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THEOLOGY, NEWS & NOTES

Fuller Theological Seminary

SPRING 2013

Thinking Science and Christian Faith Together

> Integrated by Joel B. Green and Nancey Murphy





Joel B. Green and Nancey Murphy

About This Issue

Thinking Science and Christian Faith Together

Today, it is difficult to read a newspaper or magazine, enjoy a novel, or watch a film without coming face to face with the latest scientific discoveries and their implications. Often, media outlets cast scientific discovery in sensational terms—sometimes as a direct challenge to traditional Christian beliefs. The general public might be excused for imagining that science is a perennial thorn in the flesh for biblical faith. This has been one way of telling the story, of course, but it is not one that makes much sense of the history of science-faith relations. In fact, what we in the Western world today refer to as the “natural sciences” actually emerged centuries ago under the patronage of a Christian theological commitment to God’s two books, Scripture and the natural world. Christian theologians across time would be surprised to hear that science and faith are necessarily at loggerheads.

To affirm the doctrine of creation is to embrace the importance of learning about God and God’s work through the cosmos God has made. We have strong theological reasons for study of the natural world, then, and this underscores the importance of a consistent and coherent account of science and its relations to theology. This is the burden of this issue of *Theology, News & Notes*. Nancey Murphy, a leading voice in the theology-science conversation internationally, frames our discussion. She sketches the contexts within which Christians reflect on science and theology and then introduces a series of topics currently under discussion at their interface. She highlights the importance of our participation in this conversation—for the integrity of our theological understanding of God, humanity, and the cosmos, and for apologetic reasons.

David Wilkinson holds PhDs in theoretical astrophysics and in Christian theology, so is in a unique position to help us reflect theologically on the God of creation and new creation. His essay tackles the really big questions of the universe’s origins and future. A physicist by training, Richard Carlson has also completed graduate-level work in theology and biblical studies. His essay presents a picture of the current scientific status of origins—of cosmic development, the earth’s origin, and the development of life on Earth—before

turning to ways in which Christians might think and talk about these issues as Christians.

Among some Christians, one of the ongoing questions about human origins is the status of Adam. For many, the significance of affirming a historical Adam is grounded less in what Genesis 1–3 might teach about human origins and more in how Paul understands Adam and Adam’s primal disobedience. New Testament scholar Daniel Kirk helps us think about the significance of Paul’s portrait of Adam in Romans 5 and 1 Corinthians 15.

What does it mean to be human? For this final question we turn to Joel B. Green, a New Testament scholar with graduate training in the neurosciences. According to him, literature and film—as well as decisions made every day within families, churches, and governments—press for serious, explicit reflection on what God has revealed through Scripture and the natural sciences about the nature of humanity and its implications for life together.

Interwoven with this issue’s main essays are important “reports from the field” featuring leaders involved in the Scientists in Congregations initiative. Timothy Faris, a Baptist pastor in Columbus, Ohio, observes that models of dialogue and integration characterize the relationship between science and faith for his local church, which is situated near the Ohio State University. Carl Hofmann, a Presbyterian pastor from Boulder, Colorado, tells how his church challenges the view that Christians must choose either biblical faith or scientific materialism. Physicist Karl Giberson, a Nazarene with a distinguished history in the science-religion dialogue, summarizes diverse responses to his attempts to promote discussion about evolution in three different ecclesial settings—a Nazarene congregation, an Episcopal church, and a neighboring ethnic congregation. His experiences lead him to express prophetic concern for the church in its engagement with the sciences. Finally, Deborah Haarsma, president of BioLogos, sketches her involvement in a wide-ranging effort to provide pastors and congregations with resources that encourage a better appreciation of God’s revelation in nature. **TNN**

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Editor’s Correction

In Fall 2012, page 29, the caption defining infant baptism should have indicated that adult believer baptism is a conviction adhered to only by some Protestant denominations.

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Cover Art



John Frame is an American multidisciplinary artist working in California since

the early 1980s. The cover image, “The Unanswered Question,” is part of a sweeping unfinished project incorporating his own sculpture, photography, installation, music, and film, which premiered at the Huntington Library, San Marino, CA, in 2011. See www.johnframesculpture.com.

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Nancey Murphy

Science and Theology: Mapping the Relationship

NANCEY MURPHY is professor of Christian philosophy at Fuller Theological Seminary, and a research professor at the International Baptist Theological Seminary in Prague. Her most significant recent book (coauthored with Warren Brown) is *Did My Neurons Make Me Do It? Philosophical and Neuroscientific Perspectives on Moral Responsibility and Free Will* (Oxford University Press, 2009).

Historical Introduction

The purposes of this historical overview are two: one is to chip away at the widely held conception of science and Christianity as being regularly in conflict; the other is to explain why liberal and conservative Christians tend to hold such different attitudes toward science.

It is important to bear in mind that modern Western science originated within the matrix of a Christian worldview. The term “scientist” was not coined until the nineteenth century; earlier contributions were called natural philosophy. Natural philosophy and natural theology were so closely tied in the seventeenth and eighteenth centuries that the works of Johannes Kepler (1571–1630), Isaac Newton (1642–1727), and others have been called “physico-theology.”

One early source of the perception of conflict between science and Christianity is early scientific theories that conflicted with the scholastic *synthesis* of Aristotelian philosophy with theology; therefore, the work appeared to some to threaten Catholic theology. Gradually, however, the new science presented itself as more compatible with Christianity than the “pagan” Aristotelianism that it displaced.¹

The warfare thesis was advanced by historians Andrew Dixon White and John Draper, whose thesis—now called the warfare *myth*—has been thoroughly discredited by recent historians as one-sided and partly motivated by power struggles between the new scientific elite and administrators who controlled higher education (typically Christian clergymen).²

Genuine conflict between religion and science began in the United States in the early twentieth century with the develop-

ing fundamentalist movement. Shaken by the simultaneous arrival of higher criticism of the Scriptures and evolutionary theory in the United States, and by the development of a version of liberal theology called modernism, fundamentalist Christians adopted a strategy for reading Scripture that took evolutionary biology to be in conflict with biblical views of the age of the Earth and human origins. This conflict continues today, even though many conservative theologians have made impressive moves to reconcile theology with scientific developments.³

Meanwhile, liberal theology had developed in large part as a strategy to immunize theology from science. Immanuel Kant’s (1724–1804) philosophical system was primarily a response to the threat that Newtonian determinism posed to human freedom and morality, and thus to religion. One aspect of his solution led to the birth of liberal theology. He made a sharp distinction between the spheres of knowledge (science and a limited form of metaphysics) and ethics. Religion belongs to the sphere of ethics, of things in themselves, so there is no valid way to argue from science (based on sensory perception) to theological conclusions.

Friedrich Schleiermacher (1768–1834), founder of the liberal theological tradition, located religion in a third, aesthetic sphere. The consequence was an understanding of theology that bore no intellectual relation whatsoever to science. For example, the doctrine of creation says nothing about the origin of the universe, but speaks of human religious awareness of its dependence on God. This development created a gulf between liberal theologians and theologians still holding to the traditional understanding of theology as *knowledge*, and it accounts for the fact that only conservative Christians have seen science as a threat. However, the indifference of liberal theologians to science began, a generation ago, to give way to a new round of engagement. Scholars with dual training in science and theology have contributed to a growing movement to relate theology to current developments in science.

Regardless of theologians’ attitudes toward science, however, there is scarcely a doctrine that has not been affected by

science. I shall note three of these briefly, and then turn to contemporary points of dialogue. In all three cases, the direct implications for theology were not from science (as we now understand the word) but from allied philosophical changes.

Modern Worldview Changes

The development of modern science led to a shift in philosophical understandings of knowledge, which in turn had a significant impact on theological methods. Medieval theologians had two sets of epistemological categories, those relating to *scientia* (deductive systems such as geometry) and those relating to *opinio* (“probable” knowledge, in the sense of that *approved* by the authorities). The scientific revolution replaced medieval *opinio* with our contemporary sense of probable knowledge based on empirical evidence. The need to redefine theology in modern epistemological categories created a major crisis for Christian scholars. Much of the character of evangelical theology is a consequence of attempting to model theological reasoning on accounts of science from philosophers such as Francis Bacon (1561–1626), famous for proposing that science worked by gathering all relevant facts and drawing inductive conclusions. This has had the unfortunate consequence of leading some theologians to speak of the Bible as a collection of facts, merely needing to be combined into a coherent system. As already noted, liberal theology has been shaped methodologically by distinguishing itself from science.

A second change with drastic effects on theology was a new view of causation. The scientific revolution embodied a new form of explanation—fitting events into causal accounts, with causation understood in terms of laws of nature. While this change was motivated theologically—it was an answer to the question of how God governs the universe—the concept of nature as entirely determined by strict causal laws soon made God’s ongoing involvement seem problematic. How, then, to understand revelation, special providence, and continuing creation?

Here we see another split between liberal and conservative Protestants. Liberal theologians gave up on all notions of *special* divine action. Instead they emphasized God’s immanence in the world; God’s ongoing action is limited to upholding the whole natural order. Insofar as an event seems to be a special act of God, this is only because subjectively it reveals God’s purposes more than others.

Conservative theologians objected that this “immanentist” view of divine action, removing God from history, evac-

uates Christianity of its meaning. They maintain (with liberals) that God works constantly within the order of nature, but contend that God can and does intervene—occasionally violating laws of nature in order to bring about special events.⁴

A third aspect of the scientific worldview has affected Christian understandings of the church, salvation, and the kingdom of God. The atomism that worked so well in the new physics was soon extended metaphorically to all aspects of reality. Humans came to be understood as the atoms that constituted social groups, and two related attributes were carried along by the metaphor: human atoms are logically prior to social organizations, and they are not intrinsically affected by social relations. This modern form of individualism has made it difficult to maintain the biblical view of the church as the body of Christ, and has allowed concern for personal (individual) salvation to eclipse expectation for the social and political reign of God.



FRANCIS BACON

(1561–1626) was an English philosopher, statesman, and scientist whose works were extremely influential during the scientific revolution. Known as the creator of empiricism, he popularized inductive methodologies for scientific inquiry.

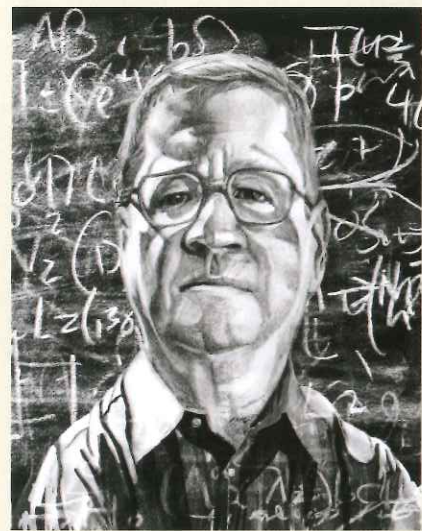
I turn now to topics of current interest in the science-theology dialogue, some of which I shall merely list here because they will be addressed in other articles in this publication, and others I will explain in what follows.

Quantum Physics and Divine Action

An issue of great interest among current scholars is whether it is possible to give an account of special divine action (continuing creation, special providence) without *violation* of the laws of nature. Liberal theologians tended to reject special divine action. First, it represented an unacceptable view of the nature of God. If God created the laws in the first place, then God’s violation of them is irrational; Jewish philosopher Baruch Spinoza (1632–1677) argued that in such a case God would be involved in self-contradiction. Second, if action in the material world requires a force, then to conceive of God

making things happen in the world is to conceive of God as a force among forces. This is problematic since it reduces God to the level of a Demiurge.

One current possibility for reconciling special divine action with what we know of the regularities of nature is to postulate that God works at the quantum level and thereby brings about macroscopic events. This approach emphasizes God's immanence in all of nature; thus, necessarily God is immanent in the events and entities at the quantum level. Robert John Russell is the most prolific defender of quantum divine action. He argues that God acts directly at the quantum level to sustain the development of elementary processes and also to determine otherwise indeterminate quantum



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events. This latter sort of action is the means by which God brings about special, providential, and revelatory events at the macro level. God's action is in cooperation with natural causes: it involves "a continuous creative (divine) presence within each (quantum) event, co-determining the outcome of these elementary physical processes."⁵ So this is not a picture of God occasionally acting from outside the world, but rather a scientifically informed specification of the nature of immanent divine causation. Because of the (widely accepted) ontological indeterminacy of events at the quantum level there is no violation of natural laws.

This account has many critics. One criticism is that action only at the quantum level would have almost no possibility for noticeable events at the macroscopic level. However, quantum divine action does not postulate God acting in only one quantum event at a time. Hence, the charge that individ-

ual quantum events have limited effects because all are averaged out at the macro-level is beside the point. Second, there are in fact important points at which individual quantum events have significant effects, such as in causing some of the mutations that drive the evolutionary process.⁶ It is also likely that quantum events play a role in brain processes, thus potentially affecting human thoughts and emotions.

Note that divine action as here understood will always be invisible to science, since it will originate in events that can only appear to scientific investigation as chance occurrences.

Evolution and Divine Action

Current science-theology dialogue contributes to the ongoing reconciliation of theology with evolutionary biology in regard to divine action. The most common understanding of evolution across the theological spectrum, called "theistic evolutionism," is that God created all present life forms through the process of evolution. However, this thesis is ambiguous. Does it mean that God willed the evolutionary process to occur, and that the process alone has produced all of the results? Or does it mean that God worked subtly within the process to produce these results? If the former, then theistic evolutionism is open to the same sorts of objections as other "immanentist" accounts of divine action—it is difficult to claim that the evolution of *Homo sapiens* is more an act of God than the evolution of, say, cockroaches. If theistic evolution is taken in the latter sense, then must it not be merely a subtler form of interventionism? Here we see the relevance of theories of noninterventionist special divine action. For example, Russell argues that divine action at the quantum level could account for certain sorts of mutations, and thus, indirectly, for some aspects of the direction of the evolutionary process. The purpose of such theories is to enable the theologian to claim that God has been involved in shaping the outcome of natural processes without making God merely one cause among other (natural) causes.⁷

Cosmology and Creation

In the Middle Ages there was a consensus among theologians that the doctrine of creation was relevant to a number of cosmological issues, such as the nature of time and the question of whether the universe had a beginning. However, due to a variety of factors in the modern period, many theologians concluded that theology in general and the doctrine of creation in particular are *irrelevant* to the big cosmological questions. For them, theology is basically about *human-kind's* relation to God. The ironic development in our own

day is that science is now putting all of those big cosmological questions back on the table.

Fine-Tuning, Design, and Natural Evil

The problem of evil can be expressed simply: if God is all good and all powerful, one would expect God to eliminate evil from the world, yet clearly God has not done so. It has become common to distinguish among three kinds of evil, designated as moral, natural, and metaphysical evil. The theological task has been to reconcile these with the assumption of the ultimate goodness of the created order. Moral evil—human sin—has always been the easiest to account for. I focus here on natural evil—that is, the (apparent) disorder in nature and the suffering it causes for humans and animals—and on the closely related topic of limitation, often called metaphysical evil.

Augustine produced an elaborate set of answers to these three interrelated problems. Unfortunately, his answer to the problem of natural evil was also dependent on an account of the human Fall as a historical event and especially on the notion of the fall of the angels; both premises are highly questionable on biblical grounds as well as scientifically.

A first step in providing a credible treatment of natural evil is to recognize that all purely natural evil is a simple consequence of the regular working of the laws of nature. Children fall and injure themselves because of the law of gravity; mountain climbers freeze and people starve because of the laws of thermodynamics; deadly bacteria evolve by means of the same biological laws that have produced humans.

The modern philosopher G. W. F. Leibniz (1646–1716) argued that this must be "the best of all possible worlds." He pointed out that the more we understand the interconnectedness among things and events the less we can imagine a world that preserves all the goods of this one and eliminates all of the evils. This observation can be all the better supported in light of current science, especially by noting the *connections* that can be drawn among the laws of the various sciences, from physics to sociology. One important contributor to the goodness of a world, in Leibniz's view, is the feature whereby the most results are produced in the simplest ways.

Even more pertinent to Leibniz's argument is the current discussion of fine-tuning and the anthropic principle. Scientists such as John Barrow and Frank Tipler have shown that the evolution of life in the universe is dependent on exquisitely fine balances among the forces and quantities of basic physics.⁸ Their calculations have led to reflections on the abstract possibility of a vast number of different sets of physical laws. These reflections, in turn, allow us to make better sense of Leibniz's notion of God selecting the best of all possible worlds. Here God selects, from among a number of possible

worlds, one of the incredibly small number in which the development of life would be possible.

"Metaphysical evil" refers to the basic facts of finitude and limitation. It has regularly been seen as an occasion for both natural and moral evil. Light can be shed on this ancient idea by focusing on one particular law of nature—the second law of thermodynamics, which states that entropy (disorder) in a closed system always increases. Russell argues that entropy is a prefiguring of evil on the physical level. Evil is likened to a disorder, a disfunction in an organism, or an imperfection in being. Entropy refers to such disorder, measuring the dissipation of a system, the fracturing of a whole. The pain and cost of natural disasters are all rooted in the press of entropy, the relentless disintegration of form, environment, and organism. Furthermore, the constant need to replenish the human body—the need for food and other forms of energy—is the cause of much moral evil. While we may dream of a world without this constant loss and degradation of energy, Russell argues that the second law of thermodynamics actually plays a necessary role in the development of higher forms of order, particularly in the development of life.⁹

These scientific considerations give theologians additional resources for dealing with evil: natural and metaphysical evil are both necessary but unwanted *byproducts* of conditions that were required to fulfill God's purposes—including particularly the existence of beings who could freely return his love. One obvious condition for such beings is an orderly, law-like universe. We now see, in addition, that human life could *only* exist in a universe that operates according to laws practically indistinguishable from those we observe. If the existence of intelligent life is central to God's purposes in creating a universe, then this universe is indeed *one* of the best of an uncountable number of possible worlds.¹⁰

Overview

This article has sought to achieve two goals: to explain the difference between evangelical and liberal approaches to science, and to describe important points of contact between current science and Christian theology. I have mentioned six major topics that are all connected. The fine tuning of the cosmological constants connects to the topics of big-bang cosmology and evolution, in that the values of the constants are shown to be necessary to allow the evolution of life in a universe beginning in a big bang. Fine tuning also relates to the end of the world, in that delicately balanced features such as the mass of the universe and the strength of gravity will determine the long-term fate of the cosmos. Reconciling evolutionary biology and Christian theology turns on the problem of divine action, which may be soluble with insights from

quantum physics. A physicalist account of human nature is consistent with our evolutionary origins.

A consistent and coherent account of science and its relations to theology is important. Stephen Barr notes that, while Christian belief and science are not in conflict, there is a very important conflict between Christianity and a materialist tradition that has developed through the modern period. Contemporary atheists often claim that their worldview is based on science, and that religious belief is incompatible with sci-

ence. Barr claims that while earlier science could be taken to support materialism, developments in the twentieth century such as big-bang cosmology, fine-tuning, and quantum physics provide added credibility to a theistic worldview.¹¹ Thus, the task of incorporating science into our current theological worldview is highly important for apologetic reasons. **TNN**

Endnotes

1. Peter Harrison, "Religion, the Royal Society, and the Rise of Science," *Theology and Science* 6, no. 3 (2008): 255–71 (264).

Tommy L. Faris

Exploring the Intersections of Science and Christian Faith: Moving Beyond Conflict

TOMMY L. FARIS is the pastor at University Baptist Church in Columbus, Ohio, a congregation affiliated with the American Baptist Churches USA and the Alliance of Baptists. He is an alumnus of Columbia University in New York, where he earned his PhD in American religious history with a dissertation entitled "William Miller: A Common Sense Life." He is codirector of *Believers Exploring Science and Theology*, a project of the Scientists in Congregations initiative of the John Templeton Foundation. Papers written for the project are available online at http://lubccolumbus.org/Templeton_list.aspx.

tific sense. On the reverse of that coin, there is no empirical or scientific proof that God does not exist. As believers in Christ and children of God, we hold the existence of God as a matter of faith that need not fear the knowledge and data that science contributes to our world.

Thus, when a member of our church council brought to us a request for proposals from Scientists in Congregations, an initiative of the John Templeton Foundation, we made application. We viewed the grant as an opportunity both to deepen and to broaden our connections with the Ohio State University, but also with other universities, colleges, and seminaries in the greater Columbus area.

