

Body and Spirit: Toward a Mutual Understanding

Institution: Department of Radiology & Department of Psychiatry, Hospital of the University of Pennsylvania

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Course Description

Overview

This course is designed to present students with the vast amount of data regarding the relationship between the body and spirit in an attempt to break down the traditional dualism between them. The data will be derived from research articles and books that encompass the scientific, medical, psychological, pastoral, and religious disciplines. Further, since this data is often expressed with distinctions between the body and the spirit, this course will begin with the usual presentation of such research reports and explore whether this duality can ultimately be broken down. Thus, course discussion regardless of whether the topic is more specifically the body or more specifically the spirit, will always engage students to explore their interrelationship and interdependence. Students who traditionally do not have access to such research will explore the many aspects relating the body and the spirit. They will learn how to critically review research reports on topics related to body function and spiritual experience. Thus, they will learn what scientific modalities are currently available to study the relationship between the body and the spirit. They will also learn the limitations of these modalities and consider ways in which to improve them. Such modalities will include both the use of scientific measuring instruments, other measures related to spirituality and physiology, and study design. The course will explore the relationship between the brain, the mind, and spiritual experience and will consider the most up-to-date theories on their relationship. The course will challenge students to develop new approaches to their own fields of study so that they may utilize such knowledge in their future endeavors. Faculty will also be invited to attend so that those not typically in touch with existing scientific methods from the biological and health sciences may have access to the data.

In order to accomplish these goals, the course will be based upon a diversity of articles and books on the topic relating the body to the spirit. Such works will draw from a number of scholars in the field. The course will explore both traditional as well as “cutting-edge” research as well as consider the historical approach to the issue regarding the relationship between the body and spirit. The analysis of this field will proceed both in terms of how an understanding of the body can be used to understand the spirit and how knowledge of spiritual experience can help provide a better understanding of the body. Lectures will explore the many aspects of the relationship between the body’s functioning and spiritual experience and class interaction and interpretation will be encouraged. Further, students will present journal articles that they have critically analyzed in order to consider the data in more detail and also to interpret the findings more accurately.

This course will be designed primarily for graduate level students pursuing advanced degrees in religious studies, neuroscience, psychology, philosophy, and medicine. The course will also be made available to upper level undergraduate students.

Course Syllabus

Part I. Body Physiology and Religious and Spiritual Experiences

1. General and Historical Introduction: The first class will lay the framework for the remainder of the course. Particular attention will be given to the history of the study of spirituality and the body. What has been the traditional approach of science to these questions? What are the current perspectives on such studies? We will address questions related to the history of science and its interaction with spiritual matters. We will also consider how advances in technology have allowed us to open up new windows into the relationship between the body and spirit. This will include the review of current scientific methods as they may pertain to the study of religiousness and spirituality.

2. Introduction to Scientific Research Methods and Interpretations: This will explore the requirements of “good” research from the perspective of the health and biological sciences. Basic concepts regarding how to critically analyze articles, what problems and issues need to be considered, and data interpretation will be covered. A general discussion of statistical issues and how data are analyzed will also be considered. These issues will be crucial to help students develop a critical eye towards scientific research involving the body and the spirit. It is necessary for students to be able to determine if a study provides appropriate and accurate data and that the conclusions drawn from the data by the investigators are relevant and substantiated. Interpretation is particularly a problem in this area of research since it is not only the data, but what the data mean that becomes relevant in the discussion of the relationship between the body and spirit.

Readings: NIHR Consensus Report, pp. 1-30; Barbour 1990, pp. 31-66.

3. The Body’s Response to Spiritual Experiences: This session more directly explores the impact of spiritual experience on the body, particularly physiological changes. There have been a wide variety of articles published that show associations of various clinical parameters (which can be either objective or subjective measures) to spiritual experience. Objective changes include those to the immune system, autonomic nervous system, and hormonal system. Subjective changes include alterations in a person’s sense of meaning and belonging, levels of anxiety and depression, and interpersonal skills. Both objective and subjective measures provide information that can be useful to begin to develop models of how spiritual experiences interrelate with the body’s functions. With regards to the particular type of spiritual experience, some may be planned such as during meditation and some might be unplanned such as near death experiences. Regardless, all of these spiritual experiences can be examined and added to the pool of data.

Readings: NIHR Consensus Report, pp 31-54; Corby 1978; Jevning 1992; Massion 1995; Sudsuang 1991.

4. Relationship Between Physical Health and Spirituality: This will review the current understanding of the relationship between physical health and spirituality. This field of research provides important information about the relationship between the human body and the human spirit. Clinical data regarding the relationship between a person's overall sense of spirituality and their physical and psychological well being will be explored. Also, the effects of specific interventions such as meditation and prayer can add to the data. All of this data can be utilized to help develop models of how the body and spirit are interrelated.

