

Science and Religion

Institution: Sharif University of Technology, Tehran, Iran

Instructor: Mehdi Golshani

Introduction

I am professor of physics at Sharif University of Technology (Tehran, Iran). I have taught most of the undergraduate and graduate courses in physics. Recently, I have been mostly involved with advanced courses on particle physics and courses on the foundational problems of physics. I have also been teaching two courses on the philosophy of science to philosophy students.

The course I intend to teach on science and religion consists of sixteen two-hour sessions. Each session consists of one hour and half of lecturing and half an hour of discussion. The class would consist of about 30 students of science or engineering which have at least passed a regular course on modern physics. Each student has to write an essay about one of the subjects related to the course, and there is a final written examination.

Course Contents

The Role of Religion in the History of Science

1 a. Contribution of religion to the rise of science in the Islamic World.

1 b. contribution of religion to the rise of science in the Christian World.

References

S. H. Nasr, *An Introduction to Islamic Cosmological Doctrines* (Create Britain: Thames and Hudson, 1978).

S. H. Nasr, *Science and Civilization in Islam* (Cambridge, Mass.: Harvard U. P., 1968).

J. B. Brook, *Science and Religion: Some Historical Perspectives* (Cambridge, Cambridge U. P., 1991).

T. Cosslett, ed., *Science and Religion in the 19th Century* (Cambridge, Cambridge U. P., 1984).

2. Ways of Relating Science and Religion

We follow a categorization of contemporary views on science-religion relation which is similar to that of Ian Barbour:

Conflict

Science and religion have conflicting views concerning the origin, the history and the nature of the universe. Some even think that religion and metaphysics are impediments to the progress of science.

Independence

Science and religion deal with completely different things. They have different bases, different methodology and different domains of experience.

Dialogue

Similar to (ii), but admitting that there are points of contact to be explored, and trying to make holistic sense of these two independent domains

Constructive Interaction (Convergence)

The differences of science and religion are superficial. The goal of science is to discover the order in nature and the goal of religion is to identify the purpose and meaning of our universe. These two are related, and we expect that they would converge and contribute to the formulation of a coherent world-view. Here one can talk of consonance between science and theology.

References

Ian Barbour, *Religion in an Age of Science* (San Francisco: Harper & Row, 1990).

M. C. Banner, *The Justification of Science and the Rationality of Religious Belief* (Oxford, Oxford U. P., 1990).

C. H. Townes, "The Convergence of Science and Religion", *Zygon* Vol. 1. No. 3 (1966), PP. 301-311.

Ted Peters, ed., *Cosmos as Creation: Theology and Science in Consonance* (Nashville: Abingdon Press, 1989).

3. Can Science Dispense with Metaphysics?

Metaphysical propositions are basic presuppositions about the nature of the world. These are propositions that cannot be verified by the use of scientific method. Belief in the existence of God is an example of a metaphysical belief. Here we want to show that metaphysics is essential for the justification of science, that science can not answer all questions and that all sciences presuppose some metaphysical beliefs. Furthermore, metaphysics works as a bridge between science and theology.

References

J. Trusted, *Physics and Metaphysics* (London: Routledge, 1991).

R. A. Clouser, *The Myth of Religious Neutrality* (Notre Dame: Univ. of Notre Dame P., 1991).

W. H. Austin, *The Relevance of Natural Science to Theology* (London: Macmillan, 1976).

M. Golshani, *From Physics to Metaphysics*, (Tehran: Institute for Humanities and Cultural Studies, 1997).

R. Trigg, *Rationality and Science* (Oxford: Blackwell, 1993).

H. Margenau and R. A. Varghese, *Cosmos, Bios, Theos* (La Salle, Ill.: Open-Court, 1992).

S. Jaki, *The Relevance of Physics* (Edinburgh: Scottish Academic Press, 1992).

4. Arguments for the Existence of God

Cosmological Argument

Different versions of the argument in the Islamic philosophy and in the Western philosophy.

Criticisms and responses.

(ii) Argument from Design

Old version of the argument.

New version of the argument including the one from fine-tuning of nature's fundamental constants.

Criticisms and responses.

(iii) Argument from Some Specific Discoveries in Physics

Some scientific discoveries have been interpreted as evidences for the existence of God - the second law of thermodynamics and the Big-Bang theory of the universe provide two examples.

References

R. Swiburne, *The Existence of God* (Oxford: Clarendon Press, 1992).

H. Margenau and R. A. Varghese, *Cosmos, Bios, Theos* (Lasalle, Ill.: Open-Court, 1992).

K. Armstrong, *A History of God* (New York: A. A. Knopf, 1993).

5. Theism and The Doctrine of Creation

(i)- Theism and Big-Bang Cosmology

(ii)- Is the notion of temporal beginning to the universe necessary for belief in God?

