

# The relationship between false hopes and misleading expectations in the progress of science

## Abstract

With the growing scientific knowledge, we are beginning to understand that several phenomena which used to be explained by non physical entities (e.g., demonic possessions) are being logically and systematically explained through the scientific method (e.g., epileptic seizures). The development of the scientific method strongly contrasts with centuries of false beliefs and esoteric ideas which had no logic or were irrational. Nowadays, it is undeniable that science helped increase life expectancy and life quality. Neuroscience is now contemplating problems that used to belong to the philosophical field (e.g. consciousness). Nevertheless, the problem of death makes some scientist exceptional to the principles of science because that would imply for example to accept death as the end of the consciousness. With the apprehension that we are no more than an extraordinary unique combination of matter and energy, it follows that when we die, matter and energy reorganize in a different way and we ceased to exist as individuals. In this article, I attempt to explain that many pseudo scientific approaches trying to unify science with religion are actually based on emotional rather than rational thinking. I propose that, even though accepting the end of our consciousness is something hard to manage, it only have but positive effects in our quality of life and also benefits science by focusing all the efforts of intelligent and capable people into something that might have real effects in our present life and future generations to come.

**Keywords:** death, consciousness, science, pseudoscience, religion

Volume 11 Issue 4 - 2020

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**Received:** July 03, 2020 | **Published:** July 15, 2020

## Introduction

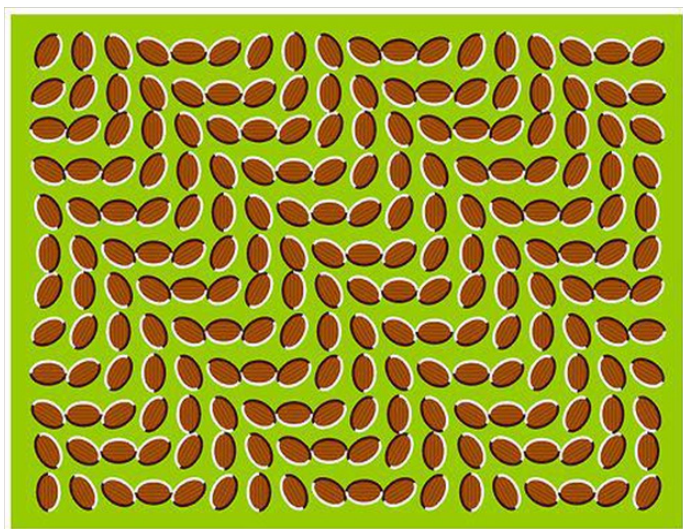
Curiosity is an intrinsic characteristic of every human being. We are always wondering how things works and why events happens. This need for understanding our environment can be explained from the characteristics of our nervous system (NS). The NS was developed through thousands of years of evolution to solve the problem of perceiving stimuli from the environment in order to be able to make correct decisions to live longer and perpetuate the species.<sup>1</sup> Therefore, the NS attempts to understand and interpret what happens around us at all times. If there is no obvious explanation to what the NS perceives, then, the NS creates a plausible explanation and believes in it.<sup>2</sup> Best examples of this could be observed at the level of the visual system. We believe that everything we see in is in high resolution and that perfect resolution is maintained even when we make a saccade. The reality is that only a small area of our visual field is perceived in full resolution and, when we make a saccade, the images between saccades are “edited” by the brain and are not consciously perceived by us. Creating the illusion of a perfect high resolution visual perception (we even have a blind spot in our retina in where we cannot see at all). At a higher level of processing, blurred or dark images are usually completed by the visual system in the brain so we can “create” and believe images that aren’t actually there.<sup>3</sup> We can cite all the classical visual illusions known (Figure 1).

