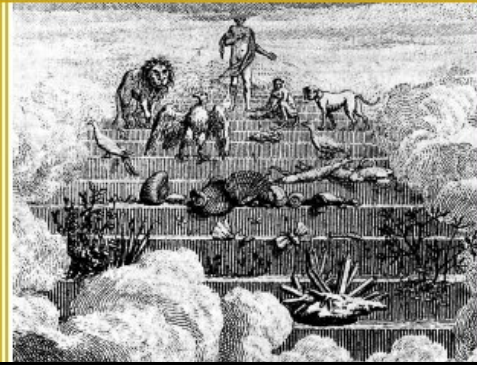


The Emergence of Personhood: A Quantum Leap?

Kavli Royal Society International Centre
Chicheley Hall, Chicheley, England
22, 23, and 24 October 2011


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Contact: Mary Ann Meyers, Ph.D., *Senior Fellow*

Purpose

ABOVE: Scala Naturae from *Oeuvres d'histoire naturelle et de philosophie* (1781) by Charles Bonnet, the Swiss naturalist who was one of the foremost champions of the ancient idea of a great chain of being as a continuous hierarchy of created things.

“What is man?...
You have made him
a little lower than
the heavenly beings
and crowned him
with glory and
honor. You have
given him dominion
over the works of
your hands...”

Psalm 8:4-6 (ESV)

Humans are strange and complicated creatures. We share many traits, including cognitive skills and emotions, with many other animals, and increasingly we learn that the borders between "them" and "us" are murky and permeable. But, it is claimed, self-consciousness, and with it language and culture, sets us apart.

The purpose of the discussion is to relate new insights from a range of sciences, including evolutionary psychology, cognitive neuroscience, neurology, genetics, archaeology, and anthropology, to the understanding of *who we are*, as well as to consider how traditional philosophical and theological understandings of human uniqueness may be affected by these insights. Research has shown not only shared neuroanatomical structures among mammals but also actual affective commonalities such as the ability to feel pain and seek pleasure, emotions like fear, greed, anger, jealousy, and affection, and even a capacity for empathy. To what degree other species have the capability to understand another individual's behavior is a matter of debate. But it is less the question of whether animals can be considered in any sense moral beings that concerns the scholars and scientists gathered at Chicheley Hall, a Georgian country house in North Buckinghamshire, than questions related to the development of linguistic competence, reasoning, and the ability to objectify the world around us in distinction from self.

- If precisely how the human mind achieved its present state of complexity remains a mystery, what can we say at this stage, after several decades of groundbreaking discoveries related to the dynamics of human behavior, about the emergence of our capacities for reflection, rationality, and deliberation, including ethical decision-making and planning for the future?
- When did introspection become a defining human characteristic?
- What, if any, is the scientific evidence for the intuitive presumption of a correlation between various forms and levels of consciousness and different degrees and types of freedom and self-determination?
- Is there any basis for accommodation between the idea that human nature consists of evolved psychological adaptations to recurring problems in the ancestral environment and the theological concept of the *imago Dei* (Gen. 1:26), that is, of human persons as creatures reflecting the image of their Creator?
- Do we need to revisit our assumptions about the content of religious belief and the reasons we take it to be reliable in light of a new understanding of the cognitive mechanisms whose side-effects may have produced many features associated with religion?
- What are the implications of compelling evidence that human identity is forged socially for the possible role of ritual in the development of symbolic thought?

The probe for answers brings researchers from anthropology, archaeology, biology, psychology, and neurobiology together for conversation with philosophers and theologians in a beautiful Midlands manor house surrounded by a one-hundred-acre park west of the River Great Ouse.

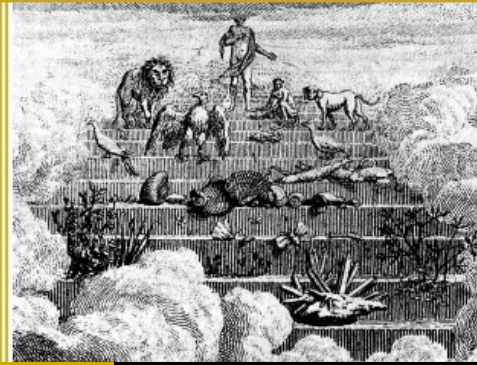
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Approach

“I fully subscribe to the judgment... that of all the differences between man and the lower animals the moral sense or conscience is by far the most important.”

Charles Darwin,
*The Descent of Man
and Selection in
Relation to Sex* (1871)



he symposium is part of the Templeton Foundation's *Humble Approach Initiative*. The goal of the initiative is to bring about the discovery of new spiritual information by furthering high-quality scientific research. The "humble approach" is inherently interdisciplinary, sensitive to nuance, and biased in favor of building linkages and connections. It assumes an openness to new ideas and a willingness to experiment. Placing high value upon patience and perseverance, it retains a sense of wondering expectation because it recognizes, in Loren Eiseley's haunting phrase, "a constant emergent novelty in nature that does not lie totally behind us, or we would not be where we are." A fundamental principle of the Foundation, in the words of its founder, is that "humility is a gateway to greater understanding and open[s] the doors to progress" in all endeavors. Sir John Templeton believed that in their quest to comprehend foundational realities, scientists, philosophers, and theologians have much to learn about and from one another. The humble approach is intended as a corrective to parochialism. It encourages discovery and seeks to accelerate its pace.