(iii)- Doctrine of continuing creation in Mulla-Sadra Philosophy and in contemporary thought.

(iv)- Challenges from cosmology for theism (Hawking's quantum cosmology, etc.)

References

Ted Peters, *Cosmos as Creation* (Nashville: Abingdon Press, 1989).

A. M. Corey, *God and the New Cosmology* (Maryland: Rowman & Littlefield Pub, Inc., 1993).

W. L. Craig and D. Smith, *Theism, Atheism and Big Bang Cosmology* (Oxford: Clarendon Press, 1993).

W. B. Drees, *Beyond The Big Bang* (La Salle, Ill.: Open Court, 1990).

R. J. Russell, W. P. Stoeger and G. V. Coyne, eds., *Physics, Philosophy & Theology* (Vatican City State: Vatican Observatory, 1988).

Fazul Rahman, *The Philosophy of Mulla-Sadra* (New York: State University of New York Press, 1975).

6. Challenges to Theism

The problem of Evil (some people find it difficult to reconcile the presence of evil and suffering in the world with the idea of a benevolent God).

The Problem of Miracles.

The Problem of Resurrection.

Explanations offered for these problems.

References

G. Schlesinger, *Religion and Scientific Method* (Dordrecht Holland: D. Reidel Co., 1977).

M. Muttahari, *Monotheism*, in Persian Language (Tehran: Mulla-Sadra Pub., 1994).

Syllabuses of Two Samples Sessions

(I)

Can Science Dispense with Philosophy (Metaphysics)?

Relation of science and philosophy in historical perspective.

Why Scientists have dismissed philosophy?

The difficulty of philosophical problems

Spectacular success of some scientific theories

Excessive interest in specialization

Philosopher's lack of involvement with scientific matters

Prevalence of empiricism

Impact of Empiricism on Scientists

Emphasis on the primary of empirical data and observability

Emphasis on the clarity of concepts

Rejection of metaphysics

Dominance of instrumentalism after the advent of quantum theory.

4. Challenges to Empiricism

Not all of our knowledge is based on sense-data

Some assumptions used in science have no direct observational evidence in their favor

All scientists use some general principles as guides

Problems with positivist's verification principle

All observations are theory-laden

Unfavorableness of instrumentalistic outlook.

5. Have Physicists Succeeded in Dispensing with Philosophy?

Admission of some eminent scientists for having used some philosophical assumptions

Hidden use of philosophical presuppositions in the modern physical theories

The existence of problems which cannot be handled by science alone.

6. Relevance of Philosophy to Science

Philosophical outlook characterizes researcher's goal

Philosophy provides a framework for science

Neglect of philosophy may lead to inconsistent claims

Philosophy provides a justification for science

7. The Revival of Philosophical Concern among Scientists

Recent calls for attention to philosophical considerations

Increase in the number of science-philosophy conferences in the last twenty years

Increase in the number of science-philosophy journals and books in the last twenty years.

(II)

Theism and the Doctrine of Creation

1. Big Bang Theory

Big Bang as a sign of the Divine origin of the universe.

Big Bang resulting from a quantum fluctuation effect.

Hawking's removal of edge to space-time (thus dispensing with the idea of creation)

Big Bang without a Creator (negating the generality of the causality principle)

Does eternity of the universe make it causeless?

Continuing creation in the Islamic philosophy and in contemporary thought.

2. Anthropic Principle

The problem of fine-tuning of nature's fundamental constants.

Explanation of fine-tuning in terms of multiple universes.

Explanation of fine-tuning in terms of the existence of God.

Lecture/Discussion Schedule

The course consists of 16 two-hour sessions. Each session consists of 1 hour of lecturing plus half an hour of discussion involving occasional quizzes. The suggested program is implemented in the following form:

2 Sessions: **the Role of Religion in the History of Science**

3 Sessions: **Ways of Relating Science and Religion**

2 Sessions: **Can Science Dispense with Metaphysics**

3 Sessions: **The Existence of God**

1 Session: **Cosmological Argument**

1 Session: **Argument from Design**

1 Session: **"Scientific" Arguments**

2 Sessions: **Theism and the Doctrine of Creation**

3 Sessions: **Challenges to Theism**

1 Session: **The Problem of Evil**

1 Session: **The Problem of Miracles**

1 Session: **The Problem of Resurrection**

1 Session: **Summary of the Course**

Evaluation Mechanism

Each student has to write an essay about one of the assigned subjects, and there is a final written examination. Furthermore, there are occasional quizzes during the discussion period. The course grade is evaluated in the following way

Course Grade = Essay (30%) + Final Exam (50%) + Quizzes during the discussion period (20%)