



# National Center for Science Education

Defending the Teaching of Evolution in Public Schools

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## Guide to *Episode 6: The Mind's Big Bang*

For a 45–60 minute dialogue on Episode 6 of *Evolution*

By Phina Borgeson, M.Div.

“Human beings are part of the history of the universe. What is most particular to them is that they are part of the universe that has become self-conscious and is therefore able to enter into conscious relationship with the God who holds them in existence and invites them into communion.”

— Denis Edwards, *The God of Evolution: a Trinitarian Theology* (Mahwah NJ: Paulist Press, 1999), 77.

### Image

The visuals of human hands keep running through the series. Prominent in this episode are the hand holding the basic stone tool, the hands unearthing beads at the dig site, people communicating with their hands, the hand stenciled on the cave wall. Are there additional images of hands that you recall?

### Dig

Perhaps the hands symbolize our inability to get a handle on the evolution of human symbol-making and language! Scientists continue to live with many questions and differences of opinion. Did human language abilities evolve suddenly, perhaps around 50,000 years ago, or over a long period in hominid life? If the process was gradual, did the selective value of language drive the evolution of larger brains, or were language and symbol-making a by-product of larger brains which were selected for because of other survival advantages? What evidence did you see to support different views? How are scientists attempting to answer these questions?

### Dialogue

The question of what's unique about human beings is in one sense answered in this episode. The narrator says that, “Ours was a routine story of evolution, yet one which produced behaviors never before found on earth.” Clearly the ability to create symbols, use language, and reflect consciously is related to our capacity to be religious persons. Believers who do not ascribe to God direct and immediate causality for these traits still recognize their significant use in response to God.

How does the scientific exploration of the development of human mind inform your response to God?

What does your faith tradition say about the use of the human mind in understanding the world?

### Explore

1. If you are interested in learning more about the notion of memetic evolution, you can find its genesis in Richard Dawkins's *The Selfish Gene* (originally published in 1976, available in a 1990 paperback edition from Oxford University Press). Susan Blackmore, featured in the episode,

extends the idea in *The Meme Machine* (Oxford: Oxford University Press, 2000).

2. Resources for learning more about human evolution abound. One very readable volume is *The Origin of Modern Humans* by Roger Lewin (New York: Scientific American Library, 1998). The last two chapters, on symbolism, images, and language, will be of particular interest.

## **Act**

Toward the end of the episode, illustrations of how human culture and intelligence shape evolution are presented. Medical advances, for example, the use of insulin, have enabled us to conquer and change some biological pressures. What other examples can you think of? Can you identify ones that seem to require ethical reflection by the faith community? Find out if your denomination or faith community has groups organized to work on these issues, and get involved.

Please send comments on these guides, and any questions about ideas and resources for extending the conversation, to:

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