Our proposal was to institute a regular series of seminars that would include a presenter who is a working scientist—either a teacher, a researcher, or a graduate student—along with a theological response that I would provide. Thus far, we have had seminars focus on evolution and natural selection, language development in apes, the importance of ecosystems, nanotechnology, the life of stars, plant-plant interactions in desert climates, hydraulic fracturing, and susceptibility to cancer. Participating scientists have chosen topics from their teaching or something of interest to them. The theological responses have touched on issues of creation, the authority of Scripture, the problem of evil, the nature of thought and language, and the interconnectedness of life in the universe, among others.

In the construction and implementation of our project, we have taken as a guide Ian Barbour's four ways of relating science and religion.¹ The four ways Barbour posits are conflict, independence, dialogue, and integration. In the conflict mode,

2. See David C. Lindberg and Ronald L. Numbers, eds., *God and Nature: Historical Essays on the Encounter between Christianity and Science* (Berkeley: University of California Press, 1986).
3. See David N. Livingstone, *Darwin's Forgotten Defenders: The Encounter between Evangelical Theology and Evolutionary Thought* (Grand Rapids: Eerdmans, 1987).
4. See Nancy Murphy, *Beyond Liberalism and Fundamentalism: How Modern and Postmodern Philosophy Set the Theological Agenda* (Harrisonburg, PA: Trinity Press International, 1996).
5. Robert John Russell, *Cosmology from Alpha to Omega: The Creative Mutual Interaction of Theology and Science* (Minneapolis:

- Fortress, 2008), 156.
6. Russell, *Cosmology*, ch. 6.
7. Russell, *Cosmology*, ch. 6.
8. John Barrow and Frank J. Tippler, *The Anthropic Cosmological Principle* (Oxford: Clarendon Press, 1986).
9. Russell, *Cosmology*, ch. 7.
10. Nancy Murphy et al., eds., *Physics and Cosmology: Scientific Perspectives on the Problem of Natural Evil* (Vatican City: Vatican Observatory, 2007).
11. Stephen M. Barr, *Modern Physics and Ancient Faith* (Notre Dame, IN: University of Notre Dame Press, 2003).

science and religion contest the source of authority, either scientific endeavor or a literal interpretation of the Bible. In a sense, the lines between science and religion are blurred, with proponents of each side believing that their positions have greater authority than their opposites. Conflict, then, prevents any meaningful interaction between science and religion.

In a similar way, according to Barbour, when science and religion exist independently of one another, there can be no meaningful interaction, not because one is superior to or preferable to the other, but because they represent two completely autonomous spheres. Proponents of the independence of science and religion believe that neither science nor religion has anything to say that the other needs to hear.

The third mode of relationship Barbour describes is dialogue. Dialogue involves "indirect interactions . . . involving boundary questions and methods of the two fields."² Boundary questions arise on the outer edges of both religion and science and explore those edges for places and moments for learning, exploration, and growth. We see the opportunities for dialogue most clearly in the role of ethics in science and in the effects of scientific knowledge on religious doctrine and experience.

The final mode is integration. In this category, Barbour discerns three versions: natural theology, a theology of nature, and systematic synthesis. Natural theology is theology developed using human logic and reason. Proponents express their theology in cosmological arguments and teleological arguments. Cosmological arguments focus on the beginnings of the universe, positing a first cause, i.e., God as creator. Teleological arguments posit the existence of God based on the orderliness of the universe, and may include arguments from design. A theology of nature begins with religious experience and revelation and with the knowledge that we gain from science and then seeks to harmonize them. This requires some new thinking and new formulations of traditional religious doctrines. Systematic synthesis is a position in which proponents hold that science and religion both contribute to a coher-

ent worldview. In a systematic synthesis creation is an ongoing process that is as yet incomplete.

As we explore possible intersections of science and religion (we have named our Scientists in Congregations project "Believers Exploring Science and Theology," or B.E.S.T.), it has become clear that the first two of Barbour's modes of relationship do not work at University Baptist Church, so we have attempted to hold on to the tension between dialogue and integration by continually asking questions about both our religious beliefs and the knowledge that science brings to us.

Another essential belief that we have reiterated many times in our seminars is that we cannot prove the existence of God empirically or scientifically. No experiment we could devise would prove that God is the creator and shaper of the universe. At the same time, we understand that there is no method or experiment that science can design that would, or could, disprove the existence of God. For us, the existence of God is and always should be a matter of faith. We cannot know God exists if science is our only path to understanding, but we can "know" that God exists by the experiences of our lives. We have found the words of Galileo Galilei in a letter to Madame Christina of Lorraine an especially helpful guide in our exploration. Galileo wrote, "I do not feel obliged to believe that the same God who has endowed us with senses, reason, and intellect has intended us to forgo their use and by some other means to give us knowledge which we can attain by them."³

Endnotes

1. Ian Barbour, *Religion in an Age of Science: The Gifford Lectures, 1989–1991* (vol. 1; New York: HarperSanFrancisco, 1990), ch. 1.
2. Barbour, *Religion in an Age of Science*, 16.
3. "Galileo Galilei, Letter to Madame Christina of Lorraine, Grand Duchess of Tuscany: Concerning the Use of Biblical Quotations in Matters of Science (1615)," viewed online at the Interdisciplinary Documentation on Religion and Science website, under "Thinkers of the Modern Age": http://www.disf.org/en/documentation/03-galileo_cristina.asp; last accessed on 12 December 2012.



University Baptist Church in Columbus, Ohio, has a long history of service in the community of the Ohio State University. The congregation was founded in 1890 as a Baptist mission to the young university (the Ohio State University was founded in 1870). From the founding to the present, University Baptist Church has sought connection with the university, its students, faculty, and staff. The members of University Baptist Church value their connection to the university, and many are graduates.

Quite frankly, University Baptist Church has never understood science and faith to be in conflict with one another. There is a widely held belief here that, to borrow the words of Albert Einstein, "science without religion is lame; religion without science is blind." Additionally, we hold that there is neither need nor necessity to prove the existence of God. We believe and teach that God exists and that God is a good and loving creator, but belief is not proof in an empirical or scien-



David Wilkinson

From Big Bang to Accelerating Universe: The God of Creation and New Creation

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It could be argued that the subject of cosmology is of less importance today in the dialogue of science and Christian faith. After all, biological evolution remains the focal point of much controversy over intelligent design and six-day creationism, while newly emerging areas of neuroscience and artificial intelligence are asking theological questions about what it means to be human coupled with potentially difficult areas of public science policy.

These are important issues, but we need to be careful of going too far and neglecting a subject that continues to capture the public imagination. The exploration of the structure, origin, and future of the universe remains one of the big questions for both science and theology. Stephen Hawking's *The Grand Design* and Lawrence Krauss's *A Universe from Nothing* still top bestseller charts while making theological claims that God is not needed at the very first moment of the universe.¹ In fact, following the publication of *The Grand Design*, the *Times* newspaper led with headline "Hawking: God Did Not Create the Universe."² Dawkins and his fellow new atheists pick up on such popular science to add weight to their

critique of arguments for the existence of God.³ Meanwhile, news conferences at CERN, the European Organization for Nuclear Research, have been beamed worldwide, announcing that the Large Hadron Collider has found evidence for the existence of the Higgs boson. This continues to be labelled by the media as the "god particle," and questions are asked about its theological significance. In contrast, one of the biggest scientific discoveries of the first decade of the twenty-first century has attracted little theological discussion, although its implications may be the most profound. Work on the long-term future of the universe was recognized recently in the award of the Nobel Prize for Physics.⁴ It raises the importance of God's purposes for the physical universe and the meaning of new creation.

The tendency for Christian apologists and theologians to neglect questions of cosmology for other areas of science, or from the perspective that such modernist questions are a thing of the past in a postmodern world, can therefore miss both challenges and opportunities for Christian faith. What then are the key issues for Christian theological thinking and mission concerning the origin and ultimate fate of the physical universe?

The God of Humble Dialogue

Many media stories are driven by exciting new advances in theory and in experiment, but often coupled with theological naïveté. Many of the attacks on the notion of creation made by Hawking and Dawkins are no more than fresh versions of very old critiques of the cosmological and design arguments. Here the task of Christian theology is to agree with the flaws of the cosmological and design arguments and to show that they are not a part of the basis of belief in the God of the Bible. The "god particle" is a misnomer, with its discovery providing no new theological challenges. Here again theology needs to be a voice of calm.

Yet there are some areas where new discoveries do raise

significant new questions. Hawking in his most recent work provocatively claims that "philosophy is dead. Philosophy has not kept up with modern developments in science, particularly physics."⁵ This reflects a widespread feeling among scientists that there has been a lack of *specific* understanding or engagement with theories such as inflation, string theory, or M-theory. Instead, theologians and philosophers continue to assert generalizations about creation. Hawking's comments can also be echoed by those working not on the beginning but the end of the universe. In the twentieth century, which has been characterized by many as a century dominated by theologies of hope, it is remarkable how little direct engagement there has been with the long-term fate of the physical universe. Dan Hardy wrote, "It is partly due to the widespread avoidance of direct engagement with creation and eschatology by theologians . . . that scientists and those of a speculative turn of mind have turned to such wider issues."⁶ One of those scientists is the physicist Frank Tipler, who wants to "rescue eschatology from the hands of theologians who with a few exceptions . . . are quite ignorant of it."⁷

To overcome such prejudice and indeed ignorance, dialogue must begin with considerable humility on both sides. It is easy for Christians to point out the laziness of philosophical thinking on the part of Dawkins and Krauss. However, we need to do considerable work also. Cosmology is a rapidly changing subject area with significant dependence on the language of mathematics. This means that it is difficult for theologians to understand and engage. Perhaps a deeper reason is that within Western theology the physical universe is not seen to be important. Greek dualism downplays God's commitment to the physical; salvation is seen as individual deliverance from the material world; and hope is focused on the existence of the soul in heaven.

In contrast, the Judeo-Christian view expressed in the Bible sees the physical creation as good; the incarnation and resurrection of Jesus asserts God's commitment not just to human beings but to the physicality of the universe; and Christian hope is for a new heaven and a new earth, a new creation. Being clear about such biblical themes will help us to engage more seriously in the dialogue.⁸

The God of Messy Science

One of the difficulties in engaging in dialogue is that the scientific picture changes quickly and sometimes dramatically. For example, even up to the mid-1990s, cosmologists would have described two possibilities for the future of the universe. One would be that the total mass of the universe would reverse the expansion of the big bang, gravity taking over in a contraction leading to a big crunch. The second would be that

the universe would expand forever but would slow down in its expansion rate.

In 1998, astronomers began to look at distant supernovae explosions of stars to decide between these two possibilities. Their results showed something that was completely unexpected. The universe is accelerating in its rate of expansion due to some unknown type of force, the so-called dark energy.⁹ There had been no theoretical prediction of this, apart from Einstein's original inclusion of his cosmological constant in his solution of the equations of general relativity for the universe. It led to near panic among theorists, and to a range of possible explanations. The interpretation of an accelerating universe propelled by dark energy has been confirmed by more recent results from the Wilkinson Microwave Anisotropy Probe (WMAP).¹⁰ This is a reminder of how provisional the conclusions of cosmology can be and how much weight should be put on them in theological discourse.

Cosmology is very much a detective story, looking for clues or pieces of evidence that then allow the construction of the best model of what happened in the past and what will happen in the future. It is the weighing of evidence that is crucial in giving a sense of how robust the model is, and this "art" is quite difficult for the person without research experience in science. Christian theology must stand against the naive realism of some scientists and the media who present scientific models as the absolute truth on the way the world is. At the same time, it is not good enough for Christian apologists to try to win points in a debate by pointing out that as models change "they are only a theory." The reality of cosmology is that it is a messy business, a subtle interplay of theory and observation, human judgment and provisional models that are subject to change as new data are gathered. Models take time to be constructed, tested, and questioned by the scientific community, and there will always remain surprises.

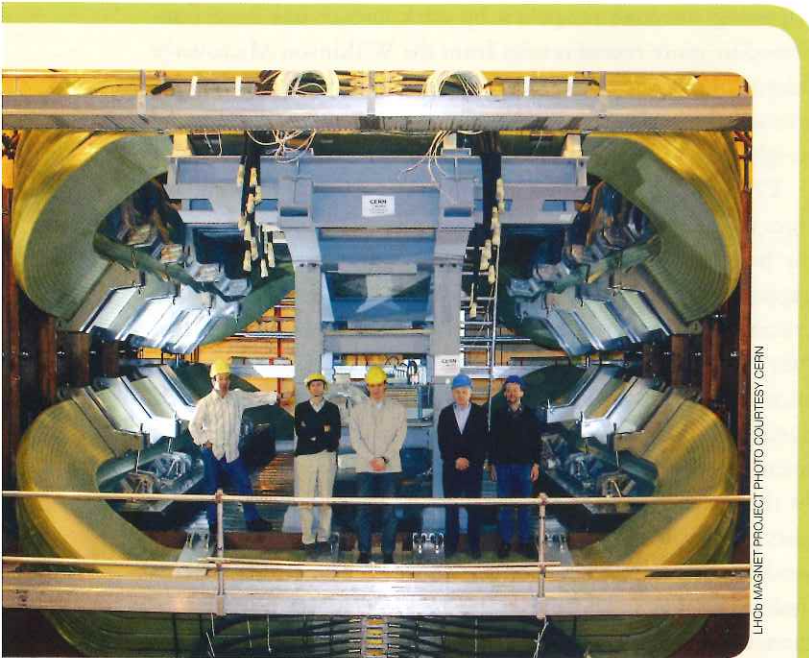
In such difficulties, a few theological voices may say that it is not worth the effort for theology to take science seriously. Yet here lies the importance of recognizing that science is a gift from God, a gift that gives us a critical realist view of the universe. The belief in order in the universe as described by mathematics began in Greek culture, but was strengthened by the Christian belief that the Creator is a faithful God. This led to the belief in universal laws of science. These laws enabled scientists to probe back in time and into the future. Observation, again encouraged strongly by the Christian worldview, thus took a leading role in determining how good were the suggested models.

One of the remarkable things about cosmology is that the surprises that the universe gives us often lead us to seeing that

at the heart of everything are the laws of physics, far more beautiful, elegant, and simple than we ever expected.

The God Who Has No Need of Gaps

Through the messy process of science, one of the great achievements of cosmology has been the big bang model of the origin of the universe. It describes the expansion of the universe from a time when it was only 10^{-43} seconds old. At that stage, 13.8 billion years ago, the universe was an incredibly dense mass, so small that it could pass through the eye of a needle.



LHCb MAGNET PROJECT PHOTO COURTESY CERN

LARGE HADRON COLLIDER

According to CERN, the European Organization for Nuclear Research, physicists and engineers are probing the fundamental structure of the universe using complex scientific instruments such as the Large Hadron Collider, the world's largest and most powerful particle accelerator.

In the book of Job, the Lord says, "Where were you when I laid the foundations of the world?"—and one could ask the same question of cosmologists! Yet this detective story of gathering the evidence and building the best model has worked very well. Three pieces of evidence were crucial. First, early in the twentieth century V. M. Slipher and Edwin Hubble observed that the light from other galaxies displayed a

phenomenon called redshift. This occurs when light is emitted by an object that is moving away from us. Hubble then measured the distances to these galaxies and found that the farther away they were, the faster they were moving away from us. He interpreted this to mean the space between the galaxies was expanding. And if it is expanding, it must have expanded from somewhere. Second, in 1965 Arno Penzias and Robert Wilson were attempting another experiment altogether when they detected an "echo" of the big bang, the microwave background radiation. Third, in the 1980s we were able to measure the amount of helium in the universe, which is a good test of theoretical models of the big bang, and it was in good agreement with predictions.

Yet not all of the questions concerning the big bang can be answered. Observations by the Wilkinson Microwave Anisotropy Probe have confirmed our overall picture of the big bang, but have also reminded us how much we still need to learn. A large proportion of the universe is in the form of dark energy (over 70%) and at the moment we have little idea as to what it is. Another 23% of the universe is in the form of dark matter; we know it is there but we are not sure what it is. The fact that we know only a tiny fraction of what the universe is made of is somewhat embarrassing for cosmologists. Yet the power of science is that we know what we do not know, and we are able to design experiments at the Large Hadron Collider that might at least tell us what dark matter is.

Some questions are much more difficult. The standard model of the hot big bang describes the origin of the universe as an expansion from a singularity, that is, a point of infinite density. But that singularity raises immediate problems. First, general relativity, which describes the expansion of the universe so well, suggests that time is not completely independent of space, and that gravity is then explained as a consequence of this space-time being curved by the distribution of mass-energy in it. Thus the distribution of mass determines the geometry of space and the rate of flow of time. However, at a singularity there is infinite density and infinite curvature of space-time. General relativity is unable to cope with this infinity and predicts its own downfall; that is, the theory breaks down at the singularity. Second, general relativity as a theory is inconsistent with quantum theory. General relativity, which is extremely successful in describing the large-scale structure of the universe, needs to specify mass and its position in order then to describe the geometry and rate of flow of time. At a singularity, where the gravitational field is so strong and the whole universe is so small that it is on the atomic scale of quantum theory, it is believed that quantum effects should be important. Quantum theory, however, says that one can never know both the mass and position without an intrinsic un-

certainty. One cannot have both general relativity and quantum theory to describe a situation.

The singularity problem therefore is that general relativity is unable to give a description of the singularity; in other words, general relativity cannot explain the initial conditions of the expansion of the universe. Present scientific theories are thus unable to predict what will come out of the singularity. They can describe the subsequent expansion but are unable to reach back beyond an age of 10^{-43} seconds to zero. This "limit" of scientific theory, unable to reach back to the very beginning, was frustrating to physicists but attractive to some theologians. Is God needed to "fix" the initial conditions of the universe? If science is unable to describe the initial moments, is this "the gap" where God comes in to set the universe off?

However, many scientists resist this trajectory. Hawking attempts to use the laws of physics to explain not just the evolution of the universe but also its initial conditions. In order to do this one must bring quantum theory and general relativity together into a quantum theory of gravity. Such a theory, he suggests, can explain how the blue touch paper of the big bang lights itself. The core of Hawking's theory, in John Barrow's phrase, is that "once upon a time there was no time."¹¹ According to Hawking, the universe has a beginning but it does not need a cause, since in this theory the notion of time melts away. Hawking's universe emerges from a fluctuation in a quantum field. No cause as such is necessary.

Hawking believes that the best theory for explaining the universe's initial conditions is M-theory, which is, in fact, a whole family of different theories where each theory applies to phenomena within a certain range. It suggests eleven dimensions of space-time. However, for Hawking it also suggests that our universe is one in 10^{500} universes that arise naturally from physical law. For him, "their creation does not require the intervention of some supernatural being or god."¹²

It must be stressed that Hawking's thinking on this is not fully accepted by the rest of the scientific community. There are other proposals on how to deal with the problem of the laws breaking down, and it remains difficult to know whether quantum theory can be applied to the whole universe.

If Hawking's attempt to explain scientifically the first moment of the universe's history is indeed successful, then this rightly demolishes a "god of the gaps." But the God of Christian theology is not a God who fills in any gaps of current scientific ignorance, nor one who interacts with the very first moment of the universe's history and then retires a safe distance. Hawking's use of M-theory may eventually work, but the Christian theologian, while applauding enthusiastically, will also raise the question of where M-theory itself comes from. God is the one who creates and sustains the laws of

physics, which science assumes but does not explain.

Such a god-of-the-gaps argument has sometimes been used in apologetic arguments in attempts to prove the existence of God. The argument that the big bang needs God to start it off is called the "cosmological argument" in temporal form and has been used in different contexts for centuries. However, it has a number of weaknesses. Augustine pointed out many years ago that the universe was created with time, not in time. Therefore to ask the question what came *before* the universe is an attempt to use the concept of time before time itself came into existence. In addition, the first-cause argument derives from a notion that the universe is a thing or event. It is easy to say that everything has a cause, but is the universe a thing or event?

More importantly, as scientists explain more and more of the universe, there is a temptation to look for unexplained gaps in the knowledge of the natural world in order to find space for God. But this "god of the gaps" is always in danger of becoming irrelevant as science fills in more of its own story. In contrast, the Bible understands that the whole universe is the result of God's working. God is at much at work at the first 10^{-43} second as at any other time. A scientific description of that moment in time does not invalidate it as being the activity of God any more than one does for any other event. And this leads us to another key point.

A God of Theism, Not Deism

Too often Christians have viewed the Creator God in deistic terms, not theistic terms. Deists believed in a God who set the universe in motion and then went for a cup of coffee, having nothing more to do with it. Perhaps this was motivated by first-cause arguments for the existence of God, and perhaps it was due to viewing the Christian theology of creation as built simply on the first chapters of the book of Genesis.

