Week 1. Introduction: Typologies of the Science-Religion Relationship

Objective: to have students get acquainted with the complex relationship of science and religion.

Lecture Outline:
(1) General introduction to the structure of the course.

(2) The instructor’s struggles as a physicist, which finally led him to pursue the field of science and theology (cf. Polkinghorne).

(3) Various typologies (Ian Barbour, Ted Peters, and others) of the science-and-religion relationship. Particular attention will be given to the “warfare” model and its hidden assumptions (cf. Barbour; Peters).

(4) The postmodern condition and the science-and-religion relationship in that context (cf. van Huyssteen).

Group Discussion: What is the dominant view on the science-religion relationship in Korea? What are the underlying assumptions of the dominant view? What is your understanding of the postmodern condition and its relevance to the science-and-religion relationship? Share your own struggles with regard to this issue.

Readings:


Henceforth, [T]: “translated in Korean.”

Week 2. What is Science? (1) A Brief History of Science

Objective: An overview of the major scientific paradigms and revolutions aims not only
to inform the foundational scientific knowledge to non-science major students, but also to reveal the nature of scientific knowledge and activities.

Lecture Outline: A historical overview of major scientific paradigms and revolutions: (1) pre-modern science (Aristotle); (2) the paradigm shift from pre-modern to modern science (Copernicus, Galileo, and Kepler) in the 16th century; (3) the rise of modern science (Descartes, Newton) and the establishment of mechanical worldview in the 17th-18th century; (4) Darwin’s evolutionary theory, thermodynamics, and electromagnetic theory in the 19th century; (5) relativity and quantum theory in the early 20th century; (6) the development of contemporary cosmology (Big Bang, Quantum Cosmology); (7) the discovery of DNA structure and the revolution of genetic engineering; (8) the discovery of semiconductor, the development of computer, and the rise of information age.

Group Discussion: What is your impression of scientific activities? Discuss both the positive and negative effects of scientific developments on society.

Readings:

(2) Brody, David et al. 1997. The Science Class You Wish You Had [T] (recommended) – a readable introduction to seven great scientific discoveries in history.

Week 3. What is Science? (2) An Overview of the Philosophy of Science

Objective: To have students get acquainted with philosophical reflections on scientific knowledge, methodology, and activities.

Lecture Outline:
(1) A critical overview of the philosophy of science: (i) pre-modern philosophy of science (Aristotle); (ii) inductionism; (iii) positivism; (iv) Karl Popper’s “falsification”; (v) Thomas Kuhn’s “paradigm” and “scientific revolutions”; (vi) Imre Lakatos’ “research program”; (vii) post-empiricism; (viii) social constructionism (say, feminist science) (cf. Ratzshe; Losee).

(2) An introduction to the contemporary debate over “scientific realism” and related issues such as the objectivity of science, the meaning of truth in science, and the demarcation of science from pseudo-science, the role of imagination in science, etc (cf. Losee).

(3) The scope, end, and limits of science.

(4) The nature of scientific culture and “scientism.”

Group Discussion: What is the dominant image of science in our culture? Where does the limit of science lie? How is science portrayed in mass media?
Readings:
(1) Ratzsch, Del. 1986. Ch. 2 “The Traditional Conception of Science”; Ch. 3 “Philosophy of Science in the Sixties: Kuhn and Beyond”; Ch. 4 “The Contemporary Situation: A Brief Introduction” [T] (required) – a highly readable introduction to the philosophy of science.

(2) Losee, John. 2001. Ch. 1. “Aristotle’s Philosophy of Science”; Ch. 7 “The Seventeenth-Century Attack on Aristotelian Philosophy”; Ch. 10 “Inductivism v. the Hypothetico-Deductive View of Science”; Ch. 18 “The Debate over Scientific Realism”; Ch. 19 “Descriptive Philosophies of Science” [T](recommended)


Week 4. What is Religion? (1) The Complex Nature of Religion

Objective: to expose the multifaceted nature of religion and key methodologies in religious studies.

Lecture Outline:

(1) The multi-dimensionality of religion: doctrinal, mythical, ethical, cultic, experiential, and social dimensions (cf. Smart).


(3) Various views on religious diversity in Christian perspective: exclusivism, inclusivism, and pluralism.

(4) Major approaches in religious studies: search for the essence or origin of religion, phenomenology, and sociology (cf. Capps).

(5) The meaning and end of religion vis-à-vis those of science (cf. Wilfred Smith).

Discussion: What is your view of the meaning and end of religion, vis-à-vis those of science? How to deal with religious diversity from your own religious tradition (say, Christianity)? What are the similarities and differences between religion and science?

Readings:
(1) Smart, Ninian. 1983. Worldviews. Introduction; Ch. 1 “Religious Studies and Analysis of Worldviews”; Ch. 2 “Kinds of Worldviews” [T](required).


Week 5. What is Religion? (2) Philosophy of Religion: Religious Experience and Truth Claims

Objective: to compare religious theories, language, and methodologies with scientific theories, language, and methodologies.

