

In terms of the study of spirituality, Janet Ruffing reported on her qualitative research and argued that the kataphatic path of development can be lifelong and not merely a beginning to a final apophatic phase. In her words:

God can be sought and experienced contemplatively whether or not that experience is mediated by something other than consciousness itself. It is God who is disclosing God's self to the person. In neither case can the person control the experience.

Interviewees in Ruffing's research experienced three or more mediated modes of religious experience, often nature, music, and imagery; over time, many life-events became sacramental; relationships with others and the world were transformed, meeting criteria for maturity and authenticity—hence her title, "The World Transfigured."

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THEOLOGY AND THE NATURAL SCIENCES

THE ORIGIN OF LIFE IN THE UNIVERSE

Presenters: Cyril Ponnampereuma, Laboratory of Chemical Evolution,
University of Maryland
Stephen P. Happel, Catholic University of America

Ponnampereuma gave a detailed summary of what we know from the sciences about the chemical evolution leading up to the initiation of life on Earth. The formation of molecules of biological significance, such as the nucleic acids, which are the components of DNA and RNA, and the amino acids which are the building blocks for all the proteins, was a necessary preamble to the emergence of life. There is overwhelming evidence that this prebiotic step in chemical evolution has occurred in many other places in the universe. The analysis of carbonaceous chondrites has revealed the presence of such molecules, and radio astronomers have discovered a vast array of organic molecules in the interstellar medium. We are thus led to the possibility that life may be commonplace in the universe, even though we have not yet unravelled all the details of how the remarkable transition from nonliving to living matter actually took place. Labora-

tory experiments help us retrace the path of chemical evolution and indicate some of the ways this transition may have occurred. In fact it is difficult to distinguish precisely at the molecular level between what is nonliving and what is living. One day radio signals may reveal the presence of our distant neighbors.

Happel offered a series of theological reflections on Ponnampereuma's presentation. Limit questions, such as the possibility of extraterrestrial life, provoke thinkers into fundamental problematics; but they also raise important issues whether human beings are the only self-conscious life forms or not.

Few theologians realize that Christian thinkers from ancient times well into the present entertained the possibility of other worlds and other self-conscious beings. *Methodologically*, Christians must query whether, in their conversation with the natural sciences, thinkers mean anything analogous by terms such as "origins" and "creation." What kinds of language (rhetoric, poetics, dialectics, pragmatics) do theology and the sciences use in common? Which are different? What are the rules for such a conversation? Can theology contribute truths that science would recognize as valid? And vice versa?

Conceptually and doctrinally, is thinking about the probability of extraterrestrial life a threat to the centrality of human dignity? And what of Jesus? Can the metaphors for transformation of sin and death in the New Testament be explored for their universality? The question "What are humans saved from and for?" is also at stake. There is a strong Christian tradition that not only human history, but also the cosmos, have been disordered through human sinfulness. How do we distinguish between "natural" evils and "malice"? Can the disorder in the universe affect even those realities that have not derived their life from human biology? And what about God? Does making God the primary analogate for the term "living" change our human preoccupation with our particular form of life? The possibility that there is a divine reality that can encompass whole worlds in this universe, or multiple actual universes over which we humans have no information, let alone control, without losing attention to this universe requires concrete reexamination of divine omnipotence, omniscience and love. Decentering our own human egos, discovering that life may require a broader definition than human life, attending to a neighbor (whether God or other alien life) may be a fascinating opportunity for religion and theology.

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