

RELIGION AND SCIENCE

Institution: Fu Jen Catholic University, Department of Chemistry, Taiwan

Instructor: Frank Budenholzer

SUMMARY

Credit: Two-hour elective in the General Education Curriculum (14 two-hour classes plus midterm and final examinations). This course is intended to give the undergraduate students in the College of Science and Engineering of Fu Jen Catholic University the opportunity to better understand the relationship between religion and modern empirical science. Christianity as well as traditional Chinese religions will be considered. The course will consist of lectures by the course director, invited lectures and student presentations. There will be ample time for class discussion.

WEEK 1: INTRODUCTION

Precis and key questions

A brief consideration of Ian Barbour's four ways of relating science and religion, with examples from contemporary Taiwan. Students will be asked to consider their own understanding of the science-religion relationship as well as the general consensus both among intellectuals and the general population.

Required reading: Budenholzer, Frank. 1998. "Religion and Science: Conflict or Convergence."**

Suggested reading: Barbour, Ian. 1997. *Religion and Science: Historical and Contemporary Issues*, pp. 77-105. [Note: Double stars (**) indicate the material is available in Chinese. Complete citations are given in the Bibliography.]

Content

- (1) Ground rules for the class: grades, attendance (mandatory), course requirements, examinations, etc.
- (2) Lecture on the four ways of relating science and religion. (course director)
- (3) Discussion of the students' own perception of the relationship between science and religion as well as the general situation in Taiwan.

Pedagogical notes

Students' own perception of the science-religion relationship will be strongly correlated to their own faith stance or lack of one. The majority of the students in traditional science and engineering departments have probably never given serious attention to the problem.

WEEK 2: THE BIG PICTURE

Precis and key questions

A description of the evolutionary scenario of modern science - big bang cosmology, the beginnings of life, molecular evolution, biological evolution, neuro-sciences, and the rise of culture. Students will be asked to reflect upon the picture of the cosmos from the perspective of their own fields of science.

Required reading: Fang, Lizhi. 1988. *Creation of Life in the Cosmos*.**

Content

- (1) Lecture on the cosmological and evolutionary scenario. (course director)
- (2) Discussion. How do the students see their own scientific studies fitting into the larger picture?
To what extent can this world-view take the place of that provided by traditional religious views?

WEEK 3: SCIENTIFIC METHODOLOGY

Precis and key questions

A consideration of what we are doing when we do science. The development of contemporary philosophy of science and the relationship to the history of science will be considered.

Required reading: Lakatos, Imre. 1993 [1970]. "A Methodology of Scientific Research Programs," in Imre Lakatos and Alan Musgrave, eds. *Criticism and the Growth of Knowledge*, pp. 170-192.**

Content

- (1) Short discussion. How do the students perceive scientific method?
- (2) Lecture on the main ideas of Thomas Kuhn (paradigms) and Lakatos (research programs). (course director)
- (3) Short discussion. Does such a conception fit with the students' experience? Is scientific knowing in any way related to religious knowing?

WEEK 4: RELIGIOUS KNOWING AND THEOLOGICAL METHODOLOGY

Precis and key questions

What does it mean to "know" about religious topics? Theology as the systematic reflection on religion. Faith seeking understanding. What is the relationship between religious knowing and scientific knowing, between theology and science?

Required reading: Barbour, Ian. 1993[1966]. *Issues in Science and Religion*, pp. 264-191.**

Suggested reading: Budenholzer, Frank. 1980. "Religion and Science: Seeking a Common Horizon."**

Content

- (1) Lecture. The nature of religious knowing and theology. (course director)
- (2) Discussion. Students' perception of religious knowing.
- (3) Lecture. Parallels and dissimilarities between theological and scientific methodologies. (course director)
- (4) Discussion. Student reaction to the possibility of parallels between scientific and religious knowing.

WEEK 5: HISTORICAL ISSUES - RELIGION AND SCIENCE IN THE WEST

Precis and key questions

The role of religion in the development of empirical science in Europe as suggested by Stanley Jaki and others will be considered. Key conflicts – Galileo's condemnation, human evolution, the "Lysenko" affair will be briefly reviewed. The question of why empirical science developed in Europe and not in other regions, particularly China, will be discussed.

