present moment.

In the late twenties of the last century (about twenty years after Minkowski's discovery), Hermann Weyl tried to reconcile these two facts and conjectured that it is the consciousness which creates the illusion that time flows and that a three-dimensional world constantly changes: "The objective world merely exists, it does not happen; as a whole it has no history. Only before the eye of the consciousness climbing up in the world line of my body, a section of this world "comes to life" and moves past it as a spatial image engaged in temporal transformation."

What makes this situation even more challenging and unprecedented is that for over a 100 years most physicists and philosophers of science have been behaving as if nothing happened. Their most frequent argument is that the concept of spacetime is just a mathematical space, which does not represent a real four-dimensional world. But, this "explanation" completely and inexplicably ignores the fact that experiments would be impossible if the world were not four-dimensional. However, science does not work by ignoring challenging and counter-intuitive facts and arguments. Science works and advances by facing and addressing particularly facts and arguments, which appear to question the accepted worldview.

I think that in this really unprecedented situation the Church could play a constructive role by organizing conferences and workshops where this challenge can be relevantly faced and analyzed.

Σας ευχαριστώ πολύ για την προσοχή σας.