# Resolved: Belief in the supernatural is incompatible with belief in science.

My first undergraduate degree is in history. For as long as I can remember, I have been fascinated by all manners of historical events and the stories and narratives that follow. Although not a scientist, I believe in validation and logic. I am also fascinated by ghost stories. My YouTube is filled with “Nukes Top 5” videos. I love content creators who explore historical sites looking for the paranormal. I also believe in a higher power. Can these three things—my religion, my love of the unexplained, and my belief in rationality and logic—co-exist, or am I doomed to exist in a paradox? This is the core of the first topic option for the 2023-2024 Big Questions season.

To analyze this resolution, we first need to break down the terms that are to be weighed or compared. The imagery of the supernatural draws up visions of ghosts, aliens, the unexplained, and the theme from the *X-Files*. The above list (minus the *X-Files*) would qualify as “supernatural.” However, the exclusivity of the term is not limited to the paranormal, but rather to the unexplained. The APA Dictionary of Psychology would define the supernatural as phenomenon that are beyond the scope of scientific understanding or natural explanations. To most observers, and the casual definition, this would include such things as ghosts, spirits, magic, miracles, and psychic phenomena. Since the foundation for what is “supernatural” is constrained to what we can explain through scientific knowledge and understanding, things like higher powers or gods, deities, and other divine beings and powers can also qualify as such. This is validated by Life Science in October 2015 where they discuss the evolution of religion stemming from the supernatural. Furthermore, Pope Francis furthered in that same year that belief in the supernatural typically relies on personal experiences, cultural or religious beliefs, anecdotal evidence, or faith as an origin point.

Moving on to the concept of “science,” astrophysics and Director of the Hayden Planetarium Dr. Neil Degrasse Tyson has stated that science can loosely be defined as a systematic and organized approach to acquiring knowledge about the natural world. This is most often accomplished through observation, experimentation, and analysis involving the formulation of testable hypotheses, the collection and interpretation of empirical evidence, and the development of theories and models to explain and predict phenomena.

Science aims to uncover the foundational principles and laws that govern the universe and uses rigorous methods to ensure the objectivity, reproducibility, and reliability of findings. Most people when asked would define the fields of “science” as physics, chemistry, biology, astronomy, geology, and many others, each with its own specific methodologies and areas of study. The core tenant and goal of “science” is to advance our understanding of the world, driving technological innovation, and informing evidence-based decision-making.

Comparing the two, they at first seem incompatible. A lay person might object and say that to believe in logic, rationality, and data collection can’t exist in a world where a person also believes in something that is undefined, unexplained, and exists without data. In the end, however, are they really all that different? Many great scientists and those of logical minds have believed in both a higher power and in science. Once again, going back to Dr. Tyson, science also is about searching for the unexplained. It seeks to fill in the blanks and provide further clarity around the natural world. The unknown drives us to further develop our techniques and seek the truth. One can say that everything is unexplained, and thus supernatural, until it is discovered and explained. In short, one could argue that the belief in the supernatural pushes scientific discovery forward.

Meanwhile, opponents state that scientific discovery and explanation relies on empirical evidence and repeatable testing. The supernatural quite often lacks such evidence and can be difficult to quantify or test. Look at popular ghost hunting shows such as *Ghost Adventures* or The Watcher Network’s *Ghost Files*. Taken at face value, they often provide a plethora of undisputed paranormal evidence. Under closer examination, it is important to acknowledge that they are first and foremost an entertainment product. They are funded through sponsors and ads. Their equipment is based off theories that someone believes to work and are tested not to disprove a theory but to validate one. For instance, when these shows say that something like a spirit box can detect the electronic communications of ghosts or spirits, they provide lackluster testing and rigor. To test most scientific theories, one would create a control and test the device in several scenarios to see if anything speaks to them. If it only speaks at the haunted location, then it would show paranormal activity. However, in these shows, they bring it to the haunted location, and when it shows activity, this validates their idea that it must be haunted.

One item that might come up in this debate is the question of “god.” The question of whether God or a higher power is considered “supernatural” or a part of depends on the specific definition and understanding of the term "supernatural" being used. Different people and philosophical traditions may interpret and define the concept differently.

From a theological viewpoint, many religious beliefs assert that God or a higher being is supernatural. Many religions describe a god as a transcendent and omnipotent being who exists beyond the boundaries of the natural world and possesses attributes and powers that surpass the limitations of the physical realm. To these religions, God is the ultimate source of all creation, including the natural order. You can’t test for a higher power because the higher power is essentially everywhere, and thus there would be no way to find a stable control or an area where the higher power isn’t present.

The concept of a higher power and the understanding of the supernatural will change depending on religious and philosophical traditions. Some religious perspectives may view God or this power as immanent, meaning that they are present within and actively involved in the natural world, while others may emphasize God's transcendence and separation from the natural realm. Going further, many scientists in the late 16th to early 19th centuries were Deists. They believed there was a God, but that they were as a watchmaker. They would set the universe in motion only to step back and watch their creation as it grinds on like the gears of a clock.

