

STUDY GUIDE: AWE AND WONDER: SCIENTISTS REFLECT ON THEIR VOCATIONS

By Dr. Joshua M. Moritz

VIDEO SUMMARY: Scientists reflect on the role of awe and wonder within their research.

CONTRIBUTORS

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Sean B. Carroll – Vice President, Science Education, Howard Hughes Medical Institute; Allan Wilson Professor of Molecular Biology and Genetics, University of Wisconsin

David Charbonneau – Professor of Astronomy, Harvard University

Guy Consolmagno – Director of Vatican Observatory

Georgia Dunston – Professor of Microbiology and Founding Director, National Human Genome Center, Howard University College of Medicine

Sylvester James Gates –University System of Maryland Regents Professor and John S. Toll Professor of Physics, University of Maryland

Jeff Hardin – Professor of Zoology, University of Wisconsin

William Newsome –Professor of Neurobiology, Stanford University

Richard Potts – Director of Human Origins Program, Smithsonian Institution

Michael Ruse –Director of the Program in the History and Philosophy of Science, Florida State University

Neil Shubin – Professor of Organismal Biology and Anatomy, University of Chicago

Jennifer Wiseman – Astronomer, Director of AAAS Dialogue on Science, Ethics, and Religion

Huda Zoghbi – Professor, Baylor College of Medicine; Director, Jan and Dan Duncan Neurological Research Institute at Texas Children’s Hospital

DISCUSSION QUESTIONS

In this film, physicist S. James Gates describes scientific inspiration as something “unworldly.”

1. Have you ever experienced a moment of inspiration? If so, would you describe this experience as “unworldly” or “other-worldly”? Why or why not?
2. Where do you think genuinely new ideas come from?
3. Do you think there could be a connection between inspiration in science and what philosophers of religion call Ultimate Reality or Transcendent Truth? Why or why not?

In this film, astronomer Guy Consolmagno says, “This is what makes us human--this ability to look at the sky with wonder.”

4. Have you ever stood in awe or wonder at the beauty of something in the world or some feature of the physical universe? Describe your moment of awe or wonder.
5. What do you think is the source of the awe or wonder that you experienced?
6. How does awe or wonder relate to the human experience of the Transcendent?

In this film, astronomer Jennifer Wiseman and neuroscientist William Newsome speak about the role of curiosity as it relates to inspiring the scientific quest to figure out how humans fit into the larger scheme of things.

7. Do you think curiosity is always good thing? Why or why not?
8. Where do you think curiosity comes from?
9. Do you think curiosity plays a role in the religious quest for meaning?

In this film, paleontologist Neil Shubin speaks about connections between humans and other organisms. Biologist Rick Potts reflects on the “kinship that human beings share with all other creatures on Earth.”

10. Have you ever felt a sense of kinship with a non-human animal? If so, describe this experience.

11. Do you think there is any deeper theological meaning to the biological connectedness that humans share with other creatures?
12. Hebrew Bible scholar Iain Provan points out that in the Genesis creation accounts, the “emphasis lies on the commonality that exists between humans and the rest of the animal creation.” (*CRUX* 42:2, Summer 2006: 5). How does Provan’s theological understanding of the relationship between humans and animals relate to the observations of the scientists featured in this video?

FURTHER RESOURCES & SUGGESTED READINGS

On the beauty and wonder of physical reality as it relates to the Transcendent:

- William P. Brown, *The Seven Pillars of Creation: The Bible, Science, and the Ecology of Wonder* (Oxford University Press, 2010).
- Guy Consolmagno, *The Heavens Proclaim: Astronomy and the Vatican* (Vatican City State, 2009).
- Celia Deane-Drummond, *Wonder and Wisdom: Conversations in Science, Spirituality and Theology* (DLT, 2006).
- Owen Gingerich, *God’s Universe* (Harvard University Press, 2006).
- David Bentley Hart, *The Beauty of the Infinite* (Eerdmans, 2003).
- Lydia Jaeger, *What the Heavens Declare: Science in the Light of Creation* (Wipf and Stock, 2012).
- Alister McGrath, *Glimpsing the Face of God* (Eerdmans, 2002).

On scientific inspiration, curiosity, and the Transcendent:

- John H. Brooke, “Inspiration in Science and Religion: Historical Perspectives,” in *Inspiration in Science and Religion*, Michael Fuller, ed. (Cambridge Scholars Press, 2012), 1-20.
- Philip Clayton and Jim Schaal, eds. *Practicing Science, Living Faith: Interviews with 12 Leading Scientists* (Columbia University Press, 2007).

On the theological meaning of human kinship with other species:

- David Clough, *On Animals: Volume I: Systematic Theology* (T&T Clark, 2012).
- Andrew Linzey, *Creatures of the Same God: Explorations in Animal Theology* (Lantern Books, 2009).
- Joshua Moritz, “Animals and the Image of God in the Bible and Beyond,” *Dialog: A Journal of Theology* 48:2 (2011): 134-46.
- Paul Waldau and Kimberley Patton, eds., *A Communion of Subjects: Animals in Religion, Science, and Ethics* (Columbia University Press, 2006).

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