

Theology & Science
Final Assignment
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I. Definitions:

A. Provide in your own words, short but adequate definitions of each of these terms. Definitions are not to be longer than two sentences each.

1. anthropocentrism

Human-centered view on interpreting reality.

2. apologetics

The explanation of certain things, in a relevant and structured fashion

3. biblical literalism

Opposed to (or contrasts with) Scientific Materialism. The view of Bible and Scripture as authoritative and doctrine.

4. biotechnology

The “General application of biology to commercial practice” –Southgate. Includes the application of genetic engineering, gene therapy, etc.

5. cosmology

Pays attention to the Universe and attempts to explain its meaning and implications through understands of theology, philosophy and / or Science.

6. creationism

Biblical literalism is ~~challenged and~~ supported by science. Both scripture and fact attest to religious beliefs and views on creation.

7. critical realism

An explanation for the world that criticizes one’s interpretation of reality, whether there is sufficient evidence to interpret reality.

8. deism

“Religion of reason”. Not an institution, wary of thinking, emphasizes God who initiates creation then withdraws, and lets Nature follow its course.

9. determinism

All things are determined by Natural laws or God and can be explained exclusively by them

10. empiricism

Sense impressions (Kant). Determining that which is real by that which is tacit to the senses, interpreting reality by that which is readily evident, obvious.

11. geocentrism

Ptolemaic view: Geocentric stars revolve around the Earth. 2nd BCE.

12. heliocentrism
Nicolas Copernicus: understanding that the Earth and the planets revolve around Sun.
13. idealism
Humans and human thought are above matter and reality.
14. immanence
Focus on God *in* things.
15. instrumentalism
Theories are as good as their (practical) application. Models are imaginative and temporary, limited in relevance as they are not literal representations on the world.
16. metaphysics
Systematic synthesis – general concepts toward world rule. Provides an arena for common reflection, not for the theologian *or* the scientist.
17. Natural selection
Explains the current existence of life and species by 3 factors: random variation, struggle for survival and survival of the fittest.
18. Natural theology
William Paley makes an elaborate argument for supernatural element of the Universe for the teleological views of the Universe. Appeals to biological phenomena as indicative of the creator. i.e. the eye, constructed and crafted for vision.
19. neo-Darwinism
Adaptation of an organism acted upon by variation, which were originally unadaptive. i.e. punctuated equilibrium, Baldwin effect.
20. panentheism
God in all things, and all things in God. God is in everything, not the sum of all part, but beyond the part and the natural world
21. paradigm shift
(Kuhn) Science is not neutral and beyond the mind. Involves a total transformation of thought. ~~Revelations of thought.~~
22. positivism
Consists of 4 distinct theological responses: 1) Non-cognitivism, 2) existentialists, 3) verificationists, 4) Revelational positivists.
According to positivists, there is so much that is not experienced, and there is a limit truth to that which can be verified, then you rule out all else which is beyond experience.
23. reductionism
Reduce things to the basic parts... "Nothing but..." i.e. "God is nothing but-..." Means of explaining complex thought from its components.

24. revelational positivism

(Karl Barth) Humans are encouraged not to confront God with reason, but to be confronted *by* God. It is bad to reduce God to reason.

25. scientific materialism

Fundamental reality of the Universe is matter. Clockwork reality of God is squeezed out

26. teleology

Telos and *Logos*: rational account of ends or purposes of something. Why God understands things, purpose, end, goal, from the shape, colors, etc. Aristotle: all things have a natural resting place/state.

27. theocentrism

Human being's view of God at the center of (our) understanding (contrasts with humans at center).

The "Great chain of being" places God at the top (then angels, then Humans, then animals, then matter.

28. theology of nature

Starts with religious traditions trying to understand own nature. Tries to understand self in terms of religion and what is known. Insight to nature, meaning of nature.

29. transcendence

shares view of deism. (Creator and withdrawer). Diving apart from things. God is totally separate from everything.