However, the biblical material is much broader and richer. Genesis needs to be set alongside other passages, such as Proverbs 8:22–36 and Job 38:1–42:17—which stress the wisdom of God in creation—passages that celebrate the glory and majesty of God (Psalms 8, 19, 148; Isaiah 40:9–31), and passages that look forward to new creation (Isaiah 65:17–25; Romans 8:18–27; 2 Peter 3:3–13; Revelation 21:1–8).¹³ In this latter regard, of course, central to the New Testament is the role of Christ in creation (John 1:1–18; Colossians 1:15–20; Hebrews 1:1–14), regarded as the word or wisdom of God through whom all was spoken and in whom all are destined to find their authentic voice. In all of these passages, it is clear that creation is not the subject of pure intellectual speculation, but is used to convey a message about God and God's relationship with the world. Here cosmology is rarely of inter-

est for its own sake. While the interest of the modern world may be on how the theology of creation relates to scientific cosmology, the biblical writers were concerned with something very different, namely, with the meaning of things in God's providential plan.

Take, for example, the depiction of Christ at the heart of creation in Colossians 1:15–20. Here we find applied to Jesus everything that could be said of the figure of “wisdom” in creation (Proverbs 8:22). The implication is that at the heart of creation is not simply a divine attribute but a divine personality. Christ is proclaimed here as “the firstborn over all creation” (v. 15), signifying his supreme rank or that he is prior in importance. Nor is Christ simply a part of the created order, “for by him all things were created” (v. 16). Creation, in this view, is the activity of God the Father in the Son: not only do all things have their origin in Christ, but “in him all things hold together” (v. 17). The verb is in the perfect tense, indicating that “everything” has held together in him and continues to do so, that through him the world is sustained and prevented from falling into chaos. The source of the universe's unity, order, and consistency is to be found, Colossians is suggesting, in the continuing work of God in Christ.

Far, then, from cosmology standing in conflict with Christian faith, it is properly affirmed by Christian theology, given that the whole of the created order is thought of as owing its origin, purpose, and continued existence to Christ. Indeed, in this way of thinking, the exploration or use of the order in the universe is only possible because of Christ.

This is a further insight into God's relationship with the universe. The biblical images are not of a deistic god who breaks a bottle against the hull of the universe and then waves it off into the distance saying, “Good-bye, see you on judgment day.” “In him all things hold together” gives much more a picture of God as the one who keeps the universe afloat and together. God is the basis of the natural order, the basis of the physical laws. In John Polkinghorne's phrase, God is the guarantee of the physical equations by which the universe develops. This is much more the God of Christian theism rather than deism. Don Page, a long-time collaborator of Hawking, sums it up with these words: “God creates and sustains the entire universe rather than just the beginning. Whether or not the universe has a beginning has no relevance to the question of its creation, just as whether an artist's line has a beginning and an end, or instead forms a circle with no end, has no relevance to the question of its being drawn.”¹⁴

The God of Word and Works

In this critique of the “god of the gaps” and deism, Hawking and others may be pushing Christians back to their biblical

roots. God is not proven through philosophical arguments. God is known through his self-revelation in becoming a human being in Jesus Christ. Karl Barth put it bluntly: “I believe in Jesus Christ, God's Son our Lord, in order to perceive and to understand that God the Almighty, the Father, is Creator of heaven and earth. If I did not believe the former, I could not perceive and understand the latter.”¹⁵ This conviction underpinned Barth's hostility to any idea of natural theology, which starts outside of revelation and is not a result of grace. For many other theologians, Barth pushes his argument too far at this point in denying that humans have the ability to see something of the Creator in creation itself and in appearing not to value the physical creation as anything other than as a backdrop to God's activities. Indeed, from the beginning of the scientific revolution, Christian thinkers such as Francis Bacon saw God revealing himself in both the book of his Word and in the book of his works. This knowledge of God through the universe was never enough for salvation, but it did expand our perspective of the nature of God.

It is interesting that in the last four decades of cosmology, a number of scientists have been led to a range of philosophical and theological questions. While science has been extremely successful, the universe it has revealed seems to pose questions that go beyond science. This is particularly fascinating when these questions are asked by cosmologists such as Paul Davies, who would not share any Christian commitment.

What have these scientists responded to? First, there is the question of *the purpose of the universe*. Leibniz asked many years ago why there is something rather than nothing. This is not to resurrect the first-cause argument; rather, it is to recognize that the purpose and meaning of the universe lie beyond science. The Christian will argue they find a natural answer in a personal God.

Second is the question of *the origin of the scientific laws*. If the universe emerges as a quantum fluctuation, we need to ask where quantum theory itself comes from. Where does the pattern of the world come from and how is it maintained? This is not a “god of the gaps” argument, as science itself assumes these laws in order to work. Once again the Christian will argue the Creator God is the natural answer.

Third, there is the question of *the intelligibility of the universe*. Why does the mathematics of our minds resonate with the mathematics of the universe expressed in the laws of physics? A number of physicists find the beauty, simplicity, universality, and intelligibility of the laws of physics themselves to be pointers to this universe having a “deeper story” to its existence.

Fourth is the question of *anthropic balances*. Drawing attention to balances in the circumstances and laws of the universe that make it just right for the emergence of intelligent life, Paul Davies characterizes this as *The Goldilocks Enigma*.¹⁶ This can be illustrated in the extraordinary fine tuning of numbers fundamental to the universe—such as the ratio of the electric force to the gravitational force, how firmly atomic nuclei bind together, the ratio of energy needed to disperse an object compared to its total rest mass energy, and the number of spatial dimensions in the universe. If any of these numbers were only slightly different from what they are, we would not be here. While this cannot become a proof of the existence of a Creator, some of these balances are so extraordinary that for many people they point to some kind of purpose in the universe.

Fifth, there is the question of *awe*. Whether in response to the dramatic photographs of the universe taken by the Hubble Space Telescope or in those moments when the scientist sees that underneath the complexity of the universe are a few elegant laws, this sense of awe for many resonates with the words of the psalmist: “The heavens declare the glory of God” (Psalm 19:1).

None of these insights into the way the world is can be promoted to proofs of the existence of a Creator God. For example, anthropic balances have an alternative explanation to the design of God. This explanation is that the anthropic principle selects this universe out of many. We see this fine-tuning because we are here. In other universes where these numbers were different, there would be no one to see them. While there are many theories of many universes, there is considerable debate as to whether other-universe speculation is metaphysics or physics. Can we know that they are there by the passing of information from one universe to another, or do we accept their existence on the basis of the prediction of theories that solve other problems to do with our early universe? Such speculation about the existence of other universes cautions us against resurrecting the proof-of-design

argument. As long as we lack physical evidence for other universes, it remains metaphysical speculation, and an alternative explanation to that of a Creator God.

Anthropic balances and other insights do not prove the existence of a Creator, but they do provoke questions and for



BIG BANG

The “big bang” is the dominant scientific theory explaining the origins of the universe. According to it, the universe came into existence 13.8 billion years ago and continues to expand.

some are pointers to the existence of a Creator. These questions and pointers find answers and are integrated into a consistent picture from the perspective of a Creator who is revealed in the life, death, and resurrection of Jesus Christ.

A God of Beginnings and New Beginnings

Earlier, we noted the contemporary importance of work on the long-term future of the universe and some of the theological questions it raises. These have often been neglected due to a focus on origins in the dialogue of theology and cosmology. Yet the work of Saul Perlmutter, Adam Riess, and Brian Schmidt, recognized in the award of the 2011 Nobel Prize in Physics, asks the Christian how God's purposes can be seen in the light of an accelerating universe leading to heat death.

Today, cosmology looks ahead with pessimism rather than optimism. It points to a future of futility for the physical and with it the end of the survival of intelligent life within the universe. An accelerated heat death is a bleak end. When the universe is 10^{12} years old, stars cease to form, as there is no hydrogen left. At this stage all massive stars have now turned into neutron stars and black holes. At 10^{14} years, small stars become white dwarfs. The universe becomes a cold and uninteresting place composed of dead stars and black holes.

As might be expected, science has attempted to provide some optimism and indeed salvation for human life. Freeman Dyson and Frank Tipler are struck by the ability of humans in manipulating the environment of the Earth and wonder if this could be extrapolated forward. Dyson suggested that biological life would adapt first through genetic engineering to redesign organisms that could cope in such a universe. Consciousness would be transferred to new kinds of hardware that would be able to cope with the ultra-low temperatures of a heat death universe, including, for example, a com-

plex dust cloud. In this way “life and intelligence are potentially immortal.”¹⁷ Tipler sees consciousness transferred to computers that expand across space. He argues that it is possible on such a model that a point will be reached when an infinite or maximum amount of information will have been processed and “life” has expanded everywhere in the universe.¹⁸ However, neither Dyson’s nor Tipler’s models can cope with an accelerating universe. Science cannot change the prediction that the future of the universe itself is futility.

Carl Hofmann

From Conflict to Connectedness: A Local Congregation Encourages the Science-Faith Dialogue

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Imagine hearing a church member and research scientist remark, “I often feel more accepted by my non-Christian colleagues in the lab than I do by my fellow church members.” An isolated comment? Not quite.

Funded by the Templeton-sponsored Scientists in Congregations program, our two-year initiative is eliciting several similar comments.

Escalating culture wars and the recent election season have expanded the perceived divide between science and Christianity. Too often church members feel they must choose either biblical faith or scientific materialism. We are challenging that perception.

The Scientists in Congregations vision “calls for a sustained, creative collaboration between practitioners in the fields of science (scientists or science educators) and theology/faith practice (pastors) who are already engaged with one another through shared participation in the life of a congrega-

tion.” Our large, evangelical, mainline church in Boulder, Colorado, is well suited for this collaboration. For nearly 140 years we have been neighbors of the University of Colorado, Boulder, where many of our church members are employed in teaching or administration. Many congregants also serve in federal research laboratories or privately owned technology firms. Science fills the air of our rarefied Rocky Mountain region, one of the best-educated portions of the United States. Our grant seeks to build bridges of listening, learning, and constructive engagement within our church membership and beyond it into our northern Front Range community.

The first bridge is between a pastor and a scientist in the congregation. I am particularly fortunate to have as my grant coleader a University of California at Berkeley-trained PhD in chemical engineering, an ordained Presbyterian elder who is exceptionally well-read theologically. Allan Harvey is a scientist at the National Institute of Standards and Technology, and we have enjoyed many profound conversations about the theological implications of recent scientific discoveries. These have taken us into new ways of interpreting human origins in Genesis, taking into consideration paleontology, cosmology, and the Human Genome Project. We are probing theistic evolution and traditional understandings of the Fall, and reflecting on what it means to be made in the image of God. We are tackling concepts like the human soul, free will, and the implications of brain science.

We have recruited a planning team of church members who are climate scientists, geologists, biologists, and physi-

Paul Davies suggests that an “almost empty universe growing steadily more cold and dark for all eternity is profoundly depressing.”¹⁹ Some theologians will say that this is so far in the future that it is irrelevant, while others have concentrated their thinking on the future of the Earth, the individual believer, or the church.

What biblical themes might be important for thinking about the future of the physical universe that might give hope? First we note the importance of the theme of new creation within a range of biblical genres. Revelation presents a

vision of “a new heaven and a new earth” (21:1). This is not about some other-worldly existence that has no connection with the physical universe. It is about God doing something with the totality of existence. At the same time it is about something new, not about keeping this creation alive for as long as possible—which is the hope of such “eschatological scientists” as Dyson and Tipler.

Second, new creation is a possibility because of a Creator God. The new creation is continually linked to God’s original creative work, and hope for the future is built on an un-

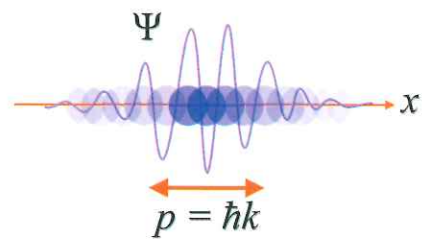
some more conservative (and vocal) congregants have voiced their concerns, perceiving this offering as a potential slippery slope into theological compromise and apostasy. As leaders, we have realized there is a necessary pastoral care component to our project; we need to be non-anxious and open to meeting with people to hear and discuss their concerns. Yet at the same time we must stand for what we believe are the complementary aspects of God’s truth expressed both in the Book of Scripture (special revelation read with open minds and the eyes of faith) and the Book of Nature (general revelation studied with the tools of science). In this current climate of division and suspicion, striking this balance is not easy.

It is delightful to watch how this Scientists in Congregations program has spread beyond our church walls. We have been featured in a local newspaper article and we are noticing that our church members are bringing scientific colleagues and friends from other churches to our gatherings. But most gratifying of all is the quiet, transforming effect this program is having with some who have previously felt alienated by the church. One long-time church member shared these words:

I felt acceptance by the congregation required a closed-minded, simple regurgitation of litanies whether they had meaning or were applicable to life as we currently must live it. I continued to attend sporadically, but out of a sense of spiritual duty, not from joy. I even came to the point of questioning my faith in Christianity and the religious practice of it. . . . And then I started attending the class on Science and Christianity. Because you were willing to open a dialogue within the church membership about very important and significant things, I feel renewed. . . . I have not only found that there are many within our congregation who struggle with the same issues as I do, but that we can come to a reasonable, thoughtful reconciliation.

derstanding of God as Creator (Isaiah 65:17–25). Whatever the circumstances, creation is not limited to its own inherent possibilities because the God of creation is still at work. A God who is not free to work in the universe must watch the slow heat death of creation. Richard Bauckham rightly attacks models of providence that make God dependent on the universe: “A God who is not the transcendent origin of all things but a way of speaking of the immanent creative possibilities of the universe itself cannot be the ground of ultimate hope for the future of creation. Where faith in God the Creator wanes, so inevitably does hope for the resurrection, let alone the new creation of all things.”²⁰

The scientific predictions of the end of the universe are a reminder that models of providence have to take seriously the universe over its entire history, rather than just the present state of the universe. Models that stress immanence too



QUANTUM THEORY

Quantum theory, also known as quantum mechanics or quantum physics, is a branch of physics concerned with physical phenomena on the atomic and subatomic levels. It evolved during the twentieth century out of a study of fundamental properties of matter, and departs from classical mechanics at the quantum realm of atomic and subatomic length scales, providing a mathematical description of dual particle-like and wave-like behavior within interactions of energy and matter.

much at the expense of transcendence face a bleak future in the end of the universe. At the extreme limit of this, models where God is a superior intelligence totally contained in the universe, as have been developed by some scientists in a revamped natural theology, become gods who eventually will die.²¹ Likewise, models that stress God’s nonintervention in the universe are presented with an interesting question in terms of the end of the universe. For example, Maurice

Wiles’s model sees God simply sustaining the creative process of the universe, limiting himself not to act in the world in any particular way.²² This raises the question of why God is sustaining a process that will end in futility.

Third, creation and new creation are mutually interdependent and find their focus of connection in Jesus Christ (Colossians 1:15–20). This is a reminder of something that should be obvious but in practice is often forgotten. Creation needs to be seen in the light of new creation, and new creation needs to be seen in the light of creation. A great deal of work in the dialogue of science and religion has concentrated on the doctrine of creation with little reference to the end of the story. The suffering, frustration, and decay of this world show that this creation is necessary and also points forward to a new creation (Romans 8:18–30).

Fourth, new creation is a transformation of the present creation rather than a total annihilation and beginning again. Bauckham is correct in seeing such passages as 2 Peter 3:10–13 in the context of Jewish apocalyptic. In contrast to the dissolving and renewing fire of the Stoics, and to the Zoroastrian view of purification, here the emphasis is on judgment. Bauckham concludes that such passages “emphasize the radical discontinuity between the old and the new, but it is nevertheless clear that they intend to describe a renewal not an abolition of creation.”²³

Fifth, God is at work toward new creation both in the process and in the particular event. The second coming of Christ reminds us that biblical eschatology has a focus on Jesus Christ, and the images used are further suggestive of an eschatological event, an event that is both in space and time and yet transcends space and time (1 Thessalonians 4:13–5:11). This is a reminder of the importance of the particular action of God within God’s more general activity of sustaining and transforming. Thus the redemption of this creation is pictured in terms of a long process, working through contemporary structures, as well as a specific event of judgment.

Sixth, the resurrection of Jesus is the model by which the continuity and discontinuity between creation and new creation are held together. If, as Paul argues, the resurrection is the first fruits of God’s transformative work, then there should be both continuity and discontinuity in the relationship of creation and new creation just as there was in the relationship of Jesus before the cross and Jesus risen. The empty tomb is a sign that God’s purposes for the material world are that it should be transformed and not discarded. If resurrection affirms creation, then it also points forward to new creation.

Continuity and discontinuity in the transformation of the physical universe may be located in the nature of matter,

space, and time. To take time as an example, the resurrected Jesus does not seem limited by space and time. In new creation the continuity may be that time is real but the discontinuity is that time no longer limits us in the way that it does in this creation. It could be argued that the resurrection body is characterized by decay’s reversal, that is, a purposeful flourishing. In this creation, time is associated with decay and growth, but in new creation might time be simply about growth? We are therefore suggesting that our experience of time in the physical universe is a small and limited part of an ontologically real time that we might call eternity.

Seventh, the Spirit’s work both in the church and the world is transformative. Wolfhart Pannenberg’s conviction is that the work of the Spirit needs to be seen as dynamic and as giving priority to the whole over parts. He wants to see the Spirit as giving cohesiveness to the universe. Indeed, the work of the Spirit could be seen as giving cohesiveness to the work of new creation. Perhaps the Spirit is the ground and the redeemer of the relationality inherent in the universe. Can we therefore see signs of the Spirit restoring damage and progressing God’s work on to completion? This may be an area that has received a lot of attention in terms of the Spirit’s work in the life of the believer, but how do we see it in the cosmic context? In Paul’s discussion in Romans 8, the Spirit works in the tension between creation and new creation, sharing in the “groaning” of this creation and yet pointing forward to the hope of that which is to come. Yet the Spirit’s work is more than that. If the damage of sin is the breaking of relationships between Creator, creatures, and creation, then is the Spirit’s work of restoring those relationships in part a sign of the final reconciliation of a new heaven and a new earth? Restored relationships now in terms of individual forgiveness, community reconciliation, the care of animals, and responsibility for the environment then become signs of God’s purposes for the whole of creation.

These seven points set out a structure for dialogue. They do not set out to map the biblical account exactly onto the scientific account, or to see them as completely independent. The Christian will come to the scientific description of the future of the physical universe with much to learn but also much to offer.

The distinguished cosmologist Martin Rees comments, “What happens in far-future aeons may seem blazingly irrelevant to the practicalities of our lives. But I don’t think the cosmic context is entirely irrelevant to the way we perceive our Earth and the fate of humans.”²⁴ This is a challenge to all theologians, not least those who take openness seriously.

A Christian theology of creation maintains that this creation really is good, while also looking forward in the pur-

poses of God to a new creation. This hope of a new creation is not of God completely starting again, or the hope for some kind of disembodied immaterial state, but the hope for the transfiguring fulfillment of this present creation into all that it was called into being to be. Given this combination of identity and transformation, the present created order is not to be written off as evil or unimportant, but is, rather, to be cared for, respected, enjoyed, and delighted in. TNN

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Richard F. Carlson

What Should I Say about Dinosaurs? A Christian Physicist Reflects on the Origins of Life

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What about evolution? A young mother once asked me, “What should I tell my children about dinosaurs?” This question can be expanded a bit. What should we teach (or allow someone else to teach) our middle school or high school children about the origins of the cosmos, the Earth, and life on our Earth? What our children are taught before they leave high school may strongly influence their relationship to the church and to Jesus as they encounter later science courses along with various worldviews, particularly in college. I maintain that we must always tell our children the truth, including the truth regarding origins. As followers of Jesus who live in the world God created and upholds, we are aware of two sources of knowledge about this very good creation. We read in the Bible about creation, and all of us are aware of at least some aspects of that same creation as understood by natural science. The accounts of creation in these sources do not use the same words and do not have the same overall areas of concern, but we can expect that at least the accounts should not conflict. The book of nature described by science should not contradict the book of nature as read from the Bible. But for the past century and a half, too much conflict has existed.

In this essay I will present a picture of the current scientific status of origins—of cosmic development, the Earth’s origin, and the development of life on our Earth in terms of what is called contemporary cosmology, geo-science, and biological

evolution. Included will be the current scientific consensus and notice of unsolved scientific puzzles, followed by a brief discussion of concerns raised by Christian voices. Finally, I will respond to the question raised earlier by the young mother. Before beginning, I should note that this is a daunting topic on which hundreds of thousands of pages have been written. People have spoken, and people have argued. This limited essay will only scratch the surface by providing a brief overview of the topics I have listed. I have provided a book list to guide the reader into more detailed presentations of topics raised in this essay. I am aware that fools go in where angels fear to travel, and admit to being foolish on occasion.

