

Science and Religion

Workshop 1: Definitions

What is Science?

Q1. Before reading further, in your group come up with a working definition of 'science'.

Science Council

- "Science is the pursuit and application of knowledge and understanding of the natural and social world following a systematic methodology based on evidence."

"Scientific methodology includes the following:

Objective observation: Measurement and data (possibly although not necessarily using mathematics as a tool)

Evidence

Experiment and/or observation as benchmarks for testing hypotheses

Induction: reasoning to establish general rules or conclusions drawn from facts or examples

Repetition

Critical analysis

Verification and testing: critical exposure to scrutiny, peer review and assessment"

'Science Made Simple' Website

How Do We Define Science?

- According to Webster's New Collegiate Dictionary, the definition of science is: "knowledge attained through study or practice," or "knowledge covering general truths of the operation of general laws, esp. as obtained and tested through scientific method [and] concerned with the physical world."

What Does That Really Mean?

- Science refers to a system of acquiring knowledge. This system uses observation and experimentation to describe and explain natural phenomena.
- The term science also refers to the organized body of knowledge people have gained using that system.
- Less formally, the word science often describes any systematic field of study or the knowledge gained from it."

What Is the Purpose of Science?

- Perhaps the most general description is that the purpose of science is to produce useful models of reality.
- Most scientific investigations use some form of the scientific method.

- Science as defined above is sometimes called pure science to differentiate it from applied science, which is the application of research to human needs.”

Q2. How does your group’s definition compare with that of the two definitions above?

Understanding and Using the Scientific Method

- The Scientific Method is a process used to design and perform experiments. It's important to minimise experimental errors and bias and increase confidence in the accuracy of your results.
- The Scientific Method is a logical and rational order of steps by which scientists come to conclusions about the world around them. The Scientific Method helps to organise thoughts and procedures so that scientists can be confident in the answers they find.

Steps of the Scientific Method

- Observation/Research
- Hypothesis
- Prediction
- Experimentation
- Conclusion

OBSERVATION

- This step could also be called "research." It is the first stage in understanding the problem.
- After you decide on topic, and narrow it down to a specific question, you will need to research everything that you can find about it. You can collect information from your own experiences, books, the internet, or even smaller "unofficial" experiments.

HYPOTHESIS

- The next stage of the Scientific Method is known as the "hypothesis." This word basically means "a possible solution to a problem, based on knowledge and research."
- The hypothesis is a simple statement that defines what you think the outcome of your experiment will be.
- All of the first stage of the Scientific Method -- the observation, or research stage -- is designed to help you express a problem in a single question ("Does the amount of sunlight in a garden affect tomato size?") and propose an answer to the question based on what you know. The experiment that you will design is done to test the hypothesis.

PREDICTION

- The hypothesis is your general statement of how you think the scientific phenomenon in question works.

- Your prediction lets you get specific -- how will you demonstrate that your hypothesis is true? The experiment that you will design is done to test the prediction.
- An important thing to remember during this stage of the scientific method is that once you develop a hypothesis and a prediction, you shouldn't change it, even if the results of your experiment show that you were wrong.
- An incorrect prediction does NOT mean that you "failed." It just means that the experiment brought some new facts to light that maybe you hadn't thought about before.

EXPERIMENT

- This is the part of the scientific method that tests your hypothesis. An experiment is a tool that you design to find out if your ideas about your topic are right or wrong.
- It is absolutely necessary to design an experiment that will accurately test your hypothesis. The experiment is the most important part of the scientific method. It's the logical process that lets scientists learn about the world.

CONCLUSION

- The final step in the scientific method is the conclusion. This is a summary of the experiment's results, and how those results match up to your hypothesis.
- You have two options for your conclusions: based on your results, either:
- YOU CAN REJECT the hypothesis, or
- YOU CANNOT REJECT the hypothesis.
- This is an important point!
- You cannot PROVE the hypothesis with a single experiment, because there is a chance that you made an error somewhere along the way.
- What you can say is that your results SUPPORT the original hypothesis.
- If your original hypothesis didn't match up with the final results of your experiment, don't change the hypothesis.
- Instead, try to explain what might have been wrong with your original hypothesis. What information were you missing when you made your prediction? What are the possible reasons the hypothesis and experimental results didn't match up?
- A science experiment isn't a failure simply because does not agree with your hypothesis. Many important scientific discoveries were made as a result of experiments gone wrong!
- A science experiment is only a failure if its design is flawed. A flawed experiment is one that (1) doesn't keep its variables under control, and (2) doesn't sufficiently answer the question that you asked of it.