Lecture Outline:
(1) Religious doctrines (or models) in relation with religious experiences, vis-à-vis scientific theories in relation with scientific data (cf. Barbour).

(2) Diverse views on revelation (in relation with religious experience) and interpretations of religious scriptures. Particular attention will be given to the role of imagination in religion (cf. Ward; Barbour).

(3) Diverse views on religious language vis-à-vis scientific language (cf. Barbour)

(4) Debate on religious realism and truth claims in religion vis-à-vis those in science (cf. Barbour; McGrath).

Discussion: What is your view of the role of imagination in religion, compared with that in science? How do you critically evaluate Ian Barbour’s view? What is your view of truth claims in religion vis-à-vis those in science? What are the similarities and differences between science and religion in terms of language, methodology, and imagination?

Readings:


Week 6. Religion and Science in the Western Tradition (1): The Laws of Nature and Divine Action

Objective: to have students get acquainted with the historical and contemporary debate on the relationship between physical laws and divine action.

Lecture Outline:
(1) The impact of the mechanical view of the universe (in the 17th and 18th centuries) upon religious views on divine activities: Deism, God-of-the-gaps, natural religion,
natural theology, and liberal theology (cf. Brooke; Worthing).

(2) The contemporary developments of quantum physics and chaos theory and contemporary debate on divine action in relation with them (cf. Russell; Worthing; Southgate).

(3) Various models of divine action in view of the laws of nature: interventionism versus non-interventionism with bottom-up causation, top-down causation, “lateral” causation, and primary/secondary causation (neo-Thomism).

(4) The status of the laws of nature and “miracles” (cf. Worthing).

Discussions: Discuss the strengths and weaknesses of each model of divine action. How can we interpret supernatural interventions in the Bible in relation with physical laws? How do we understand prayer in light of this?

Readings:


(3) Worthing, Mark William. 1996. Ch. 4 “Is God Still Active in the Universe” (required).

(4) Southgate, Christopher. 1999. Ch. 7 “A Test-Case-Divine Action” (recommended).

Week 7. Religion and Science in the Western Tradition (2): Evolutionary Theory, Creation, and Providence

Objective: to have students get acquainted with evolutionary theory (both historical and contemporary) and various responses of the Christian religion, and to stimulate them to think critically about the relationship between evolutionary theory and faith.

Lecture Outline:
(1) An introduction to Darwinian evolutionary theory and its contemporary development: Guest speaker, Professor Jae Chun Choe (Department of Biology, Seoul National University).

(2) The impact of Darwinian evolutionary theory upon the Christian religion. Discuss various theological positions: conflict (fundamentalism), separation (neo-orthodoxy), and integration (liberal theology, theistic evolution, process theology) (cf. Brooke; van Huyssteen; Gregory).

(3) A brief introduction to social Darwinism and evolutionary philosophy.

(5) A historical sketch and critical evaluation of the Creationism (cf. Numbers; Frye).

(6) Hermeneutics: the Genesis account.

Discussion: What is the dominant view of evolutionary theory in Korean (Presbyterian and Catholic) churches and other religious communities? What are the roots of this dominant view? How do you evaluate theistic evolution?

Readings:
(1) Brooke. 1991. Ch. 8 “Evolutionary Theory and Religious Belief” (required).
(2) van Huyssteen.1998. Ch. 3 “Religion and Knowledge: Does Evolution hold the Key?” (required)
(3) Barbour. 1990. Ch. 6 “Evolution and Continuing Creation” (recommended).
(4) Southgate. 1999. Ch. 4 “Theology and Evolutionary Biology” (recommended).

Week 8. Religion and Science in the Western Tradition (3): Contemporary Cosmology and Creation

Objective: to have students acquainted with the impact of contemporary cosmology upon the Christian doctrine of creation (and other religious doctrines of creation), and the arguments for God’s existence.

Lecture Outline:
(1) The development of contemporary cosmology: Big Bang and Quantum Cosmology.
(2) Various arguments for God’s existence in light of contemporary cosmology: ontological, cosmological, and design arguments (cf. Worthing; Russell).
(3) Contemporary cosmology in relation with the Christian doctrine of creation, and other
religious views of creation (say, Hinduism).

(4) Fine Tuning and the Anthropic Principle.

Discussion: Is contemporary cosmology relevant to the Christian doctrine of creation? How do you assess the design and cosmological arguments in light of contemporary cosmological theories? How do you evaluate the Anthropic Principle in light of contemporary cosmology?

Readings:
(1) Worthing. Ch. 2 “Does God Exist?”; Ch. 3 “Did God Create the Universe Out of Nothing?” (required)

(2) Brody. Part 4 “Big Bang and the Birth of the Universe” [T](recommended).


Week 9. Religion and Science in the Western Tradition (4): Genetics and Anthropology

Objective: to have students get acquainted with contemporary genetic biology and its ethical, religious and theological implications.