Origins

There are three scientific topics to consider—the origin of the universe, the origin of the Earth, and the origin and development of life on the Earth. Physicists and cosmologists have developed an understanding of the beginnings of the universe for which there is good scientific consensus. The conclusion by cosmologists is that 13.8 billion years ago a cosmic fireball appeared from what seemed to be nothing. In fact, nothing for which we have scientific evidence existed beforehand, not even space or time. These scientists have determined the universe’s age with their estimate of an uncertainty of 0.12 billion years, an uncertainty of less than 1 percent. However, no definitive scientific understanding of the universe exists before the big bang, as there is no way to scientifically explore that era. For the time span just beyond the first fraction of a second after the big bang, cosmologists are confident that they know rather well how the universe developed subsequently, including the formation of our solar system and Earth.

During the course of cosmic advancement, objects on the scale of our solar system formed approximately 5 billion years ago, our planet 4.54 billion years ago (with 1% uncertainty), and complicated molecules on Earth that could self-replicate about 3 billion years ago, according to earth-scientists. How

the first self-replicating molecules (meaning molecules associated with life) formed remains an unsolved puzzle. For about a half-century a number of theoretical schemes along with experimental work have been directed toward trying to answer this question, with no clear satisfactory solution as yet.

Scientists who are actively pursuing biological research are confident that for the time period beginning after the appearance of life on Earth, contemporary evolutionary science gives a good account for the development of life up to the present time. Many Christians who conclude that evolutionary science correctly describes how God has brought about and continues to uphold the created order refer to this entire package as evolutionary creation. This is in contrast to evolution advocates who maintain an atheistic religious position. It is important to note that evolutionary science does not imply an atheistic worldview, or for that matter, a theistic worldview. Evolutionary science is neutral or agnostic in regards to metaphysical implications; it is a naturalistic endeavor in scientific method only and implies no religious or philosophical position. As a result, Christians who find evolutionary science to be an accurate description of how life has developed on Earth are quick to point out that evolution is the mechanism by which God has brought about the wonderfully diverse life we now observe on his Earth, and they maintain that this mechanism is well described by contemporary biological science.

We need to know clearly what we are talking—or arguing—about, so let’s begin with definitions.

(1) *Model, theory, and law*: Used in a scientific sense, a *model* is a representation of a certain limited number of scientific facts (scientific data) in terms of some well-understood picture or object. For example, the optical model of the nucleus represents the nucleus of an atom as a partially opaque crystal ball, since there are at least three nuclear phenomena that behave like a beam of light shining on a partially cloudy crystal ball. A scientific model is a first attempt at correlating diverse scientific data with the goal of eventually formulating a higher-level understanding of the phenomena in terms of a theory.

A scientific *theory* encompasses a more comprehensive set of phenomena than does a model. The scientific use of the term *theory* does not imply a guess or a scientific shot in the dark. Rather, it is a scientific shorthand designation representing the correlation of a large and diverse set of data related to a broad topic. To designate a scientific description as a theory implies a powerful idea and understanding. Hence, to refer to contemporary neo-Darwinism or evolution as a theory implies that it is the reigning paradigm and undoubtedly the beginning point

of any further research in this particular field of study. The theories in physics include the electromagnetic theory by Maxwell (1860s), quantum theory (1930s), relativity theory (early 20th century, Einstein), and in biology the neo-Darwin theory of evolution, each of which gives scientific understanding to a wide swath of phenomena, and each of which is held in high esteem by the scientific community.

The *laws* of science are short statements that usually refer to a more restricted phenomenon or idea but on which there is universal acceptance. A law summarizes data and many times refers to something that is thought to be invariable. Newton’s law of gravity seems to be without exception. The second law of thermodynamics, when stated correctly, is consistent with all known phenomena. The law of conservation of energy is another example.

As a result, when people ask whether evolution is a fact or *only* a theory, they display some misunderstanding. The theory



MISSING LINKS

The term “missing link” refers to a transitional fossil of any lifeform showing traits of its ancestors and its descendents—an idea informed by Charles Darwin’s evolutionary theories. Pictured is a model of an *ambuloctetus*, Greek for “walking whale.”

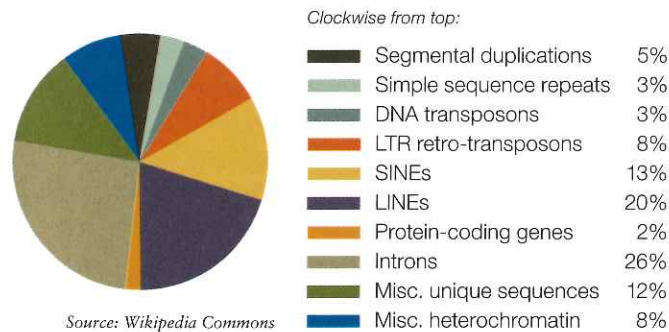
of evolution, implying a scientifically comprehensive understanding of a huge and diverse amount of biological data, and *not* simply a guess or a shot in the dark. Designating the scientific understanding of biological processes as a theory implies that this understanding has a very high vote of confidence with those scientists working to understand these processes. If I ever developed a scientific understanding of the nucleus that is referred to by the nuclear physics community as the Carlson Theory of the Nucleus, I would be very proud and pleased. (I, however, continue to wait.)

In sum, evolutionary theory correlates, systematizes, and interprets an enormous array of biological data (facts) related to the development of life on the Earth into a coherent and small set of principles that account for these data in an elegant way. And this is called the theory of evolution or neo-Darwin-

ism. Biologists working in this field will be greatly surprised if current evolutionary thought is replaced by any scientific theory that is significantly different. Of course, this is entirely possible. No scientific theory is 100 percent certain. It is said of scientists that, if they marry a scientific theory, they may someday find themselves to be a widow or a widower.

(2) *Microevolution, macroevolution, theory of evolution, evolutionism, and naturalism*: These terms need some clarification. Microevolution and macroevolution are different, but they involve essentially the same processes. *Microevolution* refers to small changes in species due to the processes of evolution that accumulate over relatively short periods of time (up to a few centuries) within a population. These changes allow a given species to adapt to changes in its environment, and have been observed in numerous instances. *Macroevolution* is major evolutionary change at the species level or higher, resulting in the formation of new species. In one sense speciation and microevolution are different processes in that speciation often requires the new species to have some type of isolation from its parent group in order to keep the new species distinct. Apart

COMPONENTS OF THE HUMAN GENOME



from this, speciation requires no processes other than what is found in microevolution. The *theory of evolution* is an advanced scientific model, currently at the status of a theory (see the previous discussion of model and theory), whose goal is to explain mechanisms of the development of life on the Earth over a long history, and it does so in terms of common ancestry and descent with change. *Evolutionism* or *naturalism* is a philosophical attempt to extrapolate from the scientific theory of evolution to support the atheistic claim that there is no Creator God or any special significance to human life, and therefore no creation of humanity in the image of God. Whereas Christians are divided over whether to support the scientific theory of evo-

lution, no Christian will support the atheistic philosophical system of evolutionism.

Evolutionary Theory

Contemporary evolutionary theory encompasses at least the following topics:

- An ancient universe and Earth—measured in billions of years rather than thousands
- First life on Earth
- Natural selection
- Common ancestry and the fossil record—descent with modification
- Biogeography
- Biochemistry and evolution—tracking lineage by tracking genes
- Complexity and self organization

Central to the science of evolution is a great expanse of time. The evolutionary idea of life on Earth developing from the most primitive and simple form to where it is in its magnificent and diverse character throughout our Earth requires time—over hundreds of millions of years, even billions of years. The historical sciences of cosmology and geophysics have used over a dozen independent strategies by which to determine the ages of the universe and Earth. Scientists throughout the world have worked on these problems and have determined both ages with a claimed uncertainty of less than 1 percent. If these results are reliable (and my conclusion is most likely that they are), the bottom line is that the universe and Earth are billions of years old, 13.8 billion years for the universe and 4.5 billion years for the Earth. This means that the expansive timeframe required for the development of life in terms of evolutionary mechanisms is in place.

The Earth is old enough for a long evolutionary process. But the Earth at its formation was just that—earth (“the dust of the ground” as we read in Genesis 2:7). There was no living thing. How did life begin? Scientists do not know the answer to that question. That is, scientists do not as yet understand how the first life (the first self-replicating molecules) could have been produced by mechanisms that can be understood scientifically. Scientists eschew “god of the gaps” explanations, so are continuing the quest for a scientific understanding (as scientists always do in pursuit of solutions to important unanswered scientific questions.)

Most of what we see or experience can be given a good accounting by science. That does not imply that there can be no religious understanding of those phenomena, for theology answers the *why* questions whereas science answers the *how* questions. Hence, even though as followers of Jesus we understand that God created all life, including the first life on Earth,

this compliments rather than replaces or invalidates the scientific goal of a scientific accounting for the development of the first life on Earth. In addition, this gap in scientific understanding does not invalidate the remainder of evolutionary thought.

Darwin’s central concept was that of natural selection. The idea is that there is diversity in species, not enough food to go around, and that some organisms do better because they have a more favorable gene pool for their particular environment. Darwin suggested this process of natural selection resulted in the creation of new forms of life from previous ones.

Another fundamental evolutionary concept is that all life, from bacteria to sequoia trees to spiders to grizzly bears to mosquitoes and to humans, developed from a single source. Recent developments in molecular biology have been used to support the proposal that all of life is connected through a common genetic language shared by all living things.

Biogeography is the study of patterns of species distribution across geographical areas and through geological time. Darwin’s observations of finch populations on the Galapagos Islands led to his earliest evolutionary concepts. Modern scientists use biogeographic research to support the idea of common descent.

Before the advent of molecular biology, fossils had been studied for at least 2.5 millennia before the science of paleontology was fully developed in the nineteenth century. Putting together coherent and supportable conclusions from the fossil record is a challenge, because fossils represent only a very small proportion of all the organisms that have ever lived. Fossils only form under specific conditions. Since decomposition is a requirement for environments to remain healthy, fossilization represents a deviation from normal natural processes. Paleontologists conclude that the fossil record provides a strong hint for the idea of the relatedness of all life on Earth. But how complete is the fossil record? Are there “missing links”? The answer given by biologists, Christian or not, is that fossil data shows a clear picture of how creation took place among developing lineages, for example, from dinosaur to modern robin, fish to amphibian, land animals to whale, etc. And more and more such evidence continues to be found in other transitions. In addition to the missing link question, other questions have been raised about the fossil record. What about punctuated equilibrium? the Cambrian explosion? adaptive radiation?

Recently the concept of common ancestry has received a strong piece of supportive evidence from applications of molecular biology to a wide variety of life forms. The evidence has come from studies of the genetic code in the human genome project. Among the significant results from the human genome work it was discovered that all humans worldwide are 99.9 percent identical at the DNA level. Population geneticists con-

clude that all members of the human species descended from a common set of 10,000 initiators some 100,000 to 150,000 years ago. Furthermore, genome study of other organisms gives support for the idea that all life—humans and all other living things—share a common ancestor.

Question: Are the laws of nature such that biological evolution is limited to small changes in species? Or is it possible that gradual increases in biological complexity can result in the formation of complicated parts of an organism or even a new species? Examples have been observed where living organisms show the ability to self-organize, and there are biological examples where genetic evidence indicates that complexity has developed in an organism. The development of the cosmos and formation of the Earth is understood on the basis of natural processes accounted for by physics, chemistry, and geology. There is no evidence so far that biological development from simple to complex structures or even new structures that self-organize cannot be also understood in terms of natural processes.

The following are a sample of questions that have been posed regarding the scientific status of evolutionary theory, along with brief responses.

(1) *Does thermodynamics invalidate evolutionary thought?* The second law of thermodynamics states that in a closed system disorder always increases or under ideal conditions stays the same. This is true. But the Earth is not a closed system since it receives energy from the sun. This results in the possibility of life and the development of more and more complex life on Earth. We Earth-dwellers are fortunate because of this.

(2) *Does the “Cambrian explosion” pose a challenge to evolution?* No. The Cambrian explosion—that is, the “sudden” appearance of animal life about 545 million years ago, including many of the major body plans (called *phyla*)—occurred over the rather short evolutionary time of 20 million years, maybe a bit less. But this time span is not too short for the process of evolution. The causes of the Cambrian explosion remain a topic of investigation and discussion.

(3) *Can evolution account for the complexity of life on Earth?* Yes, this is possible. The key idea is self-organization and is understood in terms of a fairly recent development in the physics of thermodynamics, that of non-equilibrium thermodynamics. The question of how complex biological structures could be the result of natural processes has been investigated, and the assembly or development of several such structures can be understood in terms of these scientific principles.

(4) *Are evolutionary processes random and blind, so that humanity is simply a lucky outcome?* A case can now be made that evolution is a process that leads to a defined result, that evolution is convergent, and that the development of sentient

creative life was inevitable. Christian evolutionary biologists refer to this as evolutionary creation. Hence, contrary to certain atheistic biologists, other biologists maintain that evolution is not to be associated with blind random chance.

(5) *But isn't the origin of life highly improbable?* Yes. The development of the first life on Earth is and was highly improbable, and scientists still cannot satisfactorily account for its beginning. Christians will rightly say that God created the first life and, in fact, all life. And God through Christ continues to

actively uphold the universe. For the Christian who accepts evolutionary science, the implication is that God has been and continues to be involved in the entire process of evolution. But the issue here is that scientists want to account for the first life in terms of science, and that has as yet not been accomplished.

To be sure, there is more work to be done. Yet almost all biological scientists find the evidence in support of the contemporary scientific theory of evolution quite compelling. Perhaps the most convincing piece of evidence comes from biochemis-

Karl Giberson

Evolution and Christian Belief: Where to Begin? A Tale of Three Congregations

KARL GIBERSON has published hundreds of articles and reviews on science and religion in venues such as the *New York Times*, the *Guardian*, *USA Today*, *CNN.com*, *salon.com*, and *Inside Higher Ed*. He is a popular lecturer at institutions around the world, including the Vatican, Oxford University, University of Colorado, the Venice Institute, London's Thomas More Institute, and MIT. He is the author or coauthor of nine books on science and religion, including *The Anointed: Evangelical Truth in a Secular Age* (Harvard University Press). Giberson teaches both writing and science and religion in the Cornerstone Program at Stonehill College, in Easton, Massachusetts.

The most sobering parts of the new poll, however, are the sharp changes over the past two years. The naturalistic position actually declined from 16% to 15%, only the second decline in 30 years. But the theistic evolution position declined dramatically from 38% to 32% and the creationist position increased from 40% to 46%, just 1% below its all-time high.

There are more people in the creationist camp today than in 1982, despite the overwhelming mountain of evidence for evolution that has accumulated since then. The mapping and comparison of genomes, the discovery of elegant transitional forms like *ambulocetus*, and the work in evolutionary psychology and group selection have all fallen on deaf ears. The library of books published refuting creationism appears to have accomplished nothing. Even more alarming is the decline in those affirming theistic evolution. With so many prominent Christian thinkers—such as Francis Collins, Alister McGrath, John Polkinghorne, and Nancey Murphy—making the case for theistic evolution, one might have expected a modest increase in those numbers. The BioLogos project (biologos.org) has spent millions of dollars spreading the message of theistic evolution to evangelicals over the past two years, yet things have gone in the wrong direction.

National polls, of course, wash out meaningful variations and there are certainly exceptions to this discouraging trend. Over the past year I have spoken at many churches involved in a creative “Scientists in Congregations” project funded by the Templeton Foundation. Christians at First Lutheran in Lincoln, Nebraska, Fort Collins Presbyterian in Colorado, and Dawson Baptist in Birmingham, Alabama, are all quite comfortable engaging contemporary science within the

try, for here these scientists find evidence for confirmation of the picture that emerged from Darwin’s work and developed for a century and a half before the work on the genome. In a sense these scientists say that they could hardly ask for a more convincing test and striking confirmation of a scientific theory. Virtually all scientists conduct evolutionary-related research within the contemporary scientific evolutionary paradigm. This is true whether they are Christians—followers of Jesus—or non-Christians. Evolutionary theory is the starting point for

framework of the Christian tradition. They do so, however, under the leadership of uncommonly courageous pastors, in unusually well-educated congregations, and in financially strong churches that can afford to lose a few disgruntled members.

For another perspective, I tried without success for years to get evolution into the conversation at the Wollaston Church of the Nazarene, Quincy, Massachusetts, where my family worshipped for many years while I taught at Eastern Nazarene College. As the church of a college where the faculty all accepted evolution and many were highly critical of creationism, the issue was not orthodoxy but politics. Evolution stayed off the table to avoid offending a minority in the congregation who held to a strictly literal reading of the Bible. However, creationism was allowed to creep onto the table, or at least into the youth Sunday School, where it drove one of my children out of the church altogether.

Similar political concerns haunted my tenure at Eastern Nazarene College, where administrators had to deal with continual assaults from creationists who thought they knew better than the faculty how to think about science and Scripture. Such controversies—far from uncommon at evangelical schools—insured that educating evangelical youth about evolution could only be done at a price. Sometimes that price was the withholding of financial support or the active discouragement of young people from attending the college. On one occasion, the head of the religion department, weary of his own battles, counseled me that I need not emphasize in my classes that the Earth is billions of years old since “the Church of the Nazarene does not have a position on that,” and talking about it just upsets people. Dumbfounded, I pointed out to him that “science certainly has a position on the age of the Earth.”

We launched the Scientists in Congregations project seeking an ambitious—and ultimately ill-fated—collaboration between St. Chrysostom’s Episcopal Church and a nearby

all, for at this time there is no other scientific game in town that challenges evolution.

Christians and Evolutionary Science

So, how does this leave the Christian believer in terms of relating evolutionary science to Christian faith? Can there be peace? Let me suggest a modest peace plan.

- Science and its spokespeople, speaking for science, should stick to science and not claim that evolutionary science

ethnic congregation. Initial explorations with the leadership of the ethnic congregation were sobering: science was of limited interest and, for many, did not hold a position of respect. Clearly, their interests and concerns lay elsewhere. Getting science-and-religion conversations started in such communities does not seem possible at the moment. The situation at the Episcopal church was quite the reverse. The respect for science was so great that, for many parishioners, biblical and theological claims sat precariously on a chopping block, to be discarded whenever science gives the word.

America, as we know, is a religious marketplace, with literally thousands of choices for spiritual consumers. Many of those options—the majority under the evangelical umbrella—fall in the young earth creationist camp and can only be described as anti-science. Almost half of all Americans and most evangelicals think the Earth is ten thousand years old. Those struggling to come to terms with modern science—like the Church of the Nazarene and other theologically moderate traditions—operate in a tense and divisive environment where even the age of the Earth is a topic to be avoided. Biologist Richard Colling lost his job at Olivet Nazarene University for writing a rather tame book endorsing evolution. In the 1990s, physicist Howard Van Til lost his job at Calvin College—hardly a bastion of fundamentalism—after the publication of his book about the big bang. Old Testament scholars Pete Enns and Bruce Waltke both left their respective seminaries in the context of related controversies within the past five years. These scholars ended up in more congenial religious communities that had far less need of their prophetic voices.

The polarizing tendencies of this trajectory are obvious. If scientifically informed voices are ejected from our conservative religious communities, those communities will become even more intellectually impoverished. I suspect this is behind the bad news in the latest Gallup poll on origins. Clearly, we need new strategies for engaging churches in conversation about science and Scripture.



America’s conversation about evolution grows ever more discouraging. Eleven times since 1982—most recently in 2012—Gallup has asked Americans to pick one of the following views on origins:

- (1) God created humans in their present form.
- (2) Humans evolved with God guiding.

(3) Humans evolved but God had no part in the process.

The results have been remarkably consistent. The first view, closely associated with young earth creationism, has claimed the allegiance of between 40% and 47% of Americans over the past 30 years. The second view, known most commonly as theistic evolution, has ranged between 40% and 32%. And the final view, which has no simple label but is closely aligned with purely naturalistic views of origins, has increased quite steadily from 9% in 1982 to 15% today.



Does Paul's Christ Require a Historical Adam?

DANIEL KIRK is associate professor of New Testament at Fuller Theological Seminary's Northern California campus. He is the author of *Jesus Have I Loved, but Paul? A Narrative Approach to the Problem of Pauline Christianity* (Baker Academic) as well as *Unlocking Romans: Resurrection and the Justification of God* (Eerdmans). His current research project is an exploration of early Jewish Adam Christology and its significance for reading the Synoptic Gospels.