Q3. What do you see as being the strengths and weaknesses of the scientific method?

What is Religion?

Q4. Before reading further, in your group come up with a working definition of 'religion'.

Britannica.com

- "Religion, human beings' relation to that which they regard as holy, sacred, absolute, spiritual, divine, or worthy of especial reverence. It is also commonly regarded as consisting of the way people deal with ultimate concerns about their lives and their fate after death. In many traditions, this relation and these concerns are expressed in terms of one's relationship with or attitude toward gods or spirits; in more humanistic or naturalistic forms of religion, they are expressed in terms of one's relationship with or attitudes toward the broader human community or the natural world. In many religions, texts are deemed to have scriptural status, and people are esteemed to be invested with spiritual or moral authority. Believers and worshippers participate in and are often enjoined to perform devotional or contemplative practices such as prayer, meditation, or particular rituals. Worship, moral conduct, right belief, and participation in religious institutions are among the constituent elements of the religious life."

BBC.co.uk

- "Religion can be explained as a set of beliefs concerning the cause, nature, and purpose of the universe, especially when considered as the creation of a superhuman agency or agencies, usually involving devotional and ritual observances, and often containing a moral code governing the conduct of human affairs."

Learnreligions.com (Cline, Austin. "What Is Religion?" Learn Religions, Apr. 17, 2019, learnreligions.com/what-is-religion-250672.)

- "Many say the etymology of religion lies with the Latin word religare, which means "to tie, to bind." This seems to be favoured on the assumption that it helps explain the power religion has to bind a person to a community, culture, course of action, ideology, etc. The Oxford English Dictionary points out, though, that the etymology of the word is doubtful. Earlier writers like Cicero connected the term with relegere, which means "to read over again" (perhaps to emphasize the ritualistic nature of religions?).

Functional vs. Substantive Definitions of Religion

- Many scholarly and academic attempts to define or describe religion can be classified into one of two types: functional or substantive. Each represents a very distinct perspective on the nature of the function of religion. Although it is possible for a person to accept both types as valid, in reality, most people will tend to focus on one type to the exclusion of the other.

Substantive Definitions of Religion

- The type a person focuses on can tell a lot about what he thinks of religion and how he perceives religion in human life. For those who focus upon

substantive or essentialist definitions, religion is all about content: if you believe certain types of things you have a religion while if you don't believe them, you don't have a religion. Examples include belief in gods, belief in spirits, or belief in something known as "the sacred."

- Accepting a substantive definition of religion means looking at religion as simply a type of philosophy, a system of bizarre beliefs, or perhaps just a primitive understanding of nature and reality. From the substantive or essentialist perspective, religion originated and survived as a speculative enterprise which is all about trying to understand ourselves or our world and has nothing to do with our social or psychological lives.

Functional Definitions of Religion

- For those who focus on functionalist definitions, religion is all about what it does: if your belief system plays some particular role either in your social life, in your society, or in your psychological life, then it is a religion; otherwise, it's something else (like philosophy). Examples of functionalist definitions include describing religion as something which binds together a community or which alleviates a person's fear of mortality.
- Accepting such functionalist descriptions results in a radically different understanding of the origin and nature of religion when compared to substantive definitions. From the functionalist perspective, religion doesn't exist to explain our world but rather to help us survive in the world, whether by binding us together socially or by supporting us psychologically and emotionally. Rituals, for example, exist to bring us all together as a unit or to preserve our sanity in a chaotic world.
- The definition of religion used on this site doesn't focus on either functionalist or essentialist perspective of religion; instead, it attempts to incorporate both the types of beliefs and the types of functions which religion often has. So why spend so much time explaining and discussing these types of definitions?
- Even if we don't use a specifically functionalist or essentialist definition here, it remains true that such definitions can offer interesting ways to look at religion, causing us to focus on some aspect which we might have otherwise ignored. It is necessary to understand why each is valid to better understand why neither is superior to the other. Finally, because so many books on religion tend to prefer one type of definition over another, understanding what they are can provide a clearer view of authors' biases and assumptions.