30. uncertainty principle

(Werner Heisenberg) At the fundamental level of atomic interaction, the position and velocity of an atom cannot be determined simultaneously (for a common state of matter, at a common time). This points out that indeterminacy of our knowledge is a property of the system of nature.


Short Essay Questions

Do 1p. 2x space essays on each

B. Discuss which of the various interpretations of the anthropic principle you prefer outlined in Southgate (p. 126-30), et pourquoi?


There are two main interpretations of the anthropic principle: the Weak Anthropic principle (WAP) and Strong Anthropic principle (SAP). I personally prefer the WAP, mainly because I very much disagree with the SAP. I also disagree with the anthropic principle, and the “weakest” interpretation of the anthropic principle provides a sufficient response. Although the anthropic principle does “underscore the importance of the observer” it also “does not in itself offer any casual explanation” (Barbour, p. 205). The SAP is much too sweeping in its claim that our existence explains the Universe, and the interpretations raises issues that conflict with the WAP. The nature of the Anthropic principle to focus on the meaning of design, with an openness for dialogue between Science and Theology and the issues of “...chance and necessity” (Barbour p. 205). The limitations of the views and presumptions of SAP seem to limit its support for dialogue (between Science and Theology). WAP will point to the precise fine-tuning of the elements, physical characteristics and minutiae possibility for the existence of life in our Universe to explain the existence of a designer. The dialogue continues with such responses as the possibility of “Many-World theory”, “Symmetry” and “Supra-Gravity” to suggest that the occurrence of life is a likely possibility (or a possibility) that is not near impossible.

The SAP presumes that our existence explains the Universe, with the FAP (Final Anthropic principle) stating that conscious life *must* come into existence. Perhaps this view over-emphasizes the capacity of the observer to observe, making conclusions with the benefit of hindsight and existence in the now. The presence and existence of human-life, whether on a cosmological scale with the “capacity to understand and manipulate matter on a cosmic scale” presumes extensively that the Universe exists because of our existence. SAP is not open to such responses as the “Many-World theory” to explain the existence of life, because SAP does not presume an existence of the Universe without the existence of human thought to interpret and bring meaning (except for time leading up to the existence of life). The view is too idealistic, to argue that human life will exist indefinitely (in human form or not) is a verificationist statement, proven only by the annihilation of human life (or thought)...of course by then there would be no conscious thought to realize the obvious limitation of this view.

SAP makes too many presumptions that are not verifiable and limited in dialogue. WAP is a more satisfactory response because it focuses on meanings of our existence, and encouraging dialogue for further insight into the role and focus of the Universe to (human) life. 

C. Which theological model outlined in Southgate (p. 372-6) do you consider the best equipped to meet the problems posed by biotechnology?


I find the **Positivist** model is best equipped to meet the problems posed by biotechnology. This model is open to the application of science and man's involvement with nature and the natural world. The flexibility of the **Positivist** view is its flexibility and strength to emphasize the human capacity "to reject and affirm the latest developments" in science and technology. If we view biotechnology as another area of science that exists for the benefits of human life, the knowledge of biotechnology can be applied (in an idealist view) to resolve problems that are of human concern. Applications of the knowledge of biotechnology **are not without consequences**, such as threat to animal welfare, negative impacts on the environment and human well-being, however the advantages are significant. There are advantages and **consequences** to any impact of scientific applications.

The **positivist** model, **more than Process theology** or eco-feminist theology, is best equipped to investigate the consequences and resolve them, while still advancing the area of biotechnology to provide **with scientific knowledge to apply to** areas of concern to humans. Advances in biotechnology, unlike other areas of science, are responsive to ecological and natural impact. The **positivist** model seeks for the ultimate good with a balance for nature and life, encouraging dialogue and awareness for people to consider what is in the benefit of nature and life. A **positivist** view is open to criticisms of genetically altered foods or ecological impacts on genetic diversity, and focuses on the ultimate good to resolve those issues. This contrasts with the other models, which are not responsive to the changing pace and views of biotechnology. The attempt of process theology to find teleological interpretation of everything is suppressed by biotechnology. As advances in biotechnology progress and the interpretations of everything change, process theology plays catch-up to meeting the problems posed by biotechnology. Any inhibition (or discouragement) of the advancement of biotechnology would create conflict. The theological element of the positivist view makes it ideal to address ethical impacts, while still encouraging human creativity and freedom for biotechnology's quest to explain and improve human's role to interact with nature and its elements. 