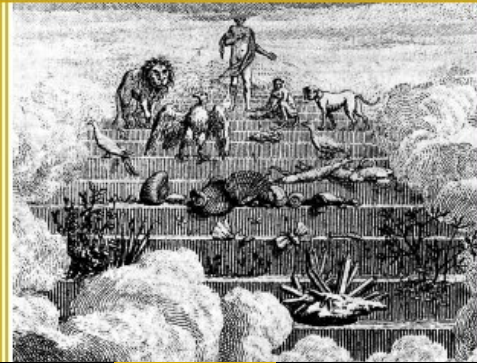
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Chair

“Consciousness
[affords] a Being to
be Present with it
self, Attentive to its
own Actions or
Animadversive of
them, to perceive it
self to Do or Suffer,
and to have a
Fruition
or Enjoyment of
it self.”

Psalms 8:4-5

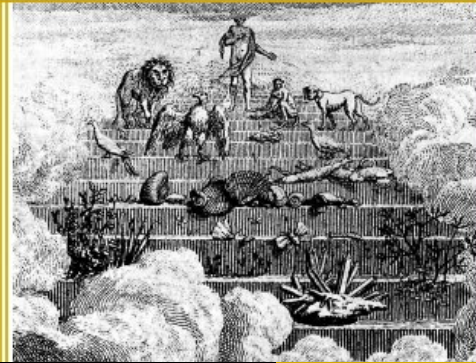
The eminent neuropsychologist **Malcolm A. Jeeves**, a past president of the Royal Society of Edinburgh, Scotland's National Academy, is professor emeritus of psychology at the University of St. Andrews. He was Foundation Professor of Psychology there from 1969 to 1993 and established the university's acclaimed psychology department. His own research has focused on brain mechanisms and neuroplasticity. Educated at the Stamford School in Lincolnshire, he went up to Cambridge University after serving as an acting company commander with the 1st Battalion Sherwood Foresters (part of the "Desert Rats") in Germany following World War II. He studied natural sciences at St. John's College, received his Ph.D. in psychology from Cambridge in 1956, and also did graduate work at Harvard University. Before joining the St. Andrews faculty, he was a lecturer at Leeds University and Foundation Professor of Psychology at Adelaide University in South Australia. He served as vice principal of St. Andrews from 1981 to 1985 and as director of the Medical Research Council's Cognitive Neuroscience Research Group at St. Andrews from 1981 to 1986. A past member of three of Britain's most active research bodies, the Science and Engineering Research Council, the Neuroscience and Mental Health Board of the Medical Research Council, and the Manpower Sub-Committee of the Advisory Board for the Research Councils, Dr. Jeeves was formerly chairman of the International Neuropsychology Symposium and editor-in-chief of *Neuropsychologia*. He is a fellow of the Academy of Medical Sciences, the British Psychological Society, and the Australian Psychological Society, as well as the recipient of South Australia's Abbie Medal and the Cairns Medal given by the Society of Neurologists and Neurosurgeons of South Australia. Queen Elizabeth II made him a Commander of the British Empire in 1992. He has received honorary doctoral degrees from the universities of Edinburgh, St. Andrews, and Stirling. Dr. Jeeves is currently a member of the board of advisors of the John Templeton Foundation. The author of more than one hundred scientific papers and fifteen books, including eight related to science and faith, his most recent studies are *Human Nature at the Millennium* (1997), (with R.J. Berry) *Science, Life, and Christian Belief* (1998), an edited volume of essays, *From Cells to Souls—and Beyond: Changing Portraits of Human Nature* (2004), and (with Warren Brown), *Neuroscience, Psychology, and Religion: Illusions, Delusions, and Realities about Human Nature*, an overview of what brain science can tell us about the phenomenon of religiosity, which was published by the Templeton Press in 2009. His most recent edited volume, *Rethinking Human Nature*, was published by Wm. B. Eerdmans in 2011. Dr. Jeeves is honorary sheriff of Cupar, Fife in Scotland.

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Adam Zeman

Francisco J. Ayala is a pioneering geneticist and evolutionary biologist who has vigorously opposed the entanglement of science and religion while also calling for mutual respect between the two domains. The winner of the 2010 Templeton Prize and the 2001 U.S. National Medal of Science, he is University Professor and Donald Bren Professor of Biological Sciences at the University of California, Irvine (UCI), where he also holds appointments as professor of philosophy and professor of logic and the philosophy of science. Dr. Ayala's groundbreaking research on parasitic protozoa has opened up new approaches to the prevention and treatment of tropical diseases that affect hundreds of millions of people. Most recently, his discovery of the origin of the parasite that causes malignant malaria in humans has attracted world-wide attention because of the potential that the knowledge gained may one-day lead to a vaccine. He revolutionized evolutionary theory when he was among the first to use molecular biology in the investigation of evolutionary processes. His work not only led to new discoveries but also to a new understanding of the origin of the species, the pervasiveness of genetic diversity, the genetic structure of populations, and rates of evolution. Early in his career, he used novel experimental methods to investigate population ecology, which allowed him to resolve outstanding contradictions between theory and experience and explain population dynamics as the conjunction of genetic and environmental factors. Born in Madrid, Dr. Ayala received his baccalaureate degree in physics from the University of Madrid and then went on to study theology at the Pontifical Faculty of San Esteban in Salamanca. He was ordained a Dominican priest in 1960, but chose to leave the priesthood to study genetics with the Ukrainian-born scientist Theodosius Dobzhansky at Columbia University, where he earned a Ph.D. in genetics in 1964. After post-doctoral research at The Rockefeller University, he was appointed an assistant professor of biology at Providence College in Rhode Island and, in 1968, assistant professor at Rockefeller University. In 1971, the year he became an American citizen, he was named an associate professor of genetics, at the University of California, Davis. He was promoted to professor in 1974, a post he held until 1987, when he joined the UCI faculty as Distinguished Professor of Biological Sciences. He was named to the Bren chair in 1989 and subsequently to his other UCI academic positions. In 1981, he served as an expert witness in a federal case that overturned an Arkansas law mandating the teaching of creationism alongside evolution, and he has continued to work to protect the teaching of evolution in public schools. He was the principal author of *Science, Evolution, and Creationism* (1984) for the National Academy of Sciences (NAS). Dr. Ayala was a member of the (U.S.) Presidents Committee of Advisors on Science and Technology from 1994 to 2001 and has served as president of the American Association for the Advancement of Science (AAAS), Sigma Xi, and the Society for the Study of Evolution. He is a fellow of NAS, the American Academy of Arts and Sciences, the American Philosophical Society, the American Academy of Microbiology, and the Linnean Society of London, as well as a member of the Brussels-based Académie Internationale de Philosophie des Sciences and a