Problematic Definitions of Religion

- Definitions of religion tend to suffer from one of two problems: they are either too narrow and exclude many belief systems which most agree are religious, or they are too vague and ambiguous, suggesting that just about anything and everything is a religion. Because it's so easy to fall into one problem in the effort to avoid the other, debates about the nature of religion will probably never cease.
- A good example of a narrow definition being too narrow is the common attempt to define "religion" as "belief in God," effectively excluding polytheistic

religions and atheistic religions while including theists who have no religious belief system. We see this problem most often among those who assume that the strict monotheistic nature of western religions they are most familiar with must somehow be a necessary characteristic of religion generally. It's rare to see this mistake being made by scholars, at least anymore.

- A good example of a vague definition is the tendency to define religion as "worldview" — but how can every worldview qualify as a religion? It would be ridiculous to think that every belief system or ideology is even just religious, never mind a full-fledged religion, but that's the consequence of how some try to use the term.
- Some have argued that religion isn't hard to define and the plethora of conflicting definitions is evidence of how easy it really is. The real problem, according to this position, lies in finding a definition that is empirically useful and empirically testable - and it's certainly true that so many of the bad definitions would be quickly abandoned if proponents just put in a bit of work to test them.
- The Encyclopedia of Philosophy lists traits of religions rather than declaring religion to be one thing or another, arguing that the more markers present in a belief system, the more "religious like" it is:
 - Belief in supernatural beings.
 - A distinction between sacred and profane objects.
 - Ritual acts focused on sacred objects.
 - A moral code believed to be sanctioned by the gods.
 - Characteristically religious feelings (awe, sense of mystery, sense of guilt, adoration), which tend to be aroused in the presence of sacred objects and during the practice of ritual, and which are connected in idea with the gods.
 - Prayer and other forms of communication with gods.
 - A world view, or a general picture of the world as a whole and the place of the individual therein. This picture contains some specification of an overall purpose or point of the world and an indication of how the individual fits into it.
 - A more or less total organization of one's life based on the world view.
 - A social group bound together by the above.
- This definition captures much of what religion is across diverse cultures. It includes sociological, psychological, and historical factors and allows for broader grey areas in the concept of religion. It also recognizes that "religion" exists on a continuum with other types of belief systems, such that some aren't religious at all, some are very close to religions, and some definitely are religions.
- This definition is not without flaws, however. The first marker, for example, is about "supernatural beings" and gives "gods" as an example, but thereafter only gods are mentioned. Even the concept of "supernatural beings" is a bit too specific; Mircea Eliade defined religion in reference to a focus on "the sacred," and that is a good replacement for "supernatural beings" because not every religion revolves around the supernatural.

An Improved Definition of Religion

- Because the flaws in the above definition are relatively minor, it's an easy matter to make some small adjustments and come up with a much-improved definition of what religion is:
- Belief in something sacred (for example, gods or other supernatural beings).
- A distinction between sacred and profane spaces and/or objects.
- Ritual acts focused on sacred spaces and/or objects.
- A moral code believed to have a sacred or supernatural basis.
- Characteristically religious feelings (awe, sense of mystery, sense of guilt, adoration), which tend to be aroused in the presence of sacred spaces and/or objects and during the practice of ritual which is focused on sacred spaces, objects, or beings.
- Prayer and other forms of communication with the supernatural.
- A worldview, ideology, or a general picture of the world as a whole and the place of individuals therein which contains a description of an overall purpose or point of the world and how individuals fit into it.
- A more or less complete organization of one's life based on this worldview.
- A social group bound together by and around the above.
- This definition of religion describes religious systems but not non-religious systems. It encompasses the features common in belief systems generally acknowledged as religions without focusing on specific characteristics unique to just a few.”

Q5. How does your group's definition compare with that of the definitions above?

Q6. Which parts of these definitions most closely match your view/experience of Christianity?

Q7. Based on all of the above, what are the similarities and differences between science and your practice of Christianity?