As a result, every inexplicable event is usually given an immediately response to satisfy the need of finding a “why”. Another example of the need of control to avoid worry and stress comes from the famous neuroscientist Joseph Brady in where it is shown that an illusion of control can easy level of stress.<sup>4</sup> Before the creation of the scientific method, those responses to the unknown were feeble and derisory explanations which, nowadays, seems laughable but they were strongly believed as true back then. We now know that

hearing voices from angels could be a form of schizophrenia due to a neurochemical disbalance in the brain. Seeing ghosts could be explained from hallucinations regarding the activity of cells from the visual system to the alteration of neurotransmission in more complex visual processing regions (and of course, simply lie about it as a form of scam). Nevertheless, one big problem remains above all. What happens when we die? The advanced level of science has the answer to this. Nothing. This conclusion is the only one possible when we apply the scientific method. The scientific method consist of making hypotheses, deriving predictions from them as logical consequences, and then carrying out experiments or empirical observations to confirm or not those predictions. According to this method, when we die, we finish our existence and go back to the nothing from where we emerged. This is sad and terrible and hard to accept, but it is the true. And if you try to deny it, you should not go to hospitals when you get sick or fly by airplane or eat healthy or disinfect a wound because that knowledge is based on science as almost all the things that make your life comfortable.

## Consciousness, the holy grail of eternity

The subject of consciousness was examined by philosophers through the past centuries and only recently has been a subject of a scientific study through neuroscience.<sup>5</sup> For some people, consciousness refers to our long-term memories, to others, consciousness is related to personality (e.g., who I am here and now). Some people believe that they are conscious when they feel a texture or perceive a color or when they reflect about something. Supposedly, since consciousness cannot be grasping by the apparatus used by scientists, then it should be something of divine intervention that requires some “extra” factor to be explained. Unfortunately for many people, the latter assumption is incorrect. Consciousness can be explained by the neural activity produced at a particular moment by the NS.<sup>6</sup>



**Figure 1** The right combination of colors shapes and light can create a false sense of depth perception because they confuse the visual system by giving ambiguous information to it. Our eyes only produce part of our vision, the brain creates the rest.

This assumption is supported by hundreds of thousands of patients who suffered from brain damage which altered their personality, memories, perception and everything we can associate to consciousness. Visual rivalry has also been extensively studied through neurophysiologic techniques,<sup>7</sup> showing that a group of neurons fire as we become conscious of something. Therefore, consciousness can be approached through the scientific method. For example, one of many hypotheses points to the fact that there could be a group of “neurons of consciousness” distributed along the cerebral cortex and associated systems, like the thalamus and the basal ganglia.<sup>8</sup> These neurons could be characterized by a unique combination of molecular, biophysics and pharmacological properties. It is also possible that all the cortical neurons are able to participate in the representation of a particular stimulus at a specific time. Finding the exact neural correlates of consciousness and all the neural systems associated with it is one of the actual challenges of neuroscience. Nevertheless, the first and most important step has been taken. We were able to position the problem of consciousness in a physical system (the NS) which can be studied by means of the scientific method.

### The problem of death in science

Once we know that our memories, our ability to differentiate red color from blue color, our dreams, thoughts and personality, are a product of the NS, we face the following problem: When those neurons, which support consciousness, stop working and disintegrate, our consciousness will too. And we, as human beings, cannot accept that fact without a little fight. Then, we use some unanswered questions in science to explain what we do not understand. Some scientist for example, argue that what we really know about reality it is just a little fraction of the whole picture and that there is so much to discover regarding the forces ruling all the particles in the universe. The idea that there are many things we still can't explain is correct. But we surely know that the existence of our consciousness requires impossible combinations of molecules, events and characteristics that are only possible when our NS is intact and alive, no matter how much

mathematic you can use to tell different. If some sort of force remains active after the neurons are gone, that might be a reminiscence of what was there when dinosaurs inhabit the earth or when the universe was created. The atoms that form our body were there for billions of years before they combine in an extraordinary way to give birth to our consciousness, and those atoms are going to be there for much more after we are gone. But that doesn't mean our consciousness will be in the force that keep each atom stable. We have to accept that there are many things in the universe we cannot understand, but one is for sure, no one can survive its own death preserving his consciousness. We are our brain and, when our brain is gone, we are too.