Required reading: Barbour, Ian. 1993[1966]. *Issues in Science and Religion*, pp. 17-147.**

Needham, Joseph. 1978 [1975]. *The Shorter Science and Civilization*. Selections.**

Content

- (1) Lecture on religion and science in the West. To what extent was Christianity a positive factor in the development of empirical science? (course director)
- (2) Discussion. From a consideration of religion and science in the West we will move to a key question in modern Chinese intellectual history - Why did modern empirical (Western) science not develop in China until after scientific exchanges with Japan and the West.

WEEK 6: THE DEVELOPMENT OF EMPIRICAL SCIENCE IN CHINA

Precis and key questions

Modern (pre-Copernican) science was first introduced to China by the Jesuit missionaries at the end of the Ming dynasty (1368-1644) and the beginning of the Qing (1644-1911). However science was introduced on a large scale only at the end of the Qing and in the early years of the Republic (after 1911). At this time there were calls by many of China's most influential intellectuals to jettison China's traditional culture and accept science as a way of life. The traditional critiques of religion in China were combined with the anti religious sentiments of many Western thinkers to produce a strong scientism. Marxism in Mainland China and scientism in Taiwan are remnants of this situation.

Required reading: Chin, Yao-Chi. 1978. *Intellectuals and the Modernization of China*. Selections.**

Zhang, Junmai and Ding, Wenjiang. 1997 [1925] *Science and the Philosophy of Life*. Selections.**

Suggested reading: Budenholzer, Frank. 1998. Religion and Science in a non-Western Cultural Setting:

The Chinese Experience.**

Content

(1) Lecture on the development of modern empirical science in China and Taiwan with special emphasis on the implications for both indigenous (Taoism and folk traditions) and foreign (Buddhism and Christianity) religions. (course director)

(2) Discussion. To what extent does the scientism espoused by many intellectuals influence today's intellectual climate and educational policies? What is the prevailing attitude toward science and religion in Taiwan?

WEEK 7: INTEGRATION AND DIALOGUE - CHRISTIANITY AND EVOLUTION

Precis and key questions

Darwinian evolutionary theory was most forcefully introduced to China in Yen-Fu's translation of T. H. Huxley's *Evolution and Ethics* in 1898. From that beginning, evolutionary theory was as much a political and social theory as a biological one. Evolutionary thinking has very much a part of the debate on science as a philosophy of life. Many Christian missionaries argued that evolution and Christianity were incompatible. With this background, the Christian debate on evolution will be considered in the context of Taiwan's special situation. The question will be considered in the context of Barbour's four models with special emphasis on contemporary examples of dialogue and integration.

Required reading: Suo, Paulin. 1998. *The Human Person and Human Life*, pp. 304-15.**

Suggested reading: Teilhard de Chardin, Selected essays.**

Content

(1) Lecture. After a brief survey of the introduction of evolutionary thought in China and Japan, the arguments for a conflict between Christianity and evolution will be presented. Contemporary integrations will be considered, especially that of the Catholic priest Teilhard de Chardin.

(2) Discussion. Students will be encouraged to give their own opinions, whether from the perspective of Christianity or from the perspective of other religions or philosophies.

WEEK 8: MIDTERM EXAMINATION

WEEK 9: THE RELIGIOUS TRADITIONS OF CHINA AND EMPIRICAL SCIENCE - BUDDHISM

Precis and key questions

An established Buddhist scientist will be asked to share her views on the relationship between Buddhism and science. Buddhism has been preached in the West as a religion uniquely compatible with modern science. Others have suggested that Buddhism, with its stress on the transitory nature of the material, would be incompatible with a scientific spirit. In China and Taiwan Buddhism has taken on many elements of folk religion leading many scientists and intellectuals to equate it with superstition.

Required reading: You, Zhibiau. 1982. "Report of a Scientist's Research on Buddhism."** (Or similar tract from popular Buddhism.)

Content

- (1) Invited lecture: Buddhism and Science. Dr. Ma Hsun, Professor of Chemistry and President, Hua Fan Buddhist University (or other recommended speaker).
- (2) Discussion to follow on the topic of the lecture.