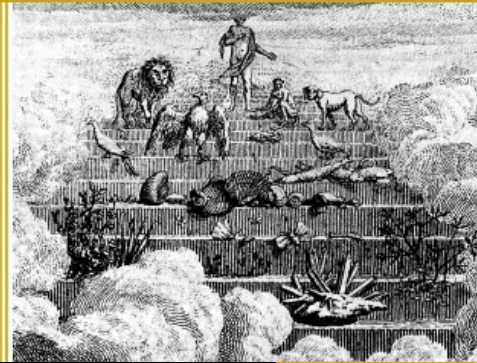
foreign member of the Russian Academy of Sciences, the Accademia Nazionale dei Lincei (ANL) in Rome, the Spanish Royal Academy of Sciences, the Mexican Academy of Sciences, the Latin American Institute of Advanced Studies, and the Serbian Academy of Sciences and Arts. His many honors, in addition to the Templeton Prize and the National Medal of Science, include the Gold Honorary Gregor Mendel Medal awarded by the Czech Academy of Sciences, gold medals presented by the ANL and the Stazione Zoologica of Naples, the Presidents Award of the American Institute of Biological Sciences, the AAAS Scientific Freedom and Responsibility Award and its 150th Anniversary Leadership Medal, the W.E. Key Award of the American Genetics Association, the Medal of the College of France, the UCI Medal, and Sigma Xi's William Procter Prize for Scientific Achievement, in addition to several awards for distinguished teaching. He has been awarded twenty honorary degrees from universities in Argentina, Chile, China, the Czech Republic, Greece, Italy, Poland, Russia, Spain, and the United States. The author of some 1,000 papers published in scientific journals, Dr. Ayala is the editor or co-editor of fourteen volumes, including (with Theodosius Dobzhansky) *Studies in the Philosophy of Biology* (1974), a foundational volume in the then new discipline, and the author or co-author of twenty-five other books, including, most recently, *Darwin and Intelligent Design* (2006) and *Darwin's Gift to Science and Religion* (2007), companion volumes that provide a primarily religious audience, in the first case, and a general audience, in the second case, introductions to the development of evolutionary biology, which stress that belief in science and religious belief need not be in contradiction since they play different roles in human understanding. His latest book, *Am I a Monkey? Six Big Questions about Evolution*, published last year by The Johns Hopkins University Press, seeks to explain major concepts in evolution and address misconceptions while arguing that matters of value and meaning are outside the scope of scientific investigation. His books have been translated into numerous languages: from Spanish, Portuguese, French and Italian; to Russian, Polish and Bulgarian; to Chinese, Japanese, Bengali, Turkish, Basque, and others. Dr. Ayala is a vintner who maintains a 2,400 acre vineyard in California that supplies grapes to major wineries.

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Adam Zeman

Thrive Chair for Applied Developmental Science and professor of psychology at Fuller Theological Seminary, **Justin L. Barrett** directs the new Thrive Center, which is concerned with positive youth development. His work is focused on cognitive approaches to the study of religion. Dr. Barrett was educated at Calvin College and earned a Ph.D. in experimental psychology from Cornell University in 1997. He then returned to Calvin as an assistant professor of psychology for three years.

Subsequently he served as a visiting assistant professor at the University of Michigan and as a consultant for the University of California, Davis. He was international coordinator of experimental research programs at the Institute of Cognition and Culture at The Queens' University in Belfast when, in 2006, he accepted an appointment as a senior researcher at Oxford University's Centre of Anthropology and Mind (CAM), where he directed a research program funded by the John Templeton Foundation (JTF). He helped establish and lectured at Oxford's Institute of Cognitive and Evolutionary Anthropology, and, in 2007, was named acting director of CAM and also became a research associate of the Ian Ramsey Centre. Two years later, he was appointed a supernumerary research fellow of Regent's Park College, Oxford. Dr. Barrett took up his position at Fuller this past summer. In addition to grants from the JTF and the Templeton World Charity Foundation, his research also has been funded by the British Academy and the John Fell Fund. Last year, he received the William Bier Award of the American Psychological Association. A member of the JTF board of advisors, he is a founding editor of the *Journal of Cognition and Culture*, a consulting editor of *Psychology of Religion and Spirituality*, and a founding member of the editorial board of *Religion, Brain, and Behavior*. He is the author of some sixty papers published in academic journals and volumes of collected works and the editor of the four-volume *Psychology of Religion* published last year by Routledge. His other books include, *Why Would Anyone Believe in God?* (2004), a scientific account of the prevalence of religious beliefs, *Cognitive Science, Religion, and Theology*, an accessible overview of an interdisciplinary field involving the study of minds and mental activity in which the author discusses key findings and their implications for religious thought and practice, which was published this month by the Templeton Press, and *Born Believers: The Science of Childhood Religion*, a study of children's natural receptivity to religious thought, forthcoming from The Free Press.