The Christian tradition has made much of Adam. We in the Western church speak regularly of the Fall of humanity that took place in Adam's primal disobedience. Theologically, we speak of inherited sin and guilt—an original sin that renders us all complicit. We are guilty of humanity's first great act of disobedience and enslaved to sin's power.

Such theological claims derive more from our reading of Paul's reflections on Adam than from the Genesis story itself. For many, the most significant theological reasons for affirming a historical Adam have to do, not with what Genesis 1–3 may or may not teach about human origins, but with the theology of Adam that Paul articulates in Romans 5 and 1 Corinthians 15. In short, if there is no historical Adam with whom we are enmeshed in the guilt and power of sin, how can we affirm that in Christ we participate in the justification and freedom of grace?

The levels of freedom (or lack thereof) that many of us experience with regard to the question of Adam as a historical person is inseparable from the theology that we see bound up with him. For some, to reject Adam as a historical person is to reject the authority of Scripture and trustworthiness of the very passages within which we learn of justification and resurrection.¹ Others are concerned that to deny a historical Adam is to deny the narrative of a good world gone wrong that serves as the very basis for the good news of Jesus Christ. In short, if there is no Fall, there can be no salvation from it and restoration to what was and/or might have been.² Even more expansively, Douglas Farrow concludes that "there is

very little of importance in Christian theology, hence also in doxology and practice, that is *not* at stake in the question of whether or not we allow a historical dimension to the Fall."³ High stakes, indeed. But I want to suggest that things might not be so dire. Specifically, I want to open up the conversation to the possibility that the gospel does not, in fact, depend on a historical Adam or historical Fall in large part because what Paul says about Adam stems from his prior conviction about the saving work of Christ. The theological points Paul wishes to make concern the saving work of the resurrected Christ and the means by which he makes them is the shared cultural and religious framework of his first-century Jewish context.

Christ and Adam

Paul has an important story to tell. It is the story of God's new creation breaking into the world through the surprising mechanism of a crucified and resurrected Christ. This conviction about the new creation being brought about by Christ provides Paul with the ground to stand on as he draws Adam into the conversation in Romans 5 and 1 Corinthians 15.

One crucial dynamic of Paul's Adam Christology is *representation*. Christ does, is, and becomes, what we need to participate in, be, and become in order to be God's eternal family. For this reason, Paul takes hold of the "image of God" language with which we are so familiar from Genesis 1, and uses it to describe Jesus as he stands in relation to us: "he decided in advance that they would be conformed to the *image* of his Son."⁴ Christ represents who we are, and who we are becoming, as members of God's new-creation family.

This representation is focused on two particular aspects of Christ's saving work: his death on the cross and his resurrection from the dead. Romans 5 develops Paul's Adam Christology around Christ's death. Throughout the latter half of Romans 5, Paul outlines how Christ's act entails benefits for many: it brings about God's gracious gift in a manner that more than undoes the work of Adam, even reclaiming humanity's privilege of ruling the world for God (5:15–17; cf. Genesis 1:26).

demonstrates that God does not exist.

- Scientists must do competent and honest science.
- Christians must also be honest—and those with experience in science must honestly evaluate scientific evidence.
- Christians should do competent Bible study—carefully considering what the creation passages in the Bible teach, what they taught the ancient original hearers/readers, and what they mean for us today. This will require careful and thoughtful study.

Science done properly is agnostic regarding meta-science. Its methods are naturalistic—that is, science asks *how* in terms of laboratory investigations. Its data are numbers and diagrams. It cannot address the *why* questions of theology. Science is a limited enterprise. The science that has been discussed in this essay implies nothing in terms of purpose or whether there is evidence for or against the existence of God. There is nothing anti-God or anti-Christian about evolutionary *science*. Such questions are not the purview or interest of science.

Is evolution consistent with Christian thought as found in Genesis, particularly the first creation account in Genesis 1:1–2:3? This is a legitimate question. Genesis 1 sets forth a six-day creation event. Each creation event is an instantaneous creation, in contrast with the scientific picture of development over billions of years. Genesis 2 contains a second narrative of creation and relates a one-day creation. How do we reconcile the two biblical creation narratives with contemporary science? Should we adjust science to conform to what we read in Genesis? If so, which account in Genesis? Or can we think of faithfully reading Genesis 1 and 2 in a way that does not require the scientific data of these creation accounts to conform to twenty-first-century science? Perhaps we could look for some meaning in these creation accounts that does not center on science as science, and in particular try to understand Genesis as the original author intended his readers (hearers) to understand his message in their ancient Near East context. The usefulness of the cosmological, geological, and biological data discussed in this essay may simply be to put some interpretive fences around the creation accounts in Genesis. I maintain that these Genesis creation accounts are *true* and as 2 Timothy 3:16 states, are intended to teach us what is true. But what is true for us as twenty-first-century readers may not necessarily be the ancient science in the accounts, but something much more important—the worldview of the ancient Hebrews. If that was the intent of the sacred biblical author, then there is *no* conflict between contemporary science and our Bible. God indeed created, but Genesis 1 and 2 may not exist for the purpose of a science lesson, but rather for a much more important purpose. Genesis tells us of a people God set aside to bless all nations, and through the creation accounts we learn of the basic out-

look this people had because of their relationship to God. The bottom line is that the Bible is true, but we need to carefully read Genesis from the viewpoint of its ancient Near Eastern context and then ask how this might be appropriated within our own context.

What should we tell our children about dinosaurs? We must tell them the truth. It is our responsibility to do our best to determine what that truth is. We *must not* set up our children for confusion and disillusionment when they hear the scientific story from high school teachers and college professors. I have told my children that it is highly likely that dinosaurs lived on our Earth millions of years ago, went extinct over 60 million years ago, and are a wonderful part of God's marvelous creation. **TNN**

For Further Reading

This essay deals with a number of complicated topics in a far too limited way. However, there are ample resources for further reading. The following is a sample of worthwhile books by Christian authors who are active professionally in the bio, geo, and physical sciences.

Francis Collins, *The Language of God: A Scientist Presents Evidence for Belief* (New York: Free Press, 2006). Collins, a research geneticist and head of the Human Genome Project, finds no conflict between rigorous science and belief in God, and presents a synthesis of scientific and spiritual worldviews.

Darrel R. Falk, *Coming to Peace with Science: Bridging the Worlds between Faith and Biology* (Downers Grove, IL: InterVarsity Press, 2004). Falk, a biology professor, makes the case that the harmonization of contemporary physical and biological science and the fundamentals of Christian faith is completely reasonable. He wants to construct a bridge between the two.

Deborah B. Haarsma and Loren D. Haarsma, *Origins: Christian Perspectives on Creation, Evolution, and Intelligent Design* (2nd ed.; Grand Rapids: Faith Alive, 2011). The Haarsmas, a cosmologist and a physicist, respectively, focus on areas where Christians both agree and disagree on topics related to origins. They present strengths and weaknesses related to areas of disagreement.

Denis O. Lamoureux, *I Love Jesus and I Accept Evolution* (Eugene, OR: Wipf & Stock, 2009). Lamoureux writes as a theologian and a biologist, maintaining that the God of the Bible created the universe through evolution. He includes his personal story of coming to terms with evolution and Christianity.

Keith B. Miller, ed., *Perspectives on an Evolving Creation* (Grand Rapids: Eerdmans, 2003). Miller, a geologist and paleoecologist, has collected a series of essays providing scholarly evaluations of evolutionary theory by a wide range of experts in the evangelical Christian community.

Simon Conway Morris, *Life's Solution: Inevitable Humans in a Lonely Universe* (Cambridge: Cambridge University Press, 2003). Morris, a professor of paleobiology, concludes that evolution is a process that leads to a defined result rather than evolution resulting in products of random blind chance, and that the development of sentient creative beings (i.e., humans) was inevitable. He calls this process evolutionary creation.

David L. Wilcox, *God and Evolution: A Faith-Based Understanding* (Valley Forge, PA: Judson, 2004). Wilcox, a biology professor, offers a perspective on Christian faith that does not ignore facts or compromise scientific integrity, and suggests that the contentious debate over evolution is a result of a failure to honor the respective boundaries of science and of theology.

Similar dynamics unfurl in 1 Corinthians 15, where Adam is viewed as the progenitor of death in contrast to Christ who, as God's new representative human being, anticipates humanity's coming resurrection life (15:21–22). A new humanity has been inaugurated by the resurrected Christ.

This theological framework positions us to step into Paul's statements about Adam. Paul is working with the stories of Israel, as told in the Old Testament, but from the perspective of someone who knows, now, that God's great act of salvation has come in Christ.

Christ, the Law, and History

This brings us to our central question: To what extent do we need to affirm a historical Adam in order also to affirm the saving dynamics of Paul's Adam Christology?

Romans 5 presents us with what are arguably the most pressing reasons to affirm a historical Adam. There we find these striking words from Paul:

- Sin entered the world through one person (5:12).
- Many people died through what one person did wrong (5:15).
- The judgment that came through one person's sin led to punishment (5:16).
- Death ruled because of one person's failure (5:17).
- Judgment fell on everyone through the failure of one person (5:18).
- Many people were made sinners through the disobedience of one person (5:19).

Paul is clearly appealing to both the common experience of enslavement to sin and death and the normative narratives of Israel regarding Adam to explain the reality that Christ overcomes. Moreover, the consistent point of comparison is that one person, Adam, represents the rest of humanity in coming under the guilt, the power, or the condemnation of sin.

One of the first questions worth confronting is whether this passage allows for various understandings of *how* Adam might represent humanity. Thus, for example, might there be room here, not for a physical, natural progenitor of all subsequent human beings, but for a person who was chosen by God from a developing or, at any rate, numerically numerous, human race to play the role of representative in obedience and disobedience?

But the question that will clamor for the attention of many is whether such a moment in which sin's guilt and power are unleashed as the lords of humanity is required at all. There seems to have been death in this world millions of years before human beings came on the scene. Is it possible to affirm the point Paul wishes to make—that God's grace, righteous-

ness, and life abound to the many because of Christ—without simultaneously affirming the assumptions with which he illustrated these things to be true?

Writing to the Romans, Paul wished to argue that God's people are found in Christ, and thereby cut off other possible ways of construing idealized human identity and what salvation and the people of God might look like. In claiming that Christ is (un)like Adam, Paul was simultaneously taking other options off the table. What difference might it make to our discussions about a historical Adam that Paul was claiming, "Christ, is (un)like Adam, therefore God's people are not demarcated by Torah"? This latter statement is, in fact, the point of Paul's argument in Romans 5 (cf. 5:12–14, 20–21). Paul's Adam theology is an avenue toward affirming that God has one worldwide people; therefore, the specially blessed people are not defined by the story of circumcision. But he does not ask the question of whether an evolutionary account of human origins might stand within the story of God's new creation work in Christ, and his argument is not aimed at denying such an explanation of where we came from.

Retelling the Story of Origins

When the ancients told stories of human origins, it was never simply to tell people "what happened." Instead, such narratives indicate why their particular people and their particular god played the roles of sovereigns of the world. Genesis 1 is an introduction to the covenant story of Israel, in which God promises to make fruitful Abraham, Isaac, and Jacob and also multiply them (17:6; 28:3; 35:11; 47:27; 48:4). The story of Adam in Genesis is written with the latter story of Israel in mind, so that the reader can see that Israel is destined to fulfill God's primordial promise of not only filling the Earth but also ruling over it (cf. 17:6).

Similarly, Paul employs the story of Adam based on his new understanding that Christ is the man through whom God has chosen to rule the world and that the churches are the people who are the fulfillment of the promise of numerous descendants. For neither Paul nor the writer of Genesis does the story of Adam exist as a standalone narrative to which later history must correspond. Instead, the convictions about what God has done at a later point in history determine how the Adam story is read.

New Testament scholarship over the past half century has developed the insight that the first data point in Paul's Christian theologizing was his understanding that the cross and resurrection formed the saving act of God. In the 1960s, Herman Ridderbos argued that this fundamental conviction becomes the great act of God by which all other acts and ideas are understood.⁵ The significance of this focus on Christ is

that it ripples out in all directions: not only does Paul rethink the future in light of Jesus' death and resurrection, but he also reinterprets what came before. Thus, Ridderbos concludes that "Paul's whole doctrine of the world and man in sin . . . is only to be perceived in the light of his insight into the all-important redemptive event in Christ."⁶ A decade later E. P. Sanders concurred, claiming that Paul reasons "from solution to plight."⁷ Because Paul knows that God has provided the solution to the problem of human sin in the crucified and risen Christ, he therefore reassesses the place of the Law, in particular, in God's saving story. Romans 5 is one particular outworking of this.

Both Ridderbos and Sanders have come to the same conclusion: what is a "given" for Paul is the saving event of Jesus' death and resurrection. The other things he says, especially about sin, the Law, and eschatology, are reinterpretations that grow from the fundamental reality of the Christ event. Recognizing this relieves the pressure that sometimes builds up around a historical Adam. Contrary to the fears expressed by Douglas Farrow, we can now recognize that Adam is not the foundation on which the system of Christian faith and life is built, such that removing him means that the whole edifice comes crashing down. Instead, the Adam of the past is one spire in a large edifice whose foundation is Christ. The gospel need not be compromised if we find ourselves having to part ways with Paul's assumption that there is a historical Adam, because we share Paul's fundamental conviction that the crucified messiah is the resurrected Lord over all.

Where, then, are we left, if the pressures of scientific inquiry lead us to take down the spire of a literal, historical Adam? What might it look like for us to faithfully receive Paul's testimony not merely by saying what he said, but by doing what he did? Might it be possible that we could retell the stories of both Adam and evolutionary sciences such that they continued to reflect our conviction that the endpoint of God's great story is nothing else than new creation in the crucified and risen Christ? For many, the cognitive dissonance between the sciences and a historical Adam has already become too great to continue holding both.⁸ We therefore have to carefully determine whether the cause of Christ, and of truth, is better served by indicating that a choice must be made between the two, or by retelling the narrative about the origins of humanity as we now understand it in light of the death and resurrection of Christ.

The task of reimagining a Christian story of origins for our modern era has already begun.⁹ As it continues, faithful articulation of our story will have to attempt to hold together for our day what Paul's articulation held together so beautifully for his own: humanity as a whole, not one particular

race or ethnicity or nationality of people, is the purview of God's saving work in Christ; humanity's final destiny has been determined by the advent of the new creation in Christ's resurrection; and this solution in Christ indicates that the problem to be solved entails not only personal estrangement from God, but a whole world that fails to live up to the harmony, peace, fruitfulness, life, and eternity of the God who created it. Perhaps most importantly, we must not allow biology or physics or chemistry to have the last word about the destiny of humanity. The reality of our lives as creatures limited by death and decay must stand in subordinate relationship to the eschatological reality of new creation that God has granted us in Christ.

To accompany Paul on the task of telling the story of the beginning in light of Christ, while parting ways with his first-century understanding of science and history, is not to abandon the Christian faith in favor of science. Instead, it demands a fresh act of faith in which we continue to hold fast to the truth that has always defined Christianity: the crucified Messiah is the resurrected Lord over all. Belief in Christ's resurrection was a stumbling block for the ancients, and it is a stumbling block for us moderns as well—and increasingly so as we learn more about our human story and the biological processes entailed in life on this Earth. We do not give up on the central article of Christian faith when we use it to tell a renewed story of where we came from. On the contrary, we thereby give it the honor which is its due. TNN

Endnotes

1. E.g., A. B. Caneday, "The Language of God and Adam's Genesis and Historicity in Paul's Gospel," *Southern Baptist Journal of Theology* 15 (2011): 26–59.
2. E.g., C. John Collins, *Did Adam and Eve Really Exist? Who They Were and Why You Should Care* (Wheaton: Crossway, 2011), 133–35; John W. Mahoney, "Why an Historical Adam Matters for the Doctrine of Original Sin," *Southern Baptist Journal of Theology* 15 (2011): 60–78; Stephen J. Wellum, "Editorial: Debating the Historicity of Adam: Does It Matter?" *Southern Baptist Journal of Theology* 15 (2011): 2–3.
3. Douglas Farrow, "Fall," in *The Oxford Companion to Christian Thought* (ed. A. Hastings, A. Mason, and H. S. Pypers; New York: Oxford University Press, 2000), 233–34.
4. All scriptural citations are from the Common English Bible unless otherwise indicated.
5. Herman Ridderbos, *Paul: An Outline of His Theology* (Grand Rapids: Eerdmans, 1975), 44–90.
6. Ridderbos, *Paul*, 137.
7. E. P. Sanders, *Paul and Palestinian Judaism* (Minneapolis: Fortress, 1977), 474–508.
8. See, e.g., John R. Schneider, "Recent Genetic Science and Christian Theology on Human Origins: An 'Aesthetic Superlapsarianism,'" *Perspectives on Science and Christian Faith* 62 (2010): 196–213.
9. E.g., Daniel C. Harlow, "After Adam: Reading Adam in an Age of Evolutionary Science," *Perspectives on Science and Christian Faith* 62 (2010): 179–95.



Deborah Haarsma

Engaging Science in the Life of Your Congregation

DEBORAH HAARSMA is president of the BioLogos Foundation. Previously, she served as professor and chair in the Department of Physics and Astronomy at Calvin College in Grand Rapids, Michigan. She and Scott Hoezee commissioned essays for the volume *Delight in Creation: Scientists Share Their Work with the Church* (*The Ministry Theorem*, 2012), which includes her own essay on recent discoveries in astronomy. She wrote *Origins: Christian Perspectives on Creation, Evolution, and Intelligent Design* with her husband, Loren Haarsma (*Faith Alive*, 2011).

We have all heard stories of Christian young people who have struggled with their faith because of science. What can ministry leaders do to better prepare young people as they consider science careers? How can all God’s people develop a better appreciation of God’s revelation in nature? From 2009 to 2012, Rev. Scott Hoezee and I codirected *The Ministry Theorem*—a project at Calvin Theological Seminary to provide pastors and congregations with resources on science. Here are some successful practices I found in my encounters with many congregations.

More Than One Christian View

Many parents and pastors are wondering what to tell their children about creation and evolution. While Sunday school classes often cover Genesis 1 around kindergarten (with kids coloring pictures of what God created on each day), most curricula do not address science again before kids leave for college. Yet issues of creation and evolution can be addressed in age-appropriate ways throughout Sunday school. Elementary school children already learn about idol worship from other Old Testament stories, so teachers have an opportunity to contrast Genesis 1 with the idol-rich creation stories of other cultures. Middle school students can be given basic tools for considering creation and evolution such as the contrast between the “how” questions answered by their science lessons in school and the “who” and “why” questions answered in Scripture. Middle and high school students can find role models by reading the testimonies of scientist Christians.

Youth need to be encouraged to discuss their questions and doubts, while affirming core beliefs. When asked why they left the faith, scientists often mention that the church was not open to their questions and told them to “just be-

lieve.” Churches can demonstrate openness to questions by teaching youth about multiple Christian views on an issue. Students need to hear that some Christians accept the science of evolution and others do not, and have a conversation about the reasons why. Too many young people have struggled when they felt they had to choose between clear scientific evidence and the beliefs they grew up with. Even when parents and leaders are unsure about evolution, they can help students by saying, “While I have concerns about evolution, I’ve heard that some Christians accept the science of evolution while still believing in the God of the Bible.”

Difficult issues like origins cannot be addressed in a single event. People need time to ponder the issues, and spaces to talk it through. One church did a six-week sermon series, with parallel curricula for all ages in Sunday school, so that families could work through it together. Another church did a sermon series and discussion group for adults for four weeks, to prepare parents before a four-week series for the youth group. Other churches encourage small groups to read a book on science and faith and discuss a chapter a week. (Since all authors have their favorite view, I recommend discussing at least two books from different authors to learn about multiple Christian positions.)

More Than Evolution

In our science-saturated culture, evolution is not the only science topic the church should be considering, and not even the most important. With church members encountering the latest medical advances as patients and family members, a discussion on bioethics would be very relevant. Since young people are usually the first to use hot new gadgets, they should be considering the appropriate Christian use of technology. As the issue of climate change becomes more pressing every

year, churches need to talk about it, and not avoid it because it is so political. The Evangelical Environmental Network offers many resources for churches, emphasizing ways that creation care benefits the poor and the unborn. One group of churches, with the help of Calvin College, joined together to clean up the local creek that drains the watershed in which the parishioners live, work, and worship. Many of the congregants were not even aware of the size of the watershed or the pollution level in their own creek. This was a hands-on opportunity for all ages, directly caring for their own corner of God’s green Earth.