II. Long Essays Questions

Do 2p. 2x space essays on each.

D. Look at the passages from Monad, Dawkins, and Wilsons quoted in Southgate (p. 154-6). Examine the presuppositions of the writers-don't merely repeat what they say. How do they compare with your own presuppositions about religious belief? is humanity "alone" or "at home" in the universe?

The passages from Monad, Dawkins and Wilsons are arguments from biological atheists responding to theistic defenses of belief. The text states that Monad makes a "badly stated conclusion" that the "Universe with chance has no meaning." that may cloud the intended message with a debate about meaning and interpretation. But the essence is there of Monad's message, the Universe is "nothing but chance". By contrast, Polkinghorne integrates chance to explain God: "chance allowed God to create creation to create itself." I think that Monad would easily dismiss this view referring to the second part of his statement explaining the need of the human mind to believe in God. 


I find difficult to believe that creation and existence is nothing more than chance. To apply an analogy, although the dice determines the fate of the playing pieces, the pieces play according to rules, on a common board. Monad's passage aims to explain man's unwillingness to believe that life is nothing but chance: "man at least knows that he is alone in the unfeeling immensity of the Universe, out of which he emerged by chance". This reminds me of the teacher's quote from Darwin doubting his belief in God, about how Darwin questioned the existence of God because if his mind arose from evolution, how could he trust that God exists beyond his faith, that his faith is not a limitation of his evolved brain?


This view is shared with other thinkers who believe that Darwinism eliminates theology: Dawkins, Wilson, Crick. Earlier in the course the examples of scientists were referenced and cited to provide arguments to support the existence of God. These thinkers, however, believe that God can be explained as phenomena in the history of human evolution. In this view, humanity is alone, not at home, but in the mind.

Dawkins continues the view elaborating the human interest for believing in. "The survival [of God provides] great psychological appeal [with its] superficially plausible answers to deep and troubling questions about existence." (Southgate, p.155) Dawkins explains for the existence of the God of the Gaps "The 'everlasting arms' [is like] a cushion against our own inadequacies [which are just] imaginary." This characteristic of God has been repeated; God existed when it was convenient. Devout scientists with some idea of God present in the Universe seemed to successively pushed God further and further back as cosmological thinking advanced further and further. The concept shared among scientists of the deist God that created the Earth and withdrew, instead created the Universe, with its immense planets, solar system and properties of physics and withdrew. To those who shared Polkinghorne's view, God was pushed even

further back, involved with chance to create the mechanism that created creation.

Monod and Dawkins are more general with their explanation for the willingness of people to have faith in whatever God. There is nothing supernatural beyond the mind and culture; cultures want to believe in a God, it keeps societies together. From an anthropological perspective, a common religion or supernatural belief in a society, culture or community provides a basic fabric of belief, alleviating concerns and providing an explanation for otherwise distressing and troubling questions. This is evident during times of pain, such as catastrophes, death or suffering. Questions such as “why is there suffering?” or “why do bad things happen to good people?”. An atheist response is hardly consoling, “it happens because it just does” (despite the truth or rational arguments behind it). A more “human” response is one of understanding, of a higher understanding. People may even see intrinsic faith surface in times of great pleasure or happiness, such as the birth of a child or success. Saying “life is good” may suggest there is a higher order at work (although this contrasts with someone saying “I am so lucky”).