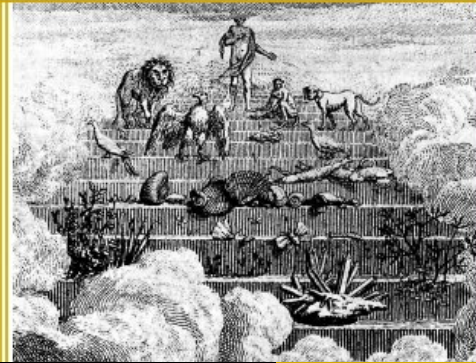
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Roy F. Baumeister, the Eppes Eminent Professor of Psychology at Florida State University, is internationally known for his research in social psychology that spans topics ranging from the human need to belong and the effects of rejection to how people seek to make their lives meaningful, the interpersonal consequences of forgiveness, and the physiology of willpower. Ongoing studies also include work related to the psychology of choosing, particularly the role of conscious processes in decision-making, and investigations of self-destructive behavior that shows the limits of human rationality. A *summa cum laude* graduate of Princeton University, Dr. Baumeister took a M.A. in psychology at Duke University and received his Ph.D. in experimental social psychology from Princeton in 1978. After holding a National Institute of Mental Health (NIMH) postdoctoral fellowship at the University of California, Berkeley, where he studied personality and social structure, he joined the psychology faculty at Case Western Reserve University as an assistant professor in 1979. He was named a full professor a decade later and awarded the E. Smith Professorship in the Liberal Arts in 1992, a post he held until accepting his present chair at Florida State in 2003. Dr. Baumeister has been a visiting associate professor at the University of Texas at Austin, a visiting professor at the Max Planck Institute in Munich, the University of Virginia, and the University of California, Santa Barbara, and a fellow at the Center for Advanced Study in the Behavioral Sciences in Stanford. His research has been supported by the National Institutes of Health, NIMH, the National Institute of Alcohol Abuse and Alcoholism, and the John Templeton Foundation. An elected fellow of the Society for Personality and Social Psychology (SPSP), he is a co-recipient of a 2004 Mensa Award for Excellence in Research and the winner of both SPSP's 2007 Distinguished Service Award and its Jack Block Award for Distinguished Contributions to Personality Psychology, as well as a Lifetime Achievement Award given by the International Network for Personal Meaning. He formerly served as editor of *Psychological Inquiry*, as co-editor of *Dialogue*, and as guest editor of two special issues of the *Review of General Psychology*. The author of more than 450 papers published in academic journals or in volumes of collected works, Dr. Baumeister is the co-editor (with Kathleen D. Vohs) of Sage's 2007 *Encyclopedia of Social Psychology* and the editor or co-editor of eleven books, including, most recently, (with Joseph P. Forgas and Dianne M. Tice) *Psychology of Self-Regulation: Cognitive, Affective, and Motivational Processes* (2009), (with Alfred R. Mele and Kathleen D. Vohs) *Free Will and Consciousness: How Might They Work?* (2010), and (with Eli J. Finkel) *Advanced Social Psychology* (2010). He is the author or co-author of thirteen other books, including *The Cultural Animal: Human Nature, Meaning, and Social Life* (2005) in which he argues that culture shaped human evolution and that nature selected individual human beings to be part of society, the widely-used textbook (with Brad J. Bushman) *Social Psychology and Human Nature* (2008 and 2011), and *Is There Anything Good About Men?* (2010), an examination of gender roles and differences. His newest book, written with John Tierney, is the highly-praised *Willpower: Rediscovering the Greatest Human Strength*, which made the

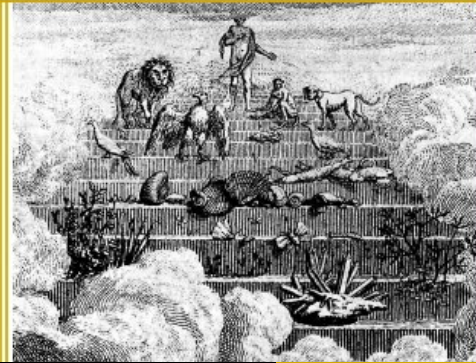
New York Times best seller list soon after publication in September by The Penguin Press. It draws on research conducted by Dr. Baumeister over the past dozen years, which, by demonstrating that willpower depends on glucose as an energy source, shows the neurobiological basis of the metaphor depicting self-control as a muscle—and goes on to indicate how the authors believe it can be strengthened by exercise and exhausted by overuse.

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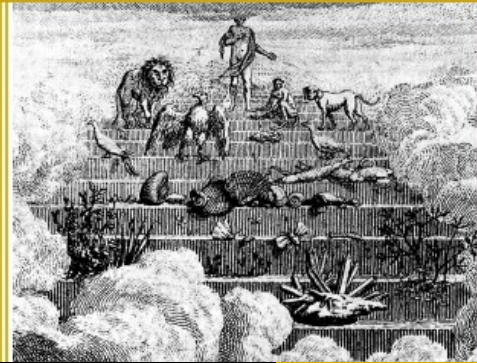
Adam Zeman