### Social solutions to death and its impact on science

Life itself doesn't seem to have a purpose or meaning.<sup>9</sup> Common people usually wonders for the purpose of evolution. As if there were a supreme knowledge behind everything and we just simply don't grasp it yet. What facts show us is that there is no purpose. Things simple happen. There is not meaning in life, it simply happens. But with us, humans, is different. We create a meaning of our own. We are able to create that “magical meaning” through society. Society locates us as individuals in an specific space since we were born, and we are supposed to do things and think, believe and act according to predefined rules. That solution to the meaning of our life has two contradictory outcomes:

1. It limits our freedom and make us believe that everything has an explanations and a purpose.
2. It gives us a very strong sense and purpose to be alive. As long as we don't keep on thinking obsessively that we are going to die, we can manage to live a happy and fulfilling life.

The problem arises when some scientists do not realize they commune with all the same values, rituals, rules and believes that everyone else in society (besides the fact that, like every human being, they are afraid to die). And, therefore, they feel the need to do something about it. Then, many scientists let some of those artificial rules created by society to overcome them (nobody wants to die) and, as a result, they try to integrate those fantastic myths into the realm of science. One of those myths are the ones developed by fantastic theories (before the development of the scientific method) which were needed to explain disasters like flood, injustice, famine, war, but more importantly death. The most famous stories state that there is a powerful being that controls everything and decides each event in advance. Since it is a magical entity of sorts, we are connected to it through some magic within us. Several scientists are born and raised in an environment which is strongly influenced by these ideas. Is this environment the one that gives scientists a meaning in their lives (this is almost inevitable). Therefore, many scientists feel compelled to somehow fabricate a fantastic artificial theory (e.g., the existence of the soul), compatible with the scientific world by filling unknown gaps in the scientific theory (e.g. regarding quantum theories, etc.) with primitive and fantastic stories about the afterlife. This is known as *post-truth*. The term is increasingly present in the media and in 2016 was declared the word of the year by the Oxford Dictionary. It is an adjective used to describe “circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal beliefs” or according to the Cambridge Dictionary “a situation in which people are more likely to accept an argument based on their emotions and beliefs, rather than one based on facts”. Scientist might not do this on purpose, but instead, they try to bring coherence

to two opposed worlds. A world which tell them how things really are (science) and the world of their parents, friends and the afterlife. As a result, those researchers forcibly insert extravagant explanations to combine magic with science. This attempt looks like someone who found a hole of a size of a pin in a concrete wall and tries to pass a whale through it. By attempting this, those pseudo scientists achieve social recognition (e.g memberships, awards, etc.) since those stories are now supposedly closer to be true. Because of this, humanity faces two main problems:

1. By reinforcing old ideas of magical souls and fantastic worlds, we condition our freedom. We must behave in a way to harmonize with that magical force that controls everything.
2. Many intelligent people who can actually contribute to a practical and useful knowledge, waste their efforts in deepenth caves without end.

### What to do with this?

It is logic to realize that there are a huge number of events that we don't understand and that their explanation would involve ideas that we cannot conceive yet (and maybe never will). But it is a huge mistake to believe that more primitive societies were smart enough to foresee things that thousands of years later were found to be true. Mostly, since science have proved wrong every single supposition or believes that those previous societies had, regarding the world and events that surround us (since the existence of gravity, the heliocentric theory, evolution to the existence of bacteria and germs). Therefore, the main purpose of this article is to raise awareness of the importance of mixing individual personal ideologies with the scientific world. This attempt could be dangerous since people who is not familiar with science will get confused and might believe that magical thinking could get scientific status some day. As hard as it could be, we have to be brave enough to understand that, from a scientific point of view, life after death is not possible at least in the way we (humans) want it to be. This is, our consciousness and idea of self will be destroyed once and forever and there is nothing we can do about it, not even create very clever lies to make it more believable. Of course, this does not mean that we must think about death all the time or those we cannot believe there are forces beyond our understanding that might rule the universe, but those ideas must be separated from the scientific world into a more private one.<sup>10-15</sup>

### Funding

None.

### Acknowledgments

None.

### Conflict of interest

The author declares that there is no conflict of interest.

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