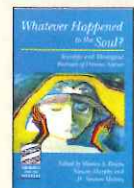
More Than Controversy

With so many issues to discuss, Christians can easily get the feeling that science is always attacking the faith. It is essential to balance such conversations with positive responses to God’s creation. After all, the primary response to the natural world in the Bible is to praise the God who made it. The first time I led an adult Sunday school class on creation and evolution, I was amazed how much the participants appreciated simply ending each session with a Psalm reading or creation hymn. Thoughtful frowns turned into relaxed smiles as the group remembered our unity in Christ and the centrality of God as the Creator.

Creation themes can be incorporated throughout worship. One church asked the congregation to submit their favorite creation photos at the end of the summer (from backyard flowers to National Parks), then wove the images into a worship service with creation songs and readings from the Psalms. In addition to flowers and mountains, modern science has revealed incredible glories that can inspire our praise and reflection. Several contemporary Christian musicians have begun to artfully incorporate the wonders of the

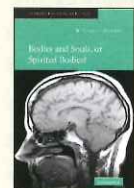
Further Reading from Fuller Faculty on the Science and Theology of the Human Person

Warren S. Brown, Nancey Murphy, and H. Newton Malony, eds.
Whatever Happened to the Soul?
(Fortress Press, 1998)



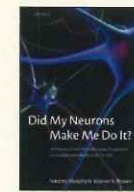
This book strives for greater consonance between contemporary science and Christian faith. Outstanding scholars in biology, genetics, neuroscience, cognitive science, philosophy, theology, biblical studies, and ethics offer accounts of human nature consistent with Christian teaching.

Nancey Murphy
Bodies and Souls, or Spirited Bodies?
(Cambridge University Press, 2006)



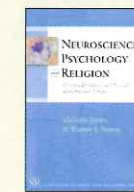
Are humans composed of a body and a nonmaterial mind or soul, or are we purely physical beings? Opinion is sharply divided over this issue. In this book, Murphy argues for a physicalist account, but one that does not diminish traditional views of humans as rational, moral, and capable of relating to God.

Nancey Murphy and Warren S. Brown
Did My Neurons Make Me Do It?
(Oxford University Press, 2007)



Murphy and Brown provide a novel contribution to the debate on free will by offering contemporary research at the intersection of philosophy and the cognitive sciences. This volume reframes longstanding philosophical problems in light of recent developments in neuroscience and related fields.

Malcolm Jeeves and Warren S. Brown
Neuroscience, Psychology, and Religion
(Templeton Foundation Press, 2009)



This volume is the second title published in the Templeton Science and Religion Series. In it, Jeeves and Brown provide an overview of the relationship between neuroscience, psychology, and religion, with the intention of providing an academically sophisticated yet accessible account for the general reader.

natural world into their music; Chris Rice sings of “cratered moon and Saturn’s rings,” and Third Day praises the “God of wonders beyond our galaxy.” In one church, an elder brought in modern science when leading the congregation in prayer with these words: “Creator God, out of nothing you created all that is. You hurled the galaxies through time and space The universe is your hourglass, the continental drift your minute hand, the Grand Canyon your second hand. You are infinite.”

Preachers can incorporate science in the same way they make references to movies, current events, or best-selling books in sermons. To notice these connections, take some time to encounter science: read the science section of the *New York Times*, visit a local science museum, or ask scientists in the congregation about their work. A visit to a planetarium might give a new appreciation for the vastness of the universe, which could illuminate a sermon on the vastness of God’s forgiveness in Psalm 103:11–12. Pastor John Van Sloten learned about the neural networks in the brain and incorporated it into a sermon on the vine and the branches of John 15.

Preachers are understandably concerned about avoiding scientific errors when preaching, but this should not prevent engagement with science. Some pastors do their own research to get the details right because they enjoy digging into a science topic. Other pastors bring in a scientist (live or by video) so that they do not have to explain the technical material themselves. Others play to their strengths by choosing topics with fewer technical details, such as the Christian motivation for doing science or exposition of Bible passages relevant for scientific questions. Many of the questions Christians have are really about biblical interpretation and Christian theology, areas where the pastor is an expert. Minor technical errors made in good faith are forgivable, but a sermon that

argues that mainstream science is wrong on some point can be devastating for the faith life of teenagers who are learning the correct science in school.

Beyond Sunday morning worship and preaching, science can show up in many areas of church life. During a youth camping trip or church picnic, include a nature walk concluded with praise. After a winter evening worship service, invite a local amateur astronomer to set up a telescope in the parking lot to show people the moon and planets. Convert a vacant lot near church into a community garden, so kids can experience firsthand how God provides food from the Earth.

More Than Programs

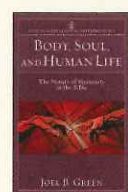
In all these activities, remember that views on science are “caught” more than “taught.” Congregants will naturally pick up on the attitude of the pastor or ministry leader, whether skeptical of science or celebrating science as the study of God’s creation. Visitors will pick up on this too, so these attitudes are part of being a church that welcomes and ministers to scientist Christians. Recently I was invited to speak at a church on the expansion of the universe and the possibility of a multiverse. Several enthusiastic young people in attendance had clearly caught the love of science from the church leaders who planned the event. One girl came up afterward with her dad, both of them marveling at God’s creation. They were amazed not just with the particular things I had discussed, but with the way in which God has embedded wonders at every level of understanding. Everyone can marvel at the starry skies, school kids can learn about the planets and asteroids, and scientists with PhDs can study dark matter and string theory. No matter how deep we look, we keep discovering more and more ways that creation declares the glory of God. **TNN**

Further Reading *(continued)*

Joel B. Green

Body, Soul, and Human Life

(Baker Academic, 2009)

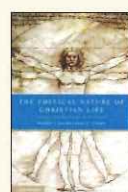


Exploring what Scripture and theology teach about issues such as being made in the divine image, the importance of community, sin, free will, salvation, and the afterlife, Green argues that a dualistic view of the human person is inconsistent with both science and Scripture.

Warren S. Brown and Brad D. Strawn

The Physical Nature of Christian Life

(Cambridge University Press, 2012)



Brown and Strawn explore the physicality of human nature through the neurosciences and psychology, beginning with a thesis that it is not antithetical to Christianity to hold that humans are essentially physical. They claim, further, that the body-soul dualism of much modern Christian thought is not properly Christian.



Joel B. Green

What Are Human Beings? Perspectives from Science and Scripture

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What does it mean to be human? This is not the sort of question that occupies much of our thinking—at least not at an explicit, conscious level. Coffee shop conversations rarely turn to such speculative questions. Nevertheless, we carry out much of our lives with implicit answers to this question. Budget discussions—whether in Washington, D.C., or in our families—often parade different views of what it means to be human. “Feed the Soul or Feed the Hungry?”—this was the headline for a report on budget negotiations in a city council,¹ but could just as easily summarize a congregation’s struggle to allocate its mission dollars. Either way, it divulges certain assumptions about humanity. Slogans sometimes capture deeply held views: “I think, therefore I am.” “She’s only human.” Some toss around the language of “unalienable rights” and “equality,” demonstrating that they have strong (even if not fully developed) views about human beings. The criteria by which we measure success or encourage happiness or contemplate health care decisions—these are all grounded in our commitments regarding what it means to be human. We may not think much about what it means to be human, but our thoughts and actions regularly put into play our default assumptions and beliefs about what this entails.

If coffeehouse conversations do not turn regularly to the nature of the human person, the same cannot be said of literature and film. In the nineteenth century, those who en-

countered Mary Shelley’s monster, that “hideous phantasm of a man,” the creation of Victor Frankenstein, might have wondered if humans were no more than the sum of their body parts, animated by a powerful electrical charge. Readers of Isaac Asimov’s *I, Robot* may recall “the three laws of robotics,” a code of ethics governing robotic behavior. Asimov goes so far as to introduce a robot that claims, “I, myself, exist, because I think,” and practices worship of the creator. The 1999 movie *Bicentennial Man*, inspired by Asimov, narrates the two-hundred-year-long quest of robot Model NDR114 (a.k.a. “Andrew,” played by Robin Williams) to be recognized as a human. His (Its?) evolutionary stages manifest creativity, curiosity, friendship, emotional responses, financial independence, ownership of property, appreciation of beauty, and finally participation in the human condition of frailty and finitude.

Among recent explorations of the nature of humanity in science fiction, my own favorite is the portrayal of Data, the android bridge officer in television’s *Star Trek: The Next Generation*. If the voyages of the Star Ship Enterprise NCC-1701-D are famous for going boldly where no one has gone before, Data’s own journey is consumed by his quest to become human. But this raises the question, What does it mean to be human? In the episode “The Measure of a Man,” Captain Picard persuades a court of law of Data’s right to self-determination. In “The Offspring,” Data engages in a form of procreation by fashioning a daughter as he maps his own neural nets onto an android body he has constructed. Later in the television series he receives an “emotion chip,” and in the movie *Star Trek: First Contact* he is (temporarily) given patches of human skin. Do these further Data on his quest to become “human”?

Considering the Natural Sciences

What does it mean to be human? Of course, questions like this are not only the stuff of film and literature. They some-

times arise unbidden and unwelcome. When Aunt Jennie loses herself in the dark, demented caverns of Alzheimer's disease, or when Little Joey is riding his bicycle, is struck by a car, and now lies in a Persistent Vegetative State, have they lost their humanity? Abortion and other beginning-of-life issues, as well as struggles to define death and other end-of-life issues press for answers to the question, What makes us human? The natural sciences also challenge us in this respect. If we are separated from chimpanzees by only a fraction of our DNA; if we recognize decision making (and, then, some sense of "free will") in animals of all sorts, from dolphins to earthworms; if we find evidence of "consciousness" among cats, dogs, and even fish; if we identify altruism among prairie dogs and schooling among meerkats, then what is it, really, that separates us from other animals? What makes us unique as humans?

From the perspective of evolutionary biology, the nature of our humanity would be understood in essential continuity with nonhuman animals and, indeed, with the nonhuman universe. At the level of molecular biology, any meaningful distinction between human beings and other animals is impossible to maintain, though this does not signal the loss of all grounds for speaking of human distinctiveness. In his book *Human Natures*, biologist Paul Ehrlich argues that human difference is the product especially of cultural evolution, which rests on the foundation of genetic evolution but has proceeded at breakneck speed when compared with the snail-pace of genetic change.² "Cultural evolution" refers to the influence of massive transformations in the body of non-genetic information that shapes our lives—information accumulated in our memories, in our institutions, in our libraries, and increasingly in "the cloud."

Research in the last two decades has underscored the degree to which our political, religious, and ethical perspectives are somatically (or bodily) based. A recent article in the journal *Nature* illustrates this well: "An increasing number of studies suggest that biology can exert a significant influence on political beliefs and behaviours. Biological factors including genes, hormone levels and neurotransmitter systems may partly shape people's attitudes on political issues such as welfare, immigration, same-sex marriage and war."³ And recent metaphor theory has demonstrated again and again the somatic basis of much of our language. Thus, for example, phrases like "She uncovered the truth" or "I'm moving on from that relationship" recruit bodily actions in relation to abstract concepts. Indeed, brain imaging has shown that when we use auditory-related words we experience increased blood flow to the areas of our brains implicated in auditory-processing, the same is true of sight-related terms or words

related to speech, and reading about someone riding a bicycle or chopping wood activates the parts of our brain implicated in those motor skills.⁴ Such examples illustrate the complex and inescapable interaction between genes and the environment, and press us to consider that what makes humans human is the degree to which our natures are underdetermined genetically and thus elastic in response to our cultural contexts.

Think about this with specific reference to our brains. When the neuroscientist Joseph LeDoux wrote, "People don't come preassembled, but are glued together by life,"⁵ he called attention to the fundamental neurobiological reality that human beings are always in the process of formation. At a basic level, formative influences are encoded in the synapses of the central nervous system, those points of communication among the cells of the brains, or neurons. Even if the organization of the brain is hardwired genetically, genes shape only the broad outline of our mental and behavioral functions, with the rest sculpted through our experiences. In other words, although our genes bias the way we think and behave, the systems responsible for much of what we do and how we do it are shaped by learning. From birth, we are in the process of becoming, and this "becoming" is encoded in our brains by means of synaptic activity. Simply put, in our first two years (and even beyond), far more synapses are generated than are needed. Those neural connections that are used are maintained and remodeled, while those that fall into disuse are eliminated. (Use it or lose it!) Fresh connections are generated in response to our experiences, even into adulthood, until the very moment of death. The longstanding nature-nurture argument (Are we products of our genes or of our upbringing?) is grounded in a false distinction, then, since nature and nurture both end up having the same outcome, namely, sculpting the brain in ways that form and reform the developing self.

Additional research in the neurosciences has had far-reaching ramifications for our understanding of what it means to be human. This research appears to be fresh and innovative, and in important respects it is, since only in recent decades have scientists been able to study the brain more directly by means of novel forms of imaging (for example, through computed tomography [CT] or positron emission tomography [PET] scans, and magnetic resonance imaging [MRI]). However, the basic insight that psychological processes depend on neural activity has a clinical base dating back at least to the seventeenth century, to the work of Thomas Willis, whose multifaceted neurological work led him to tie human desires and instincts, memory and imagination, reason and volition to the brain and central nervous system.⁶

Today, clinical work has demonstrated the neural basis of any number of qualities that we typically regard as characteristic of human beings, including moral reasoning, decision making, responsibility taking, emotions, altruism, self-identity, spirituality, memory, and more. Similarly, empirical research has demonstrated repeatedly that clinical improvements among persons suffering from depression, panic disorder, phobia, obsessive compulsive disorder (OCD), and schizophrenia are correlated with regional and/or system-wide changes in the brain.⁷ The implications of this research are important, but require careful nuance. It is one thing to say—though it certainly must be said—that these human capacities are *bodily* capacities. It is quite another to urge that, say, human creativity or human religious experience or human consciousness may thus be explained without remainder in materialist terms, as though these were nothing more than expressions of fixed neural patterns. The philosopher Timothy O'Connor has helpfully summarized:

What we know from our own subjectivity and agency, evolutionary biology, and the emerging sciences of brain and behavior point in the direction of human beings as wholly materially composed individuals—yet composed individuals of a very special, emergent kind. We are living bodies, dynamically changing parts as all bodies do, but bodies with psychological and moral (and perhaps spiritual) capacities that do not reduce to the outworkings of a vast network of impersonal physical particle interactions within the human brain.⁸

This perspective bears a strong family resemblance to the work on human nature and human capacities by Fuller Seminary professors Warren Brown and Nancey Murphy.⁹

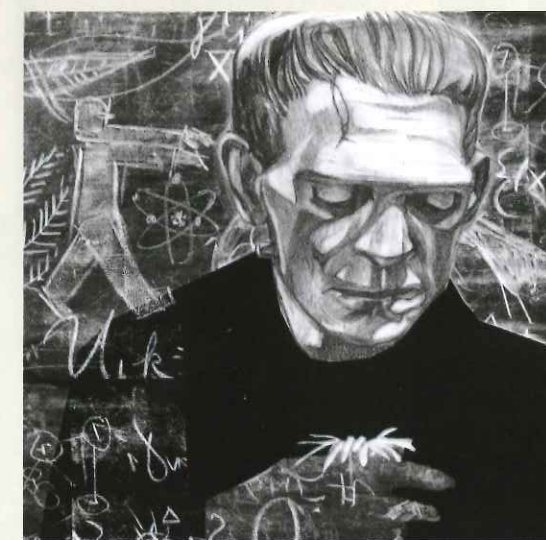
The result of these ruminations is the humbling of traditional views that tended to locate humanity in a place of incontestable honor at the center of the cosmos. This is nothing new, of course, as scientific discovery has had this affect repeatedly—first by Galileo and Copernicus, who demonstrated that our planet and, thus, we who inhabit Earth, are not the center around which the universe pivots; by Darwin and evolutionary biology, who located *homo sapiens* within the

world of animals, with a genetic make-up that strongly resembles the creatures around us; and by the neurosciences, with their tightening of the mind-brain link, endorsing the conclusion that human feelings, beliefs, thoughts, and behavior are the outcomes of the complex and creative interplay of genetic code and relational experiences.

Unsettling Questions?

For some Christians, these scientific perspectives on the human person raise unsettling questions. And it is true that a host of pressing issues are at stake in these discussions. For example:

- Is there anything about humans that our mechanical creations and innovations in Artificial Intelligence will be unable to duplicate? Similarly, if humans, like sheep, can be cloned, will the resulting life form be a "person"?

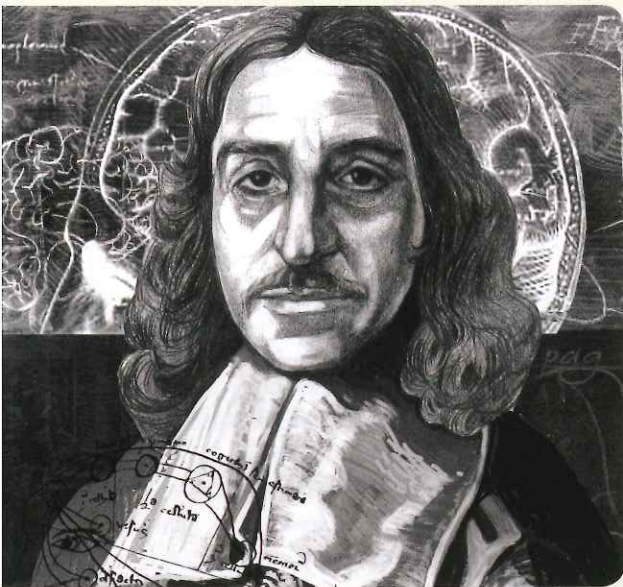


FRANKENSTEIN

In Mary Shelley's book *Frankenstein; or, The Modern Prometheus*, she imagines a creature that results from an unorthodox scientific experiment by her novel's hero, Victor Frankenstein. She says of his monster, "Frightful must it be; for supremely frightful would be the effect of any human endeavour to mock the stupendous mechanism of the Creator of the world."

- What view of the human person is capable of supporting what we want to know about ourselves theologically—about sin, for example, as well as moral responsibility, repentance, and growth in grace?
- Am I free to do what I want, or is my sense of decision-making a ruse?
- What portrait of the human person is capable of casting a canopy of sacred worth over human beings, so that we have what is necessary for discourse concerning morality and for ethical practices?
- How should we understand "salvation"? Does salvation entail a denial of the world and embodied life, focusing

- instead on my “inner person” and on the life to come?
- How ought the church to be extending itself in mission? Mission to what? The spiritual or soulish needs of persons? Society-at-large? The cosmos?
 - What view(s) of the human person is consistent with Christian belief in life-after-death?
- These *are* important questions. However, for biblical



THOMAS WILLIS
(1621–1675) was an English doctor and founding member of the Royal Society. A research pioneer in the anatomy of the brain and nervous system, his *Cerebri anatome* (1664) is an elaborate volume in which the term “neurology” first appears. Reared an Anglican, he regarded his laboratory table as a kind of altar to the God who reveals himself in Scripture and the natural world.

faith, the natural sciences have not caused the sort of ground-shift we might at first imagine. This is because the results of exploration in the natural sciences and biblical theology intersect at key points; in fact, they represent trajectories characterized less by collision and more by convergence. Interdisciplinary study—with contributions from natural science, but also from biblical studies, theological studies, ethics, and philosophy—is demonstrating that emerging scientific portraits of the human person are neither as novel as we might at first imagine, nor as threatening to Christian faith.

Scripture and the Human Person

What about the Scriptures? One looks in vain to the Old and New Testaments for speculative portraits of human nature. The question, What is humanity? does appear in Psalm 8 (cited in Hebrews 2:6–9) and Psalm 144, as well as in Job 7:17–18, however, and we find important orientation in Genesis 1–2. In these and related texts, the following per-

spectives are basic:

(1) Humans are not defined in essential but relational terms. That is, unlike the philosophical stream running from Plato to Descartes and into the present, Scripture is not concerned with defining human life with reference to its necessary “parts.” Nor does it concern itself with explaining in what we may regard as a philosophically satisfying way the nature of our physicality in life, death, and afterlife. Instead, Scripture presents the human person above all in relational terms. And it marks the human being as genuinely human and fully alive only within the family of humans brought into being by Yahweh, in relation to the God who gives life-giving breath, and in harmony with the cosmos God has made.