A professor of psychology at the Graduate School of Psychology at Fuller Theological Seminary, **Warren S. Brown** is also director of Fuller's Travis Research Institute and a member of the UCLA (University of California, Los Angeles) Brain Research Institute, where he was a research scientist for eleven years before joining the Fuller faculty. His current research involves studies of neuropsychological and psychosocial deficits associated with agenesis (absence) of the corpus callosum of the brain, among several other areas. Dr. Brown is a *magna cum laude* graduate of Point Loma Nazarene University and earned a Ph.D. in experimental psychology from the University of Southern California in 1971. He has been a guest professor in the department of neurology at University Hospital in Zurich, Switzerland, and a visiting scholar in the department of communications and neuroscience at the University of Keele in England. A fellow of Division 40 (Neuropsychology) and Division 6 (Behavioral Neuroscience and Comparative Psychology) of the American Psychological Association, Dr. Brown has won a National Institute of Mental Health (NIMH) Research Career Development Award and a National Science Foundation Exchange of Scientists and Engineers Grant, as well as numerous NIMH and U.S. Public Health Service contracts and grants. He serves on the editorial boards of *Perspectives in Science and Christian Faith* and the *Journal of the Biological Study of Religion*. The author of some ninety papers appearing in scholarly journals or in volumes of collected works, he was the principle editor of a collaborative volume (with Nancey Murphy and H. Newton Maloney) on the integration of science and Christian faith, *Whatever Happened to the Soul? Scientific and Theological Portraits of Human Nature* (1998), a study awarded a prize for Outstanding Books in Theology and the Natural Sciences by the Center for Theology and the Natural Sciences, as well as the editor of *Understanding Wisdom: Sources, Science, and Society* (2000), a volume that looks for evidence of wisdom in both perception and performance, in sacred scripture, and in brain function. Dr. Brown is the author (with Nancey Murphy) of *Did My Neurons Make Me Do It? Philosophical and Neurobiological Perspectives on Moral Responsibility and Free Will* (2007), a book in which the authors use contemporary developments in neuroscience and philosophy of mind to defend robust conceptions of mental causation and of humans as beings capable of rational, free, and morally responsible action. His newest book, (with Malcolm Jeeves) *Neuroscience, Psychology, and Religion: Illusions, Delusions, and Realities about Human Nature*, provides an overview of what brain science can tell us about the phenomenon of religiosity and was published by the Templeton Press in 2009.

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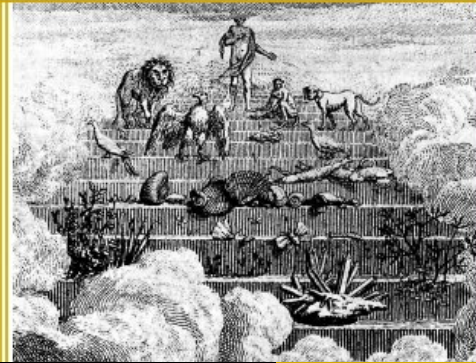
Adam Zeman

Richard W. Byrne, a professor of evolutionary psychology at the University of St. Andrews, studies the evolution of cognitive and social behavior, particularly the origins of distinctively human characteristics. His current research focuses on gestural communication in great apes and the interaction of causal understanding and social learning in their acquisition of manual skills. He is also investigating cognition in domestic pigs and in African elephants. Educated at St. John's College, Cambridge, where he took first class honors in natural sciences, Dr. Byrne earned a Ph.D. in psychology from Cambridge University in 1976. He then joined the St. Andrews faculty as a lecturer and was appointed to his present position in 1997. A decade earlier, with other academic colleagues, he set up the Scottish Primate Research Group to coordinate the cognate interests of researchers in the three Scottish universities where primatology was studied—and it now links faculty and their research teams at five institutions. His own research, which earlier in his career included work on the ecology of baboon social structures, deception in primates, and the relation between brain size and intelligence, has been supported by grants from Biotechnology and Biological Services Research Council, the Leverhulme Trust, the Royal Society, and the European Commission. A fellow of the Royal Society of Edinburgh and the Higher Education Academy, Dr. Byrne has served as vice president of the International Primatological Society and on the council of the Primate Society of Great Britain. His work has been featured on television in Australia and Britain, as well as in numerous radio broadcasts from several countries. He is a former contributing editor to *Animal Behaviour* and serves on the editorial boards of the *Journal of the Royal Anthropological Institute*, *Animal Cognition*, *Current Biology*, and *Biology Letters*. In addition to more than 170 papers published in scientific journals or as chapters in volumes of collected works, he is the editor (with Andrew Whiten) of *Machiavellian Intelligence: Social Expertise and the Evolution of Intellect in Monkeys, Apes, and Humans* (1988) and, most recently, *Machiavellian Intelligence II: Extensions and Evaluation*, which was published by Cambridge University Press in 1997. Dr. Byrne's book, *The Thinking Ape: Evolutionary Origins of Intelligence*, an exploration of how our nearest ancestors reached the point in cognitive evolution that might have given rise to the human mind, was published in 1995 by Oxford University Press and won the 1997 British Psychological Society Award.

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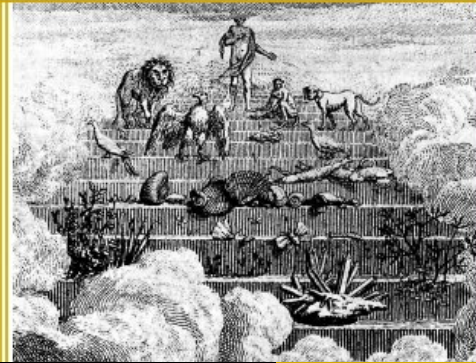
Professor and chair of philosophy and a member of the Cognitive Sciences Program at Indiana University, **Timothy O'Connor** is a philosopher of mind and of religion. Much of his writing centers on two topics: the nature of human action (including the challenges to belief in human freedom and moral responsibility that arise from advances in neuroscience and social and clinical psychology) and concepts of emergence that may have application to complex systems and to the conscious mind in particular. An honors graduate of the University of Illinois at Chicago, where he earned an undergraduate degree with distinction in philosophy as well as an M.A. in philosophy, he went on to study at Cornell University, where he was a Susan Linn Sage Fellow and received a Ph.D. in philosophy in 1992. After post-doctoral research at the University of Notre Dame, he joined the Indiana philosophy faculty in 1993 as an assistant professor. Dr. O'Connor spent a year at the University of St. Andrews as a Gifford Research Fellow and was named to his present position in 2005. In addition to research fellowships awarded by Indiana, he also has been the recipient of a fellowship given by the Pew Scholars Program. He has won several awards for teaching excellence.