WEEK 10: THE RELIGIOUS TRADITIONS OF CHINA AND EMPIRICAL SCIENCE - CONFUCIANISM AND PHILOSOPHICAL TAOISM

Precis and key questions

Confucianism is normally not considered a religion, yet it functions in Chinese society in many ways as a religion. Many scholars would argue that early Confucianism contained a strong sense of the transcendent that was later lost in the development of so-called "neo Confucianism." Philosophical Taoism is rooted in the Tao Te Ching of Lao Tzu. The "Tao" is the unnamed source of all that is and is sometimes rendered as "ultimate reality." The relationship of these two traditions to modern empirical science will be considered.

Required reading: Selections from (1) Lao Tzu, *Tao Te Ching* and (2) Confucius, *Doctrine of the Mean (Centrality and Commonality)***

Suggested reading: Huang, Hsing-Tsung. 1998. "Tao, Modern Science, and Human Destiny" in *Cosmic Beginnings and Human Ends: Where Science and Religion Meet*, pp. 159-186.

Content

- (1) Invited Lecture: The Chinese Philosophical Traditions and Empirical Science. Professor B. F. Chen, Chair, Department of Philosophy (or other recommended speaker).
- (2) Discussion follows on the topic of the lecture.

WEEK 11: THE RELIGIOUS TRADITIONS OF CHINA AND EMPIRICAL SCIENCE - FOLK RELIGION IN AN EMERGING SCIENTIFIC CULTURE

Precis and key questions

Folk religion is pervasive in Taiwan culture and making a strong comeback in Mainland China. Folk tradition includes the rites of religious Taoism, activities related to family life, fortune telling, traditional Chinese healing practices, etc. and belief in a large group of saints and deities. The excesses of folk religion have been severely critiqued by intellectuals as well as Buddhist and Christian believers. To what extent are traditional folk beliefs and activities compatible with modern empirical science? How does one distinguish “true religion” from “superstition?”

Content

(1) Invited lecture: Science and folk traditions. To be arranged by Dr. Tak-Kwong Chan, Chair, Department of Religion, Fu Jen Catholic University.

(2) Discussion. A discussion of students own perceptions and beliefs. Are traditional folk practices such as burning spirit money or consulting fortune tellers consistent with a scientific mindset? What will be the future of popular religion as Taiwan continues to develop scientifically? Mainland China’s attempts to eradicate popular religion will also be considered.

WEEK 12: SCIENCE, RELIGION AND ETHICS – TAIWAN’S ENVIRONMENT

Precis and key questions

All religions contain an ethical element as well as strong motivations to engage in approved ways of behavior. The severe environmental crisis of Taiwan has several scientific components: (1) It has in large part been initiated by Taiwan’s rapid technological and industrial development. (2) Remediation of Taiwan’s environmental problems will depend on scientific understanding of the problems and technologically informed strategies of solution. Taiwan’s environmental problems will be used as a test case of the relationship between science, ethics and religion.

Required reading: 1994 *Final Report: Quality of Life in the Bioregion of Taiwan*.**

Recommended reading: Rolston, Holmes. 1996 [1988]. *Environmental Ethics: Duties to and Values in the Natural World*. Selections.**

Content

(1) Discussion: What is the relationship between ethics and religion?

(2) Lecture: Ethics, religion and the environment: Taiwan as a Case Study. (course director)

(3) Discussion: Taiwan’s environmental crisis and the role of religion.

WEEK 13: STUDENT REPORTS

WEEK 14: STUDENT REPORTS

Depending on the number of students enrolled, individuals or small groups of students will make a report on topics of their own choosing. The topics will be some area of the religion-science dialogue of particular interest to the student.

WEEK 15: SUMMARY AND EVALUATION

Precis and key questions

The course director will attempt to bring together some of the key themes of the course. What are the similarities and differences in the religion-science dialogue in different religious traditions present in Taiwan? In this process, what have we learned about the nature of science and the nature of religion? A traditional concern in both China and Taiwan has been to differentiate between “true religion” and “superstition.” In what way is a consideration of the relationship between religion and science helpful in making the distinction?

Content

- (1) Lecture. An overview and tentative answers to some of the questions raised during the course. (course director)
- (2) Discussion. Student input on the themes of the course.
- (3) Discussion. Evaluation of the course.
- (4) Evaluation. Students fill in the formal evaluation forms.

WEEK 16: FINAL EXAMINATION

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