Interestingly, although this emphasis on relationality has sometimes been neglected in Western theological accounts of the human person, it has been front and center among theologians from other cultural contexts. Hispanic and African theologians, for example, have often developed their theological anthropologies with a focus on communality and participation, and on life as an undivided unity, with no distinctions between its “spiritual” and “material” aspects.¹⁰ Among such theologians, it is not uncommon for Descartes’s saying “I think, therefore I am” to be replaced with the Libyan proverb, “We are, therefore I am.”

(2) In addition, with respect to the rest of creation, Scripture affirms of humanity both continuity and difference. This means, on the one hand, that Christians ought not to be surprised by the claims of evolutionary biology regarding the embeddedness of humanity in the animal world. Humans are clearly *like* other living things in that they are created by God, and thus in their relation to him and in their having been formed from the stuff of the earth. Accordingly, the life and destiny of the human creature is necessarily bound up with that of all of creation (cf. Romans 8:19–23). On the other hand, humans are *unlike* nonhuman creatures in that humanity (alone) bears the divine image. This also means that humanity is defined in relation to God in terms of both similarity and difference: humanity is in some sense “like” God, but is itself not divine. Humanity thus stands in an ambivalent position—living in solidarity with the rest of the created or-

der and yet distinct from it on account of humankind’s distinguishing role as the bearer of the divine image, called to a particular and vital relationship with Yahweh and yet not divine.

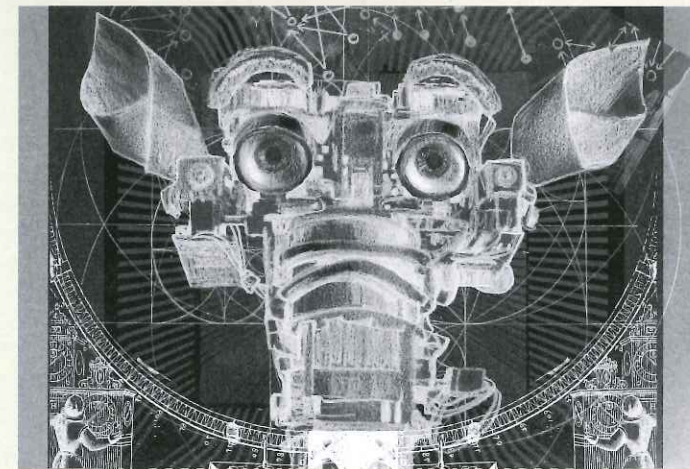
(3) Humans, then, bear the image of God. Over the centuries, this phrase, “image of God,” has been the focus of diverse interpretations among Jews and Christians—ranging widely from some physical characteristic of humans (such as standing upright) to a way of knowing (especially the human capacity to know God), and so on.

After the New Testament era, a number of early Christian writers followed the first-century Alexandrian Jew Philo in reading Genesis 1–2 against the backdrop of Platonic dualism. For him, and so for them, this meant that God first created the human soul (Genesis 1:26–27) and then placed it in a human body (Genesis 2:7). It also meant that, for Philo, the divine image was to be identified simply with the human soul. Not only is this view missing from New Testament reflection on the divine image, it is also an unsustainable reading of the text of Genesis itself. First, it is not only humans who are “soulish.” The Greek term Philo emphasized—*psychē*, sometimes translated as “soul”—is used in Genesis 1:30 with refer-

ence to the beasts of the earth, the birds of the air, and everything that creeps on the earth; like humanity, these are all characterized by *psychē*. Accordingly, it cannot be urged that “soul” distinguishes humanity from nonhuman creatures. All of God’s creatures, human and otherwise, share *nephesh* (the underlying Hebrew term), which we might think of in terms of “the breath of life.” Moreover, according to Genesis 2:7, humans do not “have” souls but are souls. This does not mean that humans are really “souls” contained in “bodies,” but rather that “soul” (or, better, *nephesh* or *psychē*) here identifies human persons in their totality. To translate the Hebrew term *nephesh* in a way that makes more sense, Adam “became a *living being*” (TNIV, NRSV). The Common English Bible is even more helpful: “The Lord God formed the human from the topsoil of the fertile land and blew life’s breath into his nostrils. The human came to *life*.” Like other living crea-

tures, then, humans are characterized by their “vitality,” their divine-given life.

If “divine image” is not another way of saying “soul,” what is it? Recent scholarship has developed the ancient near eastern background of the concept of “image” in ways that lead us to conclude that it designated a ruler tasked with service as God’s special, earthly envoy. Genesis thus identifies humanity as God’s representatives, a view that coheres with what we read otherwise in Genesis 1–2 about humans in relationship to creation. In short, (A) we cannot identify God’s image with the soul, (B) the divine image distinguishes humanity in relation to the rest of creation, and (C) God’s image is relationally and vocationally defined. It does not identify a certain essence or part of a person, but rather refers to a way to be and a call on human life in relation to God, the human family, and the whole cosmos. The distinguishing mark of *human* existence when compared with other creatures is thus the whole of human life (and not some “element” or “portion” of the individual). Humanity is given the divine mandate to reflect God’s own covenant love in relation with God, within the covenant community of all humanity, and with all that God has created.



ARTIFICIAL INTELLIGENCE
Kismet was a robot designed in the late 1990s at MIT by Dr. Cynthia Breazeal, a pioneer of social robotics and human robot interaction. Artificial intelligence (AI) is the science and engineering of making intelligent machines.

(4) Scripture affirms the human being as a biopsychospiritual unity. Again, Scripture does not locate this singularity in the human possession of a “soul.” Within the Old Testament, the term sometimes translated as “soul” (*nephesh*) refers to life and vitality—not a thing to have but a way to be. To speak of loving God with all of one’s “soul” (Deuteronomy 6:5), then, is to elevate the intensity of involvement of the entirety of one’s being.

Not surprisingly, then, salvation, as this is represented in the Gospels, must be understood in ways that account for the totality of human life, including the return of Israel from exile, the rescue of persons from demonization, the restoration of persons within their social and religious communities, the healing of the afflicted, the embrace of persons within God's mercy, membership within the community of God's people, and more. Consider, for example, the Gerasene demoniac. Luke's account has it that, prior to his encounter with Jesus, the man is homeless, naked, and lacking human identity, religiously unclean, living among the dead, demonized, uncontrollable, engaged in self-harm; after his encounter with Jesus, the man is fully clothed, restored to mental health, liberated from demons, portrayed as a disciple, sent back to his home and community, and given a vocation to tell others what God had done for him (Luke 8:26–39). Here and throughout, the Gospels concern themselves with *human* recovery in ways that cannot be parsed into spiritual or social or biological needs. There is only human need.

Conclusion

Why is it important to reflect on what it means to be human? I have already drawn attention to the significant degree to which our thoughts and actions as churches and for the common good put on display our default assumptions about what it means to be human. Accordingly, it only makes sense to bring those assumptions out of the shadows and into the light of day, to test them for their faithfulness to what God has revealed in nature and through Scripture. The natural sciences may press us to articulate along fresh lines our understanding of the human person, and this may not be a bad thing. This is because of the important ways in which the natural sciences might lead us to reconsider what we imprudently assumed the Scriptures say (or must say) about our common humanity. Fresh emphases on our relation to the world we inhabit, on the importance of human community, on our ongoing (trans)formation within community, and on human wholeness—these are emphases from the natural sciences that are only to be welcomed by those committed to biblical faith.

In terms of the church's mission, we should also consider the power of diagnosis. How we construe human liberation and recovery—salvation—depends a great deal on how we identify the human problem. According to the perspectives sketched here, we must think in wholistic ways about the reach of God's good news. We simply must not reduce Christian mission to "saving souls" when this is taken as anything other than "human recovery"—and even then, the context and reach of "human recovery" must account for the nesting

of human beings in congregations of faithful disciples, within the human family, and in relation to the whole of God's good creation. Premium must be placed on the health and integrity of human community, Christian discipleship must be understood in terms of fully embodied life, and such Christian practices as pastoral care, preaching, discipling, and spiritual formation must be cast so as to account for persons as biopsychospiritual unities. **TNN**

Endnotes

1. Rich Copley, "Feed the Soul or Feed the Hungry?" *Lexington Herald Leader*, June 16, 2002, D1, 5 (1).
2. See, e.g., Paul R. Ehrlich, *Human Natures: Genes, Cultures, and the Human Prospect* (New York: Penguin, 2002).
3. Lizzie Buchen, "Biology and Ideology: The Anatomy of Politics," *Nature* 490, no. 7421 (2012): 466–68 (466); available online: <http://www.nature.com/news/biology-and-ideology-the-anatomy-of-politics-1.11645>.
4. Cf. Michael J. Posner and Marcus E. Raichle, *Images of Mind* (New York: W.H. Freeman, 1997), 115; Jerome A. Feldman, *From Molecule to Metaphor: A Neural Theory of Language* (Cambridge, MA: The MIT Press, 2006).
5. Joseph LeDoux, *Synaptic Self: How Our Brains Become Who We Are* (New York: Viking Penguin, 2002), 3.
6. Thomas Willis, *The Anatomy of the Brain and Nerves* (ed. William Feindel; trans. Samuel Pordage; The Classics of Medicine Library; Birmingham: McGill-Queens University Press, 1978 [1681]). See Carl Zimmer, *Soul Made Flesh: The Discovery of the Brain and How It Changed the World* (New York: Free Press, 2004).
7. The evidence for these claims is ubiquitous in the literature. For points of entry, see, for example, Malcolm Jeeves and Warren S. Brown, *Neuroscience, Psychology, and Religion: Illusions, Delusions, and Realities about Human Nature* (West Conshohocken, PA: Templeton Foundation Press, 2009); Veena Kumari, "Do Psychotherapies Produce Neurobiological Effects?" *Acta Neuropsychiatrica* 18 (2006): 61–70; Malcolm A. Jeeves, ed., *From Cells to Souls: Changing Portraits of Human Nature* (Grand Rapids: Eerdmans, 2004); Anne L. C. Runehow, *Sacred or Neural? The Potential of Neuroscience to Explain Religious Experience* (Religion, Theologie und Naturwissenschaft 9; Göttingen: Vandenhoeck & Ruprecht, 2007).
8. Tim O'Connor, "Do We Have Souls?" on Big Questions Online website, January 8, 2013, https://www.bigquestionsonline.com/content/do-we-have-souls?utm_medium=email&utm_source=newsletter&utm_campaign=new_essay_180.
9. See, for example, Warren S. Brown, Nancy C. Murphy, and H. Newton Maloney, eds., *Whatever Happened to the Soul? Scientific and Theological Portraits of Human Nature* (Theology and the Sciences; Minneapolis: Fortress, 1998); Nancy Murphy, *Bodies and Souls, or Spirited Bodies?* (Current Issues in Theology; Cambridge: Cambridge University Press, 2006); Nancy Murphy and Warren S. Brown, *Did My Neurons Make Me Do It? Philosophical and Neurobiological Perspectives on Moral Responsibility and Free Will* (Oxford: Oxford University Press, 2007).
10. See, for example, Joe M. Kapolyo, *The Human Condition: Christian Perspectives through African Eyes* (Downers Grove, IL: InterVarsity Press, 2005); Ismael Garcia, *Dignidad: Ethics through Hispanic Eyes* (Nashville: Abingdon, 1997).
11. See, for example, J. Richard Middleton, *The Liberating Image: The Imago Dei in Genesis 1* (Grand Rapids: Brazos, 2005).

FULLER NEWS & NOTES

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Justin L. Barrett

Dare to Thrive

Thrive Chair Installation Address: October 2012



JUSTIN L. BARRETT joined the School of Psychology in 2011 as the Thrive Professor of Developmental Science and director of the Thrive Center for Human Development. He is author of *Born Believers: The Science of Children's Religious Belief (2012)*, and the forthcoming *Cognitive Science, Religion, and Theology*.

I AM GRATEFUL to be at Fuller and to be the inaugural Thrive Professor, but I must confess that in my one year at Fuller, I have found my title to be a curse in some ways. Countless times I've been asked what "Thrive" stands for—this is an academic institution so surely it is some painfully strained acronym, no? And I've also been asked repeatedly, "So Thrive Professor, are you thriving?" We're friends here so I'll be frank: I have not always been sure how to answer whether or not I am thriving personally, because I haven't been confident that I know what it means to thrive. Being the Thrive Professor has forced me to begin thinking more carefully about what it means to thrive.

Kaiser Permanente seems to think thriving and health are related: Does thriving just mean to be healthy? I don't think so. My grandfather—now 90 years old—has been spending the bulk of the last twenty years sitting on his porch waiting for the mail to arrive, whistling, maybe watching some baseball on television, napping, and occasionally washing dishes. His doctor will tell you he's been perfectly healthy. But he's not thriving. No, thriving isn't just being healthy.

If you do an image search for "thrive" you will find pictures of lots of plants. I imagine it is because we think of thriving as related to growth. So, somehow growing plants represent thriving. But is just any growth good growth? What about the tree that constantly grows and bears fruit but the growth is bushy and gnarly and the fruit is abundant but misshapen and flavorless? Growth and even bearing fruit may be part of thriving but surely they aren't the whole story. I think we use beautiful shrubs, trees, and flowers as symbols of thriving because they capture something that goes beyond healthy growth. I suspect at least a big part of what we see in a plant that says "thriving" to us is a living thing that is growing toward what it is supposed to be. The fruit tree better and better embodies thriving the more and more it takes on a pleasing form and bears pleasing fruit.

I wonder, then, whether human thriving amounts to some-

thing similar. Let's suppose human thriving is the state of growing toward the being we are intended to be. I say "growing toward" because this side of heaven, we'll never fully become who God intends us to be, but we can move along the right trajectory, and we can move slower or faster along that trajectory.

Under this definition, thriving is related to spiritual growth and soul development. It resonates with a popular Bible verse in Young Life circles. When I worked with the organization, we often trotted out John 10:10, in which our Lord Jesus said, "I have come that they might have life and have it abundantly."

What is this abundant life? In Young Life's operating theology it appears to have something to do with snarfing jello, flour fights, and catching live fish with your teeth, but I suspect we can broaden our discussion of thriving from there.

If thriving is growing toward being who and what it is we're intended to be, then it is aimed at a goal, a purpose, a *telos*. What then is that *telos*? I am hopeful that my colleagues here at Fuller—across all three schools—will help me and the rest of the Thrive Faculty fill in the details in the upcoming years—but let me share a cursory sketch of what human *telos* might entail, drawing from some of the many biblical clues.

In Genesis chapter 1 we read that God created humans in his image and commands them to "rule over the fish of the sea and over the birds of the sky, and over every living thing that moves on the earth"—a theme repeated in Psalm 8. So, it may be that serving as God's stewards in exercising care for and authority over the natural world is part of a general human purpose or *telos*. There is work to be done and of a specific type. We may expect, then, that humans thrive insofar as they work as God's caretakers of creation: including the plants, animals, and ecology, but also caring for the human aspects of creation.

This directive to care for and love other humans is often regarded as part of our being created in God's image: as the trinitarian God is fundamentally relational, so are the humans created in his image. But perhaps the plainest evidence for this relational *telos* is the great commandments: Love the Lord your God with all of your heart, soul, mind, and strength. Love your neighbor as you love yourself. To the degree that we effectively love God and love each other, we thrive.

These three purposes—to be good stewards of the creation

and to love God and love others—are for all humans, but perhaps who we are supposed to be is not entirely captured by pan-human aims. The biblical evidence suggests that each of us may have our own purposes that are not shared with everyone else, because, to quote Romans chapter 12, "we have gifts that differ according to the grace given to us," hence we should "each exercise them accordingly." Likewise, in 1 Corinthians 12 Paul writes: "Now there are varieties of gifts, but the same Spirit. And there are varieties of ministries, and the same Lord. And there are varieties of effects, but the same God who works all things in all persons." Likewise, we should not expect all features of thriving to be identical in all people. My *telos* may be different in important respects from your *telos*. Hence, what leads me to thriving will not be identical to what leads you to thriving. Nevertheless, because we do share some common purposes as creatures in God's image, then we will likewise share some common features of thriving.

We may wonder: if thriving is the state of growing toward the being we are intended to be, how do we know if we are on that trajectory? What are some substeps or indicators along the way that show that we are thriving? Here, too, the Bible is not without clues. In Colossians 3 we read that the consequence of being "raised up with Christ" is characterized by "a heart of compassion, kindness, humility, gentleness and patience, bearing with one another, and forgiving each other." Likewise, Galatians 6 famously tells us that the produce of a life characterized by the Holy Spirit "is love, joy, peace, patience, kindness, goodness, faithfulness, gentleness, [and] self control." Surely, then, evidence of these character virtues constitutes some evidence of a thriving human.

So, if we take thriving to be the state of growing toward the being we are intended to be, then we need to know what we are intended to be. At least part of the answer is that God has intended us to work as his stewards over creation, and be in a loving relationship with him and with each other, but also to exercise these roles through each of our particular varieties of gifts and activities. And so, insofar as we grow toward using our personal gifts, talents, and passions to do those activities God has called us to, we should likewise see our lives blossoming with character virtues and other signs of thriving.

With this vision of thriving in mind, I can return to the question: Am I thriving? I confess to you that I am not thriving as well or as fully as I hope I will as years go on, but that I am thriving. I believe God has called me to be at Fuller and so even with a bum leg, my service here is part of my thriving, and by serving his kingdom at Fuller, I am conforming closer to who God would have me be. Perhaps I could be moving along the trajectory of my *telos* a little faster and more enthusiastically, but I believe I am on the right path. Hopefully my colleagues and

family will be able to see the signs.

The Thrive Center allows me to bring together a couple of strands of my life and develop them in tandem. Some years ago now, I left the academy and tried my hand at formal youth ministry. That is a good thing, right? In fact, it convinced me that I am called to research and scholarship—formal ministry is not my *telos*, being an academic is. The two foci of my scholarly work have been the scientific study of religion—particularly as applied to religious development and knowing God—and the development of character and virtue. Directing the Thrive Center allows me the opportunity to bring these two threads together. As I see it, the thumbnail sketch of thriving motivates a vision for the Thrive Center.

The Thrive Center exists to study how thriving people develop, including:

- loving and serving God: how has God equipped us to know him? how is this divine gift unwrapped and allowed to grow and blossom in us?
- loving and caring for each other: what natural resources do each of our psyches possess for loving relationships and how are these resources developed?
- exercising stewardship: what values, attitudes, and abilities, character and virtues do we need? how do they develop?

What are the correlates or outcomes of living a thriving life—a life of love, care, and stewardship?

As we learn more about these hows and whats, can we develop resources, interventions, and systems of delivery for encouraging thriving in young people? How do we translate the basic research into applied research and the applied research into resources that enable real flesh-and-blood young people to become thriving adults?

What a great gift I've been given that addressing these questions is my job!

I share these thoughts about thriving primarily to introduce the Thrive Center and myself, but I hope that these thoughts are also an invitation and a challenge. The invitation is to join the Thrive Center in exploring what it means to thrive and how it is we can better understand and promote thriving. The challenge is the title of this address: dare to thrive. It seems to me that we live in a world in which we can too often be consumed with being healthy or happy but relatively unconcerned about whether or not we are thriving—whether we are being who we are meant to be. I know that in my life there have been times in which I have settled for doing good things but things that conform to someone else's purpose or *telos* instead of becoming the man God has called me—Justin Barrett—to be. Please don't make the mistake I have made. Be someone who does not settle for being okay or good, but dare to thrive. Consider who it is that God has created you to be and chase after it: dare to thrive. TNN

Scott W. Sunquist

Christian Existence, Mission as Participation in Christ

Installation Address: October 2, 2012



SCOTT W. SUNQUIST joined Fuller in July 2012 as dean of the School of Intercultural Studies and professor of world Christianity. His primary interests lie in Christian mission, evangelism, and world Christian history. He has written on mission theology, pluralism, and Asian Christianity, and focuses current research on historiography, missiology, and Christianity in the non-Western world.

Gratitude

ST. MARK THE ASCETIC, in his letter to Nicolas the Solitary advises the young Christian how to live the Christian life:

This, my son, is how you should begin your life according to God. You should continually and unceasingly call to mind all the blessings which God in His love has bestowed upon you in the past, and still bestows for the salvation of your soul. . . . Thus the soul recalls the blessings of God's love which it has received from the moment it came into existence.¹

Christian existence, the same as Christian worship, begins with *thanksgiving*. I would therefore like to begin by giving thanks for my Scotch-Irish Presbyterian mother, Christine, who taught the great value of family and church. In addition I thank God for my full-blooded Swedish Lutheran father, Virgil, who taught me the value of hard work and rejoicing in what is good. My parents—if I may borrow a phrase—gave me “sticky faith.”² I must also take this time to thank my wife, Nancy, who not only protects me from myself, but she did a great job raising our kids . . . with my participation and occasional advice. I thank God for protecting, saving, and empowering all four of our children to be Christ bearers, in their families, their jobs, and in their communities: Caroline, Bethany, Elisha, and Jesse.