Dr. O'Connor formerly served on the executive committee of the Society of Christian Philosophers and currently serves as a member of the board of advisors of the John Templeton Foundation. The author of some fifty papers published in scholarly journals, he is the editor of *Agents, Causes, and Events: Essays on Indeterminism and Free Will* (1995) and co-editor (with David Robb) of *Philosophy of Mind: Contemporary Readings* (2003), (with George F.R. Ellis and Nancey Murphy) *Downward Causation and the Neurobiology of Free Will* (2009), and, most recently, of two volumes published in 2010: (with Constantine Sandis) *A Companion to the Philosophy of Action* (Wiley-Blackwell) and (with Antonella Corradini) *Emergence in Science and Philosophy* (Routledge Press). He is also the author of *Persons and Causes: The Metaphysics of Free Will* (2000) and *Theism and Ultimate Explanation: The Necessary Shape of Contingency* (2008), a contemporary cosmological argument for the existence of God as the necessary, transcendent, and personal source of all contingent reality. During an upcoming sabbatical, he plans to work on two new book projects: a scientifically-informed philosophical account of the human person and an account of how established theories in the physical and human sciences and broadly traditional Christian religious belief may be integrated into a harmonious whole that yields significant explanatory power.

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22, 23, and 24 October 2011


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Alan J. Torrance

Adam Zeman

Colin Renfrew, Disney Professor of Archaeology Emeritus at Cambridge University and senior fellow at the university's McDonald Institute for Archaeological Research, is internationally renowned for his contributions to archaeological theory and science as well as to the understanding of European prehistory and linguistic archaeology. Beginning in the mid-1960s, his examination of the process of cultural change led him to the conclusion, later confirmed by the revolution in radiocarbon dating, that the originality and creativity of the early inhabitants of Europe had been undervalued by proponents of diffusionist ideas who saw innovations spreading exclusively outward from the Near East. Dr. Renfrew was educated at St. Albans School and St. John's College, Cambridge. After taking first-class honors in archaeology and anthropology, he went on to study at the British School of Archaeology at Athens then returned to Cambridge where he earned a Ph.D. in archaeology in 1965. He began his teaching career at the University of Sheffield and was named professor of archaeology and head of the archaeology department at the University of Southampton in 1972. Appointed to the Disney chair in 1981, he also headed the archaeology department at Cambridge for eleven years. In 1990, he was selected as founding director of the McDonald Institute, a center for post-doctoral research with a particular interest in the archaeology of early human cognition, which he led for fourteen years. Formerly a fellow of St. John's College, Dr. Renfrew is a fellow of Jesus College, where he served as master from 1986 to 1997. He is a fellow of the British Academy, the Society of Antiquaries of London, and of the Society of Antiquaries of Scotland, in addition to being an honorary fellow of the Royal Society of Edinburgh, an honorary member of the Society for Cycladic Studies, the Archaeological Society of Athens, and The Prehistoric Society, and both a foreign associate of the (U.S.) National Academy of Sciences and a foreign member of the American Philosophical Society, as well as a corresponding member of the German Archaeological Institute and a foreign member of the Austrian Academy of Sciences and the Russian Academy of Sciences. In 1991, he was created a life peer by Queen Elizabeth II. A recipient of Rivers Memorial Medal of the Royal Anthropological Institute, the Huxley Medal of the Royal Anthropological Institute, the Prix International Fyssen of the Fondation Fyssen in Paris, the Language and Culture Prize of the University of Umeå, the Lucy Wharton Drexel Medal of the University of Pennsylvania Museum of Archaeology and Anthropology, the European Science Foundation Latsis Prize, and the Balzan Prize for his work in prehistoric archaeology, he has been awarded the senior doctor of science degree from Cambridge University and honorary degrees from the University of Athens, the University of Sheffield, the University of Southampton, the University of Liverpool, the University of Edinburgh, the University of St. Andrews, the University of London, and the University of Kent at Canterbury. Dr. Renfrew formerly served as a trustee of the British Museum and as vice president of the Prehistoric Society, the Council of British Archaeology, and the Royal Archaeological Institute. He currently serves as a trustee of the Antiquity Trust. He serves as a member of the editorial boards of *New Directions in Archaeology*, *Advances in Archaeological Method and Theory*, the *Journal of Social and Biological Structures*, and the *Journal of Anthropological Archaeology*. His own archaeological excavations in Greece have led to numerous publications. In addition to papers published in academic journals, he is the editor of two series, *New Aspects of Antiquity*