Readings: Koenig 1997; Levin 1989, 1994, 1996; Matthews 1998; Supplemental Reading: Benson 1996.

Part II. Psychology and Religious and Spiritual Experiences

5. Mental Illness and Spiritual Experience: This class shifts the focus to more psychological aspects of the person. The mind and body are interrelated and thus, it becomes crucial to understand how spirituality and the mind are related. This class will review the current understanding of the relationship between mental health and spirituality. The traditional interpretation of religious and spiritual experiences as being pathological from the psychological perspective will be explored. Specifically, certain spiritual experiences are prevalent in the patient populations with schizophrenia, mania, and seizures. However, we will consider the problem of considering all spiritual experience to be associated with psychopathology. We will also consider whether there can be spiritual experiences that have negative impacts on people and whether spirituality can be considered pathological at all. The current understanding of such experiences will be considered in order to expand on the relationship between the mind and the spirit.

Readings: NIHR Consensus Report, pp.55-82; Koenig 1998, pp. 34-95.

6. Psychological Interpretations of Spirituality: How does spirituality affect us psychologically and can spirituality be useful to help with various psychological problems? We will consider the psychological roots of spirituality and how spiritual experience may alter our psychology. We will consider how our interpretation of spirituality is necessarily limited by how we describe our feelings and thoughts. Thus, we describe spiritual experiences in terms of the emotions that are felt and the associated sensory perceptions. A person ultimately derives meaning from the spiritual experience in terms of their psyche and their ability to think about the experience. This issue will carry over into the next class which will consider how we can distinguish spirituality from psychology.

Readings: Koenig 1998, pp. 112-202; Neeleman 1995; Kabat-Zinn 1992.

7. Distinguishing Spirituality from Psychology: One of the most interesting issues is whether there is something intrinsically spiritual that can be distinguished from any type of psychological construct. This question will be explored as it relates to spiritual awakenings and their associated changes in the person having these experiences. An

important focus will be how spirituality is measured from a psychological perspective. What variables might be measured and how they relate to an intrinsic spirituality will be considered.

Readings: Greenwell 1998; Supplemental Reading: Eliade 1964.

8. Journal Article Presentation: Each student will make a 10 minute presentation describing a research article that they have chosen. They will review the article and critically analyze its findings. They will also suggest the religious and scientific implications of such findings. The class will receive all the articles prior to each class. Following each presentation, the class will be able to ask questions and make comments. Half of the class will make presentations the first day and half will make presentation the following week.

9. Journal Article Presentation: The remainder of the students will make a 10 minute presentation describing a research article that they have chosen.

Part III. The Brain and Religious and Spiritual Experiences

10. Basic Brain Function and its Relationship to Spiritual Experience: This will introduce the topic of how the brain functions in general and how these functions may be related to spiritual experiences. We will explore the higher cognitive areas of the brain, how they developed, and how they function to provide us with abstract concepts, language, sensory perception, and behavior. We will discuss how these higher areas are connected to the limbic, or emotional, system. Finally, we will consider how the brain is tied into the body and how various types of brain activity might affect the body.

Readings: Austin 1998, pp. 149-292; Churchland 1984, pp. 99-170; Supplemental Reading: Ashbrook 1996; Restak 1995; Laughlin 1992.

11. The Neurophysiology of Specific Spiritual Practices: This session will explore the details of how spiritual experiences alter the brain directly. How can we understand such experiences from the perspective of brain function? We will explore a variety of models regarding how brain function is associated with spiritual experience. We will review and critique studies which link certain parts of the brain to spiritual experiences and determine what aspects of brain function are necessary for such experiences to be perceived. We will also consider the future of such research and determine what might be the best methods for pursuing such a field of study.

Readings: NIHR Consensus Report, pp. 83-103; Austin 1998, pp. 521-624; d'Aquili 1993; Greyson 1998; Newberg 1994; Surwillo 1978; Wright 1989.

12. Tour of Functional Imaging Facility: This session will explore how experiments designed to explore the human mind during spiritual experiences are developed and performed. The tour will be of the imaging facilities at the Hospital of the University of Pennsylvania.

13. Neuropsychological Implications for Religion and Theology: This will consider what implications there may be once we consider the neuropsychological effects of religious and spiritual experiences. Such studies may have important implications for the study of theology and how human beings understand their relationship to God. We will explore the importance of an integrated approach to the body and spirit question. We will consider how science can help us understand these experiences and how can these experiences help us to understand science?

Readings: d'Aquili 1999; Churchland 1990, 403-480; Austin 1998, pp. 627-694; Ashbrook 1984; Supplemental Reading: d'Aquili 1979; Hundert 1989.

Course Requirements

Class attendance and participation and the readings are required and constitute 25% of the grade. Unexcused absence from more than two classes may result in failure from the course. The journal article presentation will constitute 25% of the grade and the final paper will constitute 50%. The final paper will be a 10-15 page paper that will describe an area of interest to the student and will consider how biological, health, and neuroscience research might relate, what are the implications of such research, and how future research may be pursued. The paper must be adequately referenced.