Today I also want to honor my mentor, Samuel Hugh Moffett, who taught me the value of careful scholarship and persistent devotion and love for the church. Finally, I am thankful for my fellow deans, Winston Gooden and Howard Loewen, Provost Doug McConnell, President Richard Mouw,

Chairman of the Board Cliff Penner, and the great faculty of Fuller Theological Seminary—especially the faculty members in the School of Intercultural Studies [SIS]—for their support and encouragement as I begin this work as dean of SIS. I am here today because of God's grace enacted and delivered through these and many others. *I am a debtor.*

Gratitude is more than the introduction to this address, it is truly the foundation for Christian existence and for the fulfilling of God's missionary mandate, a mandate of love. Therefore I would like to linger a little longer over gratitude, the foundation for Christian mission, as I talk about our context today.

Context

Missiology is a theological study born of thanksgiving and directed toward the *transformation of all cultures through our participation in Christ*. It is as personal as a decision to stay with a dying AIDS patient in Cameroon, and as expansive as all of time and all of the universe. I would like to visualize this study as a cord made up of three strands. The study involves history, Bible and theology, and anthropology. Another way of looking at missiology is to describe it as a study that involves studying the historical context (“How did we get here?”), the biblical text (“What should we do and who should we be?”), and the cultural context (“How can we best communicate this text in and to a particular context?”). Missiology is driven by the joyous Christian duty to communicate, with all the fullness of the divine and glorious life, the Good News of liberation found only in Jesus Christ. We speak out of gratitude for what God has done for us in Jesus Christ.

Now for some truth in advertising: There is a messiness and a restlessness both to the study of missiology and to missiologists themselves. We are a restless lot because we have read Psalm 82 and Revelation 22 and we take them seriously. Honestly, some missiologists are more restless or messy than others. But one who studies mission, like a missionary herself, is a little bit like Jesus, who could not be contained to one village (Mark 1:38) and often paid attention to the wrong people. It is an occupational hazard we accept . . . even embrace.

I would like to put this installation in its proper context. (Missiologists just love context!) The study of missiology today is very different from when Donald A. McGavran first brought his Institute for Church Growth to Fuller Theological Seminary in 1965. Mission training schools were in decline. The Kennedy School of Missions which had earlier joined with Hartford Seminary Foundation, dating back to 1917, ceased to exist in 1967. Mission programs in seminaries and universities were fading out. At Princeton Theological Seminary, President John MacKay's idea of adding ecumenics to the seminary curriculum, as a fuller concept—if you will pardon the double entendre—of missiology, had not taken hold; in fact it never did. Mission studies seemed passé—with the decline of the World's Student Christian Federation, the secularization of the WCC, and the integration (some said “swallowing up”) of the International Missionary Council by the WCC. In this doldrums-like latitude (and for some people, to balance out the new School of Psychology at Fuller) the School of World Missions and Institute of Church Growth was founded. In three years we will celebrate 50 years of an institution which, I believe, *has been more influential in global mission than any other single institution in the past 50 years*. From its humble beginnings (with one eccentric missional dean, a somewhat confused Australian mission statistician) and a dream for institutional growth we got started. No one at the time dreamed it would become one of the most influential single institutions in mission theology and practice.

But from the time of the founding of the SWM (now SIS) 47 years ago, the understanding and practice of mission or missions has changed dramatically. We are not in Kansas (1939)³ anymore, neither are we in Edinburgh (1910), Amsterdam (1948), or even in Lausanne (1974). What this means (in part) is that the mission theology and practice that was taught at the time of the Edinburgh Missionary Conference in 1910, or even at the Lausanne Covenant meeting in 1974 would be inexact and may even misrepresent the gospel to the nations for today. The understanding and practice of mission has changed not because the gospel has changed, but because the world has changed. The world has changed, in part, because of the work of missionaries, but in part because of wars, migrations, economics, and reigning ideologies.

Bear with me as I go into historian mode for a moment. In the 1960s African churches were still very European in worship and in architecture. The great movements of Pentecostalism and independency of the last quarter of the 20th century were still in the future. Decolonialism was not yet fully grasped as a major influence in reshaping the missionary movement. In the mid-1960s, in fact, Africa was still more Muslim than Christian and more colonial than independent.

There were more than twice as many Muslims as Christians in 1965. Today there are slightly more Christians: an estimated 380 million Christians and 320 million Muslims in Africa.⁴ In the year 2000 it was estimated that each day 16,000 Africans were coming to Christ and 4,300 Europeans were leaving the church—every day. Although the conversion rate in Africa has slowed slightly, the decline of the church in the West continues.

In the 1960s we were sending more and more soldiers to Vietnam and it looked like less and less of Asia would have a chance to hear the name of Jesus. The 1960s changed everything. Now we have Vietnamese studying at Fuller in order to teach theology in Vietnam. The refugees and migration of the 1960s has turned to church growth and theological development today.

In the 1960s, when McGavran was beginning his work studying church growth, he could not have even dreamed of studying church growth in China. China was going through the Cultural Revolution, and most people assumed the church was slowly being wiped out. China, not even on the church growth radar of Fuller in 1965, is now a country that occupies much of our missional time and thought, not only at Fuller, but throughout Asia and the West. Chinese missionaries are taking the gospel back, across the roof-top of Asia, to the Middle East. With over 60 million Bibles printed and distributed in China, and with the *Jesus Film* being produced in China—with the Communist government approval—the missional context of East Asia looks very different today. Just last week I heard a Chinese scholar from Shanghai describe the revival of religion in China by talking about “Believing China.” The Chinese government is asking if this is true, and if so, what does this mean for foreign relations with the West? In my lifetime we have gone from communist to believing China. Missiology must constantly innovate or adapt to these new global realities.

In 1965, over two-thirds of the world was rural. Most of our missionaries were preparing to work in villages in pre-modern conditions. Today about 55 percent of the world is urban and therefore most of the unreached people in the world are in cities.⁵ Urban missionary work is very different from rural tribal work. One involves fairly homogenous human groupings in agrarian environments; the other involves multicultural, multilingual groupings of fragmented families with newly formed hybrid communities. Many of these missionary contexts are in China and Nigeria and Argentina. Others are in Los Angeles, Paris, and Copenhagen.

In 1965 the base of Christian missions was mostly in the West among churches that were decreasingly mainline and increasingly evangelical. However, there was a fairly clear di-

vide between mainline and nonmainline. Today the lines are blurred, and the growing Pentecostal and emerging Christian communities have created an even more interesting and messy base of mission in the West. The type of courses, approaches, and strategies of McGavran and Tippitt were innovative for the 1960s. New innovation is needed today. I would like to suggest that innovation in our theological understanding of the Christian life must be our first priority. Some of the blurring of the lines concerning church identities may prove to be a propitious time for the blurring of the lines of missionary and lay Christian, of pastor and church planter, of evangelist and social case worker, and of local church and mission outpost. Sometimes distinctions are necessary, even vital. Other times distinctions are a hindrance to Jesus' prayer, ". . . thy kingdom come on earth as it is in heaven." This prayer will be answered *only if distinctions between missionary and lay Christian are blurred.*

A few other changes in the context for mission need to be mentioned. One of the changes is as obvious as today's headlines: there is an increasing number of nations labeled as having a high level of political restriction of religions. According to the Pew Religious Forum, that number has grown from 31 to 37% of the nations of the world⁶ in the past five years. That means that over one third of the nations of the world may require a high price for Christians to bring the Good News of Jesus Christ. Even the traditionally Christian nations are becoming more restrictive.

In addition, and of even greater concern, is what the Pew Forum calls "social hostilities" against religion. This trend is more difficult to quantify, but it is easy to find anecdotal evidence in our daily papers and in local coffee shops. According to Pew the number of countries that have a very high level of social hostilities to religion has increased in the past four years from 10 to 15. These hostilities come from secular ideologies and from heightened religious protectionism. Both are rooted in fear. Jesus talked about how to cast out fear, and I think it is worth talking about this today. We could spend the rest of my minutes talking about how the global context has changed in terms of human trafficking, ongoing slavery, terrorism, malnutrition, poverty, and religious revivals among Buddhists, Hindus, and Muslims. But if we took time to express these challenges to the kingdom of God, we would also have to talk about global, as well as local signs of kingdom presence: the growth of independent churches, the rise of social forms of Christianity among younger churches, and of course movements to 'Isa among Muslim communities in South Asia as well as in the Middle East and North Africa. But I only have 20 minutes, so please attend classes in SIS and learn about these issues! You are welcome!

Once we have begun to understand the radically changed context from 1965 when the School of World Mission was founded, we need to understand how Christian and mission identity has changed, and then finally I would like to suggest some innovation that might be called for if we are going to be faithful to God's mission today. First, Christian identity.

Identity

It wasn't really that long ago that when I brought up the term "missional" with a theologian he said that he didn't like that neologism. In less than 15 years this new term has created a new identity for mission professors and for those who study ecclesiology. Missional is what "ecumenical" was for mainline churches in the 1950s and what "church growth" was for evangelicals in the 1960s and 1970s. All can be good Christian words or phrases and all need our prayer and attention.

However, "missional church" is really an unnecessary epithet. Is it possible to talk about church and not mean missional? Unfortunately it has been, and so we need to add the adjective *missional* to remind us what a church is supposed to be. I believe that we not only need to add the term *missional* to church, but to Christian. Especially in the West, we have forgotten that it is not possible to be a Christian without being missional; without being a sent one.

I suggest that mission today must return to all of our theological and biblical studies (even our understanding of pastoral counseling) as a central concern. I was taught that we can not (or should not) read the Bible without seeing that all of Scripture points to Jesus. Jesus is the Word. I think this is true. But Jesus is also the *missionary of God*. He is the sent one, and so if we are reading the Bible with a Jesus trajectory, then we are reading with a missional trajectory. For example, how can we ever talk about the Apostle Paul and his great doctrinal and practical sections of his letters without noting that these were missionary letters written, as it were, on the fly? Doesn't this shape our understanding of theology as well as biblical exegesis? If this is true, then what about the Gospels, all four of which end not with the institutional church and liturgy, but with *diaconal communities commissioned with an impossible task*. Ecclesial existence is missional existence. Christian existence is missional existence.

And then I might ask, is it really the task of pastoral care and counseling, or of family counseling, to leave people healthier than before? Yes, but what does it mean to be healthier? In fact, Jesus had a much higher view of the kingdom than of the nuclear family. Sometime families pay the cost of basic Christian discipleship: discipleship that seeks to save the lost and defend the oppressed. Sometimes families pay the cost of mission, evangelism, or of justice. In our pas-

toral care shouldn't we prepare people to be healthy enough to lay down their lives for their friends? Isn't this part of what it means for us to participate in Christ?

What is Christian discipleship? At the end of discipleship—even in the heart of discipleship—is mission. A healthy disciple is a sent disciple. Another way to look at this is to recognize that

- sanctification involves sentness;
- holiness requires justice;
- receiving Jesus means we are sent by Jesus.

Therefore we should take even more seriously Christian spiritual formation as a response to the Great Commission. Spiritual formation is not personal improvement, it is boot camp for imminent kingdom battles.

There is no other way to be Christian. Any other way of being a Christian is a cheap imitation. Either taking up our cross, or laying down our life as a Christian is a work that is done for others. Taking up and laying down, we might say, is for going out. Love always requires others—others who will receive the love. But *Christian* love also crosses frontiers.

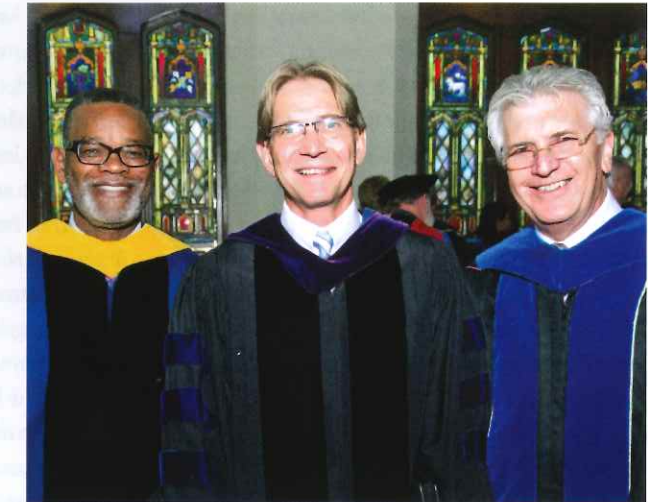
There are some sayings that just never leave you. I pray that in my dying days I will still have enough of my wits about me to say to my children what I read in a book when I was in high school. It was recorded in the college journal of a young man preparing to be a missionary, and eventually a martyr. I believe he was quoting Albert Einstein: "The only life worth living is the life that is lived for others." It's true. If we live a life for one other person—if we are used by God to bring one other person to faith in Jesus—then our life is worth 100 percent more. But what if we bring a family of five to faith? I have found this simple truth has even been a powerful concept in evangelism; that the life lived for others is far more precious. When people are confronted with this thought they often begin on the road to repentance, turning away from living for themselves. The path from self-centeredness to other-sentness begins in Christ-centeredness.

What does this have to do with the School of Intercultural Studies for the future?

Innovation

My brief discussion about Christian identity lays the foundation for future discussion about our curriculum, both formal

and informal. The School of World Mission, now the School of Intercultural Studies, was founded in innovation with a clear focus and a laser sharp purpose: to be more effective in reaching those who have not yet heard the Good News of Jesus Christ. Today we want to reaffirm that same purpose, but now we have to adjust both where we find the unreached and what it means to reach people with the gospel. The unreached are still some unreached people groups, ethnic enclaves that share their own unique values, language, and culture. But the intentional work of reaching these people over the past half century has had a great impact. Most of these unreached people are going to be reached by their own majority or at least Christian populations in their countries: their neighbors. Chinese Christians in Malaysia are really reaching the Iban and



From left to right, the deans of Fuller's three schools: Dean Winston E. Gooden of the School of Psychology, Dean Scott L. Sunquist of the School of Intercultural Studies, and Dean Howard J. Loewen of the School of Theology.

Kadazan Dusan in Sarawak and Sabah. Han Chinese really are reaching out to Chinese minorities. The work continues, but we need to view the unreached with different lenses today for many of the newly unreached are the formerly reached and now lost: Europeans and North Americans. Who is going to reach them?

Today we also need to add to "the unreached," the *unloved*. The unloved are the oppressed poor. They are the slum-dwellers of Kolkata, of Rio, and of Cairo. They are the sex-slaves—a growing demographic especially in south and east Asia. The unloved are hidden people. They do not have the time or access to "google" words like *depression* and *sex-trafficking* and *slavery*. The unloved need the humble Jesus to walk with them and to love them. Missionaries in the past

went to desperate regions from a position of power. Today we need to prepare missionaries to go to desperate regions in weakness and emptiness . . . with a less advantageous exchange rate!

This type of mission does not come with preconceived strategies and prefabricated theological formulations. This type of mission offers Jesus, brings Scriptures, and bears others burdens, and so fulfills the law of Christ. This type of mission is far more risky and so preparation is different. Rather than preparing missionaries with carefully wrought patterns and traditional Western formulations, we need to prepare missionaries who are deeply embedded in the biblical text and in the life of Christ. We need to prepare through character formation as an integral part of academic excellence. Missionaries who are going to reach the unloved of our countries of the world will have to have finely tuned Christian reflexes. They will not have the time to look up answers, they will be called upon to answer, to act . . . or to know that it is time to be still. Authority in mission will be derived from authenticity of Christian character: humility.

Frankly, I am less concerned about innovation in terms of technique, technology, or tectonic shifts in strategy. What is needed today is innovation in spiritual formation. We need to see spiritual formation as missional formation; more like training to be a decathlete than a couch potato. I have done a lot of study of church history, and in teaching history I focus on individuals. I tell my students that church history is really the history of individuals and how they interpreted and lived Scripture in their context. I have found that the tall giants of the faith were also deep and humble. The ones whose lives and ministries shout from the pages of history were quietly dying to self. In contrast, don't you find it a great mystery that with so many Christians in the United States that we still have such an unconverted culture? I think it has something to do with Christian character and the unwillingness of Christians to live a consistent countercultural lifestyle. This should be a major concern in our School of Intercultural Studies. Witness is a person before it is a precept.

Still it must be said, innovation in mission today will require technical approaches and statistical studies; we will and we must study how to better reach the unreached and how to more completely and faithfully love the unloved. But the heart of innovation will now be the transformation of the *human* heart. The world needs little Jesuses more than it needs professional missionaries or even technical scholars. Those little ones who are crushed by the injustices and poverty in the cities need a person to walk with them as the presence of Jesus, reaching out with a pierced hand to cradle the crushed heart. This is not a call for less academics but for more vigor and

consistency.

Mother Teresa, when she had just chosen the name Teresa after Thérèse of Lisieux, at the age of 22, wrote back to her Catholic sisters in Europe after less than a year in Calcutta:

The heat of India is simply burning. When I walk around it seems to me that fire is under my feet from which even my whole body is burning. When it is hardest, I console myself with the thought that souls are saved in this way and that dear Jesus has suffered much more for them. . . . The life of a missionary is not strewn with roses, in fact more with thorns; but with it all, it is a life full of happiness and joy when she thinks that she is doing the same work which Jesus was doing when He was on earth, and that she is fulfilling Jesus' commandments: "Go and teach all nations."⁷

If you were to ask me, "Dean, what do you hope your graduates will accomplish 10 or 15 years from now? What great works do you hope to see them do?" My answer may seem a little troubling or grandiose. My goal as dean of the School of Intercultural Studies is *to see that every one of our graduates will become embedded in godless communities inhabited by the unloved bearing in their bodies the death of Jesus, so that the life of Jesus might be revealed. They will fast and pray the heavens down and will not stop praying and loving and serving until they see the total conversion of these cultures . . . or until Jesus returns.*

I would like people to notice that Fuller produces extreme disciples and, therefore, extreme missionaries. Fuller graduates are so consumed by the love and the passion of Jesus Christ that they love recklessly. Jesus did. Jesus says, "I am coming soon! Blessed is the one who keeps the words of the prophecy." In the name of the Father, the Son, and the Holy Spirit. Amen. TNN

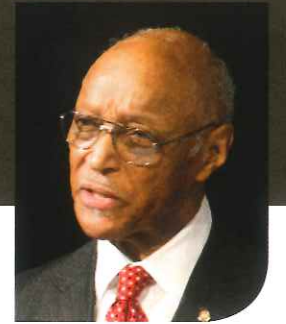
Endnotes

1. Quoted from *The Philokalia*, Vol 1, p. 148.
2. Kara E. Powell and Chap Clark, <http://stickyfaith.org/>.
3. The year *The Wizard of Oz* was produced by Metro-Goldwyn-Mayer.
4. Estimates are based on the 2000 *World Christian Encyclopedia* and the Pew Forum Global Christianity Report, December 2011.
5. From the United Nations 2005 Executive Summary of "World Urbanization Prospects." http://www.un.org/esa/population/publications/WUP2005/2005WUPHighlights_Exec_Sum.pdf
6. According to the latest information from Pew Forum on Religion and Public Life ("Rising Tide on Restrictions on Religion," September 20, 2012) <http://www.pewforum.org/Government/Rising-Tide-of-Restrictions-on-Religion-findings.aspx>
7. Brian Kolodiejchuk, M.C., *Mother Teresa, Come Be My Light: The Private Writings of the "Saint of Calcutta."* (New York: Doubleday, 2007), p. 18–19.

James Earl Massey

The Lord as Helper

Chapel Address: January 23, 2013



JAMES EARL MASSEY is dean emeritus of Anderson School of Theology in Anderson, Indiana. He has served churches and educational institutions for more than 50 years, walking alongside such seminal leaders as Martin Luther King Jr. and Howard Thurman. In his recent book, *Aspects of My Pilgrimage*, Massey pays tribute to the great religious leaders who influenced his life's journey.

I AM TEMPTED to say a lot of personal things, but I must save them in order to give you the message the Lord has laid on my heart—the Word of God must take precedence.

"Samuel took a stone and set it up between Mizpah and Shen. He named it Ebenezer, for he said, 'Thus far, the Lord has helped us.'" This text carries us back many, many generations to a very distant time, a very distant place, and in the life of an ancient people. The scene in the text is of a man, the leader of his people, setting up a monument, to