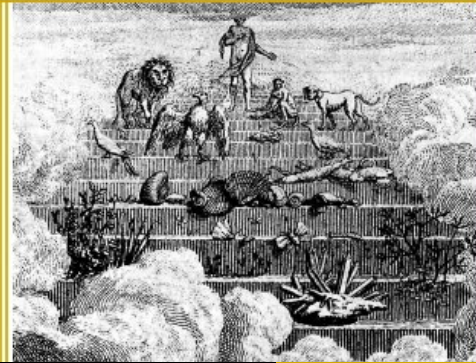
(Thames & Hudson) and *New Studies in Archaeology* (Cambridge University Press), and the editor of twenty books, including, most recently, two with Iain Morley: *Becoming Human: Innovations in Material and Spiritual Culture* (2009) and *The Archaeology of Measurement: Comprehending Heaven, Earth and Time in Ancient Societies* (2010), both published by Cambridge University Press. Dr. Renfrew is also the author of another thirteen volumes. His path breaking *The Emergence of Civilization: The Cyclades and the Aegean in the Third Millennium BC* and *Before Civilization: The Radiocarbon Revolution and Prehistoric Europe* were published in 1972 and 1973, respectively, and his widely influential *Archaeology & Language: The Puzzle of the Indo-European Origins* came out in 1987. His most recent books include: *Loot, Legitimacy and Ownership: The Ethical Crisis in Archaeology* (2000), a revealing account and forthright condemnation of the illicit excavation and export of antiquities, *Figuring It Out* (2003), an investigation of the convergence between modern art and archaeology, and *Prehistory: The Making of the Human Mind*, a study published in 2007 by Weidenfeld & Nicolson, which sums up the progress of prehistoric archaeology, particularly the importance of dating with radioactive elements and genetic analysis, and explores current challenges, arguing that permanent residence in one place was a pre-requisite for the emergence of material culture.

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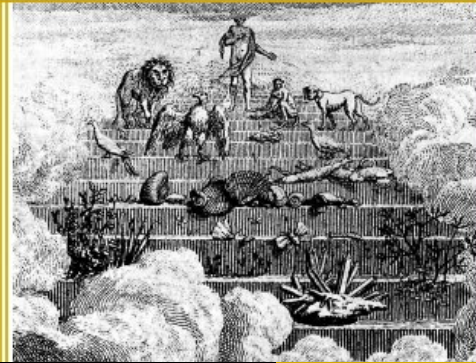
Curator emeritus and senior scientist in residence in the division of anthropology at the American Museum of Natural History (AMNH), **Ian Tattersall** is widely acclaimed for his studies of speciation and diversity in the human fossil record. His current research involves a continuing investigation of the emergence of *Homo sapiens* and of modern human cognition. Earlier in his career, he studied the ecology and systematic biology of the lemurs of Madagascar. Dr. Tattersall was raised in East Africa and educated at Christ's College, Cambridge, where he took first class honors in archaeology and anthropology. After earning a Ph.D. in geology and geophysics at Yale University in 1971, he joined the AMNH as an assistant curator, and he has since taught at the New School for Social Research and Columbia University, where he continues as an adjunct professor of anthropology, as he does at City University of New York. He has been responsible for a number of AMNH's major exhibits throughout the past three decades, including, most recently, "The First Europeans: Treasures from the Hills of Atapuerca" (2003) and the "Spitzer Hall of Human Origins" (2007). In addition to Madagascar, Dr. Tattersall has conducted field work in Mayotte, the Comoro Islands, Mauritius, Réunion, Borneo, Nigeria, Niger, Sudan, Yemen, Vietnam, Suriname, French Guiana, and the United States. He is a member of Sigma Xi and a fellow of the American Association for the Advancement of Science and the Linnean Society of London. He has been honored with various awards and serves as a member of the Permanent Council of the International Association of the Study of Human Paleontology, the board of directors of the Institute of Human Origins, the scientific advisory board of the Lemur Conservation Foundation, the scientific advisory council of the L.S.B. Leakey Foundation, and the board of advisors of the John Templeton Foundation. The author of some 300 papers published in scientific journals or in volumes of collected works, he is the editor (with Eric Delson, J.A. Van Couvering, and, for the 2nd edition, Alison Brooks) of the definitive *Encyclopedia of Human Evolution and Prehistory* (1988 and 2000) and is the author or co-author of fifteen books, including (with Jeffrey Schwartz) three volumes of *The Human Fossil Record* (2002, 2003, and 2005). Among other works are: *The Primates of Madagascar* (1982), *The Fossil Trail: How We Know What We Think We Know About Human Evolution* (1995 and 2009), *The Last Neanderthal: The Rise, Success, and Mysterious Extinction of Our Closest Human Relatives* (1995 and 1999), *Becoming Human: Evolution and Human Uniqueness* (1998), *The Monkey in the Mirror: Essays on the Science of What Makes Us Human* (2002), (with Rob DeSalle) *Human Origins: What Bones and Genomes Tell Us about Ourselves* (2008), *The World from Beginnings to 4000 BCE* (2008), *Paleontology: A Brief History of Life* (2010), a concisely-told yet comprehensive story of evolution that probes the origins of human spiritual sensibilities in relation to the emergence of symbolic cognition and thought, and, most recently, (with Rob DeSalle) *Race? Debunking A Scientific Myth*, an explanation of what human races really are in the context of natural diversity, which was published by Texas A&M University Press earlier this year.