Wilson's passage seems like a reductionist interpretation of the Universe using Naturalist arguments to support his view. Suggesting that “[W]e have come to the crucial stage” **grabs me to** think if this can be interpreted as an evident paradigm, to think that the current trends and state of science is at the forefront of progress. Wilson's positivist view, believing that science (more specifically Biology) can explain religion, is difficult to interpret as being an argument for conflict or dialogue. Wilson places emphasis on biology and a subordinate role for religion, encouraging an exchange, but with science as the moderator and contestant. I believe that Wilson presumes too much about what biology can offer to theological thinking, faith and religion. I don't think that the arguments made from biology to explain mythology, the development of language and culture and the brain will silent responses about a higher order or being at work behind it 

My belief shares elements with the overlap of the arguments of Monod and Dawkins. I personally find relevance in the argument that belief in God is a convenient faith that bears more easily on the mind than conceiving a world without a higher being. The existence of life, the Universe or nature is beyond the understanding of any human mind when one considers the humanly-inconceivable and unimaginable length of time required to bring it about. The number is staggering, and unimaginable. The creation and development of life did not occur overnight, but given enough time, it becomes very possible. The sociological perspective suggests the following in its analyses of societal dynamics: “What exists works, and what works, exists”. Perhaps life, the Universe and nature exists because it works, and it works because it exists. Perhaps God can be explained as an emotional response to an abstract existence of reality 

Discuss the four typologies Barbour proposes regarding the relationship between science and religion. Which one do you find most satisfying? (Conflict, Independence, Dialogue and Integration)

It seems that Integration is the obvious answer from any student who studied well in a course of Theology & Science, as it is the last step in Barbour's Typology that best resolves and addresses the concerns of theology and science. However I must commit to Dialogue. The ongoing debate between theology and science is evidently a dynamic one. Whether one believes that both are part of the whole, or display a nature of duality at work. I must say that I find each area of the typology provides strong and convincing arguments for the relationship of science and theology to exist and develop to the best of their respective areas of understanding. In the sphere of each typology, the arguments are sensible, rational and logical. The dynamic relationship of the two has experienced periods of friction (conflict), cooperative understanding (dialogue), identification of boundaries (independence), and deeper interpretations of views and beliefs (integration). I find much relevance in the typology of Integration, and I have believe that that domain is where science and theology can best work constructively for a greater understanding of the issues of faith. But I think integration is much too dependent on the advancement of Dialogue for its cause. If discussions about how greater understanding from theology and science are to come about, Dialogue provides the common ground to exchange the ideas, and then the possibility to integrate the two is possible.

Of course this is a sweeping analysis of the four typologies of relating Science and Religion. Generalizations are necessary to compare them effectively. Within every typology are sects, groups, and descriptive labels and / or recognized religious faiths, and some even span typologies. Most authors can be classified as articulating views that distinctively fall in one category, but there are always the exceptional ones that walk the fence between any of the four areas. This demonstrates the fluid and dynamic nature of Science and Theology. This reinforces my notion of the relevance of Dialogue. Although Dialogue exists as its own typology, I believe there is an element of it present in every typology that is substantially more relevant. For Independence to argue its case, for a separation and distinct areas of focus between Science and Religion, an

understanding of Dialogue is necessary. This example extends to the other typologies; for Conflict to argue against Science or Theology (or Religion), the dialogue that exists between the two is recognized and minimized.  also find that Dialogue best adds to a theological understanding of the world (or “all that exists”). Dialogue is open to the possibility of scientific understanding, or theological understanding. **Not to dismiss dialogue as not being critical,** dialogue has a greater perspective to argue the meaning of theories in science and the rationality of religious beliefs. This follows because for arguments to be made against the other, understanding of the other is necessary. For example, Biblical literalism must understand the impact and doubts that may be raised by rational introspection  and the history of nature must have anticipated arguments to retort against science. Theology does not follow blindly, and I believe that it is through Dialogue that theology gets a full perspective. The belief that results from this understand does not necessarily have to include any elements of the lessons of Dialogue (such as presuppositions and limit questions, or Methodological Parallels). However I believe that Theology does not gain a full perspective from Dialogue alone. Openness to all four ways that Theology and Science relate is healthy, as there are no strict areas of jurisdiction regarding foundations of faith or subjects of debate. 