Reading List

Ashbrook J. *The human mind and the mind of God: Theological promise in brain research*. New York: University Press of America, 1984.

Ashbrook J. *The humanizing brain: Where religion and neuroscience meet*. Cleveland: Pilgrim Press, 1996.

Austin JH. *Zen and the brain: Toward an understanding of meditation and consciousness*. Cambridge, MA: MIT Press, 1998.

Barbour I. *Religion in an age of science*. New York: HarperCollins, 1990.

Churchland PS. *Neurophilosophy: Toward a unified science of the mind-brain*. Cambridge, MA: MIT Press, 1986.

D'Aquili EG, Newberg AB. *The mystical mind: Probing the biology of spiritual experience*. Minneapolis: Fortress Press, 1999.

Eliade M. (1964). *Shamanism: Archaic techniques of ecstasy*. Princeton: Princeton University Press.

Greenwell B, Luchakova O. *Kundalini Research Network International Symposium Proceedings*. Madison: Omnipress, 1998.

Koenig HG (editor). *Handbook of religion and mental health*. San Diego: Academic Press, 1998.

Koenig HG. *Is religion good for your health? Effects of religion on mental and physical health*. New York: Haworth Press, 1997.

NIHR Consensus Report on Spirituality and Health. Rockville, MD: NIHR.

Restak R. *Brainscapes: An introduction to what neuroscience has learned about the structure, function, and abilities of the brain*. New York: Discover Books, 1995.

Articles:

Ashbrook, J. "Neurotheology: The working brain and the work of theology." *Zygon* 19:331-350, 1984.

Corby JC, Roth WT, Zarcone VP, Kopell BS. Psychophysiological correlates of the practice of Tantric Yoga meditation. *Arch Gen Psychiatr* 35:571-77, 1978.

d'Aquili EG and Newberg AB. "Religious and mystical states: a neuropsychological substrate." *Zygon* 28: 177-200, 1993.

Greyson B. Biological aspects of near-death experiences. *Perspect Biol Med* 74:1-19, 1998.

Jevning R, Wallace RK, Beidebach M. "The physiology of meditation: A review. A wakeful hypometabolic integrated response." *Neurosci Biobehav Rev* 16:415-424, 1992.

Kabat-Zinn J., Massion AO., Kristeller J. et al. "Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders." *American Journal of Psychiatry* 149:936-43, 1992.

Levin JS. "Religion and health: is there an association, is it valid, and is it causal?" *Social Science & Medicine* 38(11):1475-82, 1994.

Levin JS., Vanderpool HY. "Is religion therapeutically significant for hypertension?" *Social Science & Medicine* 29(1):69-78, 1989.

Levin JS. How prayer heals: A theoretical model. *Alternative Therapies Health Med* 2:66-73, 1996.

Massion AO, Teas J, Hebert JR, Wertheimer MD, Kabat-Zinn J. "Meditation, melatonin and breast/prostate cancer: Hypothesis and preliminary data." *Medical Hypothesis* 44:39-46, 1995.

Matthews DA, McCullough ME, Larson DB, et al. "Religious commitment and health status: A review of the research and implications for family medicine." *Arch Fam Med* 7:118-124, 1998.

Neeleman J, Persaud R. "Why do psychiatrists neglect religion?" *Brit J Med Psychol* 68:169-178, 1995.

Newberg AB and d'Aquili EG. "The near death experience as archetype: A model for 'prepared' neurocognitive processes." *Anthropology of Consciousness* 5:1-15, 1994.

Saver JL, Rabin J. "The neural substrates of religious experience." *J Neuropsychiatr Clin Neurosci* 9: 498-510, 1997.

Sudsuang R, Chentanez V, Veluvan K. "Effects of Buddhist meditation on serum cortisol and total protein levels, blood pressure, pulse rate, lung volume and reaction time." *Physiol Behav* 50: 543-548, 1991.

Surwillo WW, Hobson DP. "Brain electrical activity during prayer." *Psychol Rep* 1978; 43:135-143.

Wright PA. "The nature of the shamanic state of consciousness: A review." *J Psychoactive Drugs* 21:25-33, 1989.

Supplemental Reading List:

Benson H. *Timeless healing*. New York: Scribner, 1996.

D'Aquili EG, Laughlin CD, McManus J. *The spectrum of ritual*. New York: Columbia University Press, 1979.

Hundert E. *Philosophy, psychiatry, and neuroscience: Three approaches to the mind*. Oxford and New York: Clarendon, 1989.

Laughlin CD, McManus J, d'Aquili EG. *Brain, symbol and experience: Toward a Neurophenomenology of human consciousness*. New York: Columbia University Press, 1992.