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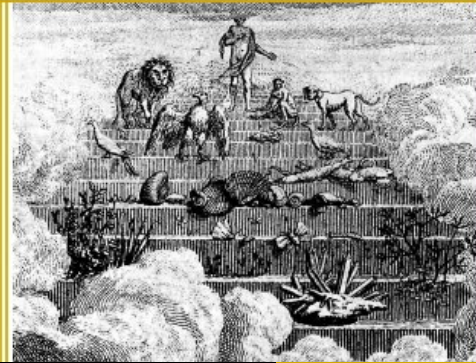
Adam Zeman

Anthony C. Thiselton, professor of Christian theology emeritus at the University of Nottingham, is widely respected for his work in biblical and philosophical hermeneutics. He serves as associate priest at St. Mary the Virgin Church in Attenborough, as well as canon theologian emeritus of both Leicester Cathedral and to the diocese of Southwell and Nottingham. Educated at City of London School and King's College London, he was ordained a priest in the Church of England in 1960 and served a curacy at Holy Trinity Sydenham in South London. He became chaplain of Tyndale Hall, a ministerial training college, in Bristol in 1963 and also taught at the University of Bristol. In 1971, he was appointed Stephenson Fellow at the University of Sheffield and became a lecturer in biblical studies the next year. Earning a Ph.D. in theology at Sheffield in 1977, he was named senior lecturer in 1979 and also held ecclesiastical appointments as examining chaplain to the bishops of both Sheffield and Leicester. Dr. Thiselton accepted appointment as principal of St. John's College in Bramcote, Nottingham, in 1985, and three years later was named principal of St. John's College, University of Durham, where he earned a doctor of divinity degree in 1994 and was later awarded an honorary professorship. He was appointed professor and chair of Christian theology at Nottingham in 1992. After his retirement in 2001, he served for five years as professor of Christian theology at the University of Chester, then accepted Nottingham's invitation to return as professor from 2006 to 2011 and became professor emeritus at Chester. He has been a visiting professor at Calvin College, Fuller Theological Seminary, Regent College in Vancouver, and North Park University in Chicago, and, over the course of his career, taught in fifteen countries on four continents. A former president of the Society of Theology, he also has served in numerous ecclesiastical and governmental positions—as vice chair of the Board of Theological Studies, the Doctrine Commission, and the Council for National Academic Awards and as a member of the Church of England's General Synod, the Crown Nominations Committee, the Commission for Theological Education in the Anglican Communion, and the Human Fertilization and Embryology Authority. Dr. Thiselton is a fellow of the British Academy and King's College London and an honorary fellow of Cranmer Hall, Durham. In 2004, he was awarded a Lambeth D.D. by the Archbishop of Canterbury. The author of more than seventy papers published in academic journals, he has written eighteen books, including *The Two Horizons: New Testament Hermeneutics and Philosophical Descriptions* (1980 and 1993), *New Horizons in Hermeneutics* (1992), *Interpreting God and the Post-Modern Self* (1995), *The Promise of Hermeneutics* (1999), *The First Epistle to the Corinthians: A Commentary on the Greek Text* (2000), *A Concise Encyclopedia of the Philosophy of Religion* (2001 and 2005), *1 Corinthians: A Shorter Exegetical and Pastoral Commentary* (2006), *Hermeneutics of Doctrine* (2007), *The Living Paul: An Introduction to the Apostle and His Thought* (2009), and, most recently, two volumes published in 2011, *1 and 2 Thessalonians: Through the Centuries*, a commentary on Paul's early letters, which was published by Blackwell, and *Life after Death: A New Approach to Last Things*, a study using philosophical and linguistic analysis as an aid to reflection on eschatological questions and the biblical language of promise, which was published by Wm. B. Eerdmans.

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Adam Zeman

Adam Zeman is professor of cognitive and behavioral neurology at Peninsula Medical School and the School of Psychology at the University of Exeter. His clinical work and research focus on the neurology of cognition, including neurological disorders of sleep. He currently investigates amnesia associated with epilepsy, the cognitive and neuropsychiatric consequences of cerebellar disease, and disorders of visual imagery. He also has written on the science and philosophy of consciousness. Educated at the Westminster School and Magdalen and Merton Colleges, Oxford, he earned a bachelor of arts degree in psychology and philosophy followed by bachelor of medicine and bachelor of surgery degrees in 1984 at Oxford University Medical School. After serving as a senior house officer at the John Radcliffe Hospital and the Radcliffe Infirmary in Oxford, he took further specialized training in London at Guy's Hospital, St. George's Hospital, and St. Thomas Hospital, receiving MRCP certification in 1987 and qualifying for a doctorate in medicine from Oxford in 1994. Dr. Zeman served as a registrar at Hallamshire Hospital in Sheffield and at the Radcliffe Infirmary before being appointed a clinical lecturer in neurochemistry at UCL (University College London) Institute of Neurology in 1990. Appointed registrar in neurology at the National Hospital for Neurology and Neurosurgery in London in 1993, he became the first senior registrar in neurology jointly at Addenbrooke's Hospital in Cambridge and at Norfolk and Norwich Hospital in Norwich the next year. In 1996, he became consultant neurologist at Western General Hospital in Edinburgh and St. John's Hospital in Livingston, Scotland, as well as a honorary senior lecturer and later reader in neuroscience at Edinburgh University. Dr. Zeman took up his present position in 2005 and now also serves as honorary consultant neurologist at the Royal Devon and Exeter Foundation Trust. He is a former chair of the British Neuropsychiatry Association and currently serves on the steering committee for the International Congress on Epilepsy, Brain and Mind. A fellow of the Royal College of Physicians (RCP), he is on the editorial board of the RCP's *Clinical Medicine*. Dr. Zeman has published some one hundred papers in scientific journals or in volumes of collected works and is the author of *Consciousness: A User's Guide* (2002), in which he demonstrates the intricate and systematic correspondences between neural events and human experiences—and reflects on the meaning of the relationship, and *A Portrait of the Brain*, a highly-praised book for general readers published by Yale University Press in 2008, in which he weaves together case histories and concepts and discoveries in neuroscience, leading to a consideration of what the brain's behavior and misbehavior tells us about the human self as a physical system, living creature, and conscious mind. His newest book, edited with Narinder Kapur and Marilyn Jones-Gotman, *Epilepsy and Memory: The State of the Art*, is forthcoming from Oxford University Press.

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