So, am I stuck in limbo? This debate comes down to the core question of whether all things can be measured, charted, observed, and quantified or whether there are some things that just exist without explanation. Can you believe in ghosts and God while working at a super collider? This topic offers a unique chance for students to discover what it means to “discover.” Is the work of a scientist who believes to this day that their childhood house is haunted tainted? You be the judge.

# Resolved: Falsifiability is the best standard for knowledge.

The year that I started debate, I also participated in my eighth grade science fair. My teacher taught us the scientific method, my partner and I created a hypothesis after taking notes over things that we found interesting, designed an experiment, and ran tests to see if our hypothesis was true. We presented our findings at the science fair and got an “A.” We both felt awesome. Here we were, aged 14, solving the mysteries of the universe. Now I’m 37 and, looking back, we likely only proved that two 14-year-old kids should not be allowed to have access to car batteries and a welder. Later that year, I started debate. I was taught the concept of “burden of proof.” The affirmative side must prove the resolution correct beyond a reasonable doubt, and the negative must provide the doubt. In that year, and ever since, I have learned one thing about debate. There rarely is a singular and known “truth.” Both sides can be right and wrong at the same time. How do we reconcile the two methods of thinking? This is the core of the second topic option for the 2023-2024 Big Questions season.

To analyze this resolution, we first need to break down the terms that are to be weighed or compared. To start with, let’s look at how we falsify things. The principle of falsifiability is an important concept in scientific understanding, particularly in the field of empirical and data driven sciences. The ability to test a theory to determine an outcome has existed for as long as humans have existed. However, this would be revolutionized by philosopher Karl Popper as a criterion for distinguishing scientific theories from non-scientific ones. According to Popper, a scientific theory must be capable of being tested and falsified through empirical observations or experiments. For example, the theory that gravity pulls things to the center of an object in space can be tested. The idea that Diet Coke is the best soft drink in the world is not scientific. It could be quantified in numbers, but the variable that would be tested for is, in itself, variable, as people’s tastes differ. This is an example of a survey not a theory.

In the context of scientific understanding, falsifiability serves to establish the validity of theories. Should those tests fail to prove their hypothesis wrong, their theory is validated. The current scientific model applies a rigorous and controlled set of tests to a hypothesis or theory to allow scientists to gather evidence that either supports or refutes that hypothesis. This the cornerstone of discovery and modern civilization. If a theory consistently withstands attempts at falsification and also aligns with empirical observations, it gains credibility and is considered more robust. Falsifiability is a crucial criterion for distinguishing scientific theories from non-scientific ones. In the scientific method, theories and hypotheses are formulated based on observations and previous knowledge. It is important to note that testing often occurs hundreds, if not thousands, of times. One single observation does not prove something true or false. If the empirical evidence consistently supports the claim, the theory can be said to true. If the evidence contradicts the claim, the theory may be revised or rejected.

In contrast, what do we have if not for the ability to demonstrate something beyond a reasonable doubt? We have faith.

And faith is complex. It has various interpretations and meanings depending on the cultural, religious, or personal context in which it is discussed. Taken from a religious definition, faith is the belief that a higher power is guiding events for a positive outcome. In a looser definition, faith refers to a strong belief or trust in something or someone, often without requiring empirical evidence or proof. In his book, *Blink*, psychotherapist Malcolm Gladwell states that sometimes you just have a feeling that something is right or that something will happen. Despite everything that is going on around you, you somehow know that it will happen. He refers to this as the “blink moment.” He also has referred to this as relying on faith.

Faith has many forms such as religious or spiritual as well as faith in relationships, institutions, or personal convictions. It often involves a deeply held conviction that goes beyond rational or logical reasoning. This is often the case in sporting events when the underdog upsets the ranked team. In 2007, Appalachian State went against the number five ranked Michigan Wolverines in the opening college football game of the season. Appalachian State would upset Michigan on the last play of the game. In his interview by ESPN post game, Appalachian State coach Jerry Moore stated that he had faith in his team, even as the minutes ticked down.

Faith is often subjective. It depends on personal interpretation, intuition, world knowledge, and a sense of trust or confidence in something or someone. For instance, for an eight-year-old, they saw it started snowing and they had faith that there would be a snow day. To the parents who saw the blizzard warning on the weather app, it was not faith.

Because of the nature of faith, it is impossible to falsify faith itself. Specific claims or beliefs associated with faith may be subject to falsification, but someone’s belief that something will happen or that something guides them cannot. For example, several televangelists sold “cures” for COVID-19 during the pandemic. Although their belief that a higher power had or could provide a cure, to market the items and elixirs that they were selling as “cures” with little or no scientific backing is a criminal offense.

Looking back at 14-year-old me, at the time, I was breaking new ground into the study of electricity, metal conductivity, and how to put out fires before your parents found out that the project had caught fire. After all, I did get an “A.” However, did I really deserve that grade? My method was less than scientific. If I were to do this again today, I would do things much differently. However, back in 2000, I had faith that I’d be okay.