Lecture Outline:

(1) Human nature in genetics perspective: Guest speaker, Professor Jae Chun Choe (Department of Biology, Seoul National University).

(2) Genetic determinism and human freedom: Contemporary debate on sociobiology (cf. Wilson; Rolston).

(3) Interpretation of the Christian doctrine of the imago Dei in light with genetic biology (cf. Hefner).

(4) Interpretation of the Christian doctrine of original sin in light with genetic biology (cf. Hefner).

Discussion: How do you critically evaluate Professor’s Choe’s position and E.O. Wilson’s sociobiology? Discuss on Philip Hefner’s view on moral failure.
Readings:


(4) Rolston, Holmes III. 1999. Ch. 2 “Genetic Identity: Conserved and Integrated Values” (recommended); Ch. 6 “Religion: Naturalized, Socialized, Evaluated” (recommended).


Week 10. Religion and Science in the Western Tradition (5): Neuroscience and Anthropology

Objective: to have students get acquainted with contemporary neuroscience and its religious implications.

Lecture Outline:
(1) The human soul in view of contemporary neuroscience: Guest speaker, Professor Kyoon Huh (Department of Neurology, School of Medicine at Ajou University).

(2) An introduction to nonreductive physicalism (cf. Murphy; Jeeves; Brown).

(3) Biblical and theological anthropology (cf. Anderson; Green).


Discussion: What do you learn most from contemporary neuroscientific findings? How do you critically evaluate nonreductive physicalism? What do you think about the personal and ecclesiological significance of embodiment?

Readings:


Objective: to familiarize students with the current development of biotechnology and its socio-cultural implications, and stimulate critical thinking about the role of religion with regard to this issue.

Lecture Outline:
(1) A holistic meaning (with multiple parameters) of justice in a technological society and the role of religion from a systems-theoretical perspective (cf. Moon; Barbour).


(3) Socio-cultural implications of bio-technology (cf. Rifkin).

(4) Ethical and religious reflections on bio-technology: the many issues such as distribution and diversity (cf. Peters; Greely; Lebacqz).

Discussion: How do you view technology in view of its social impact? How do you assess the socio-cultural implications of cloning technology and the Human Genome Project? What is your thinking about the role of religion in this context?

Readings:
(1) Moon, Young Bin. 2001. “Technology and Quest for a Just Society” (required).

(2) Barbour, Ian. 1993. Ch. 1 “Views of Technology”; Ch. 2 “Human Values” (recommended).


Objective: to familiarize students with diverse religious responses to global ecological crisis.

Lecture Outline:
(1) Global ecological crisis and its deep causes (cf. White).

(2) Diverse Christian responses to environmental crisis: stewardship, Moltmann’s view of creation, process theology, and feminist theology.
Various religious models on the God-world relationships (cf. McFague).

Other religious response to ecological crisis: Buddhism and Confucianism (cf. Kim).

Discussion: How do you assess various religious responses to ecological crisis?

Readings:

Week 13. Religion and Science in the Asian/Korean Tradition (1): A Brief History

Objective: to familiarize students with the history of Chinese/Korean science in relation with religion.

Lecture Outline:
(1) A brief history of Chinese/Korean science: Guest speaker, Professor Young Sik Kim (Department of History of Science, Seoul National University).
(2) The relation between cosmology and religion in Korean thought (cf. Lee).

Discussion: How do you compare the historical science-religion interactions in Korea with those in the West?

Readings:
(1) Kim, Young Sik et al. 1992. Part III “Traditional Science in East Asia” [Korean](required).
(3) Kim, Yong-Un. 2001. Chaos and Buddhism [Korean](recommended).


Objective: to have students get acquainted with Korean Silhak thought, a branch of neo-Confucianism (flourished in the 19th century), which embraced the Western science and Christianity in unique fashion.

Lecture Outline:
(1) Consonance of Confucianism, Christianity, and Science: Guest speaker, Professor Heup Young Kim (Department of Theology, Kangnam University).

(2) An introduction to Korean Silhak thought. Particular attention will be given to cosmological, anthropological, and ecological issues and their holistic relationships in the Silhak thought.

Discussion: How do you critically assess Korean Silhak thought?

Readings:


Week 15. Conclusions: Religion and Science for a Holistic View of God, the World, and Humanity.

Objective: to draw some conclusions about the consonance between religion and science.

Lecture:
(1) Revisit the typologies on the science-religion relationship and reassess them.

(2) Think about their relationship in light of the holistic view of God, the world, and humanity in close connections.

Discussion: Presentation of final paper drafts and discussions about them. Instructor’s constructive comments on final papers.

Week 16. Final Paper Due

Student Evaluation

Attendance and feedback journal (due weekly): 20%
Discussion (weekly class and website): 20%
Group research paper (due 10th week): 20%
Media coverage collection (due 16th week): 10%
Final research paper (due 16th week): 30%

Bibliography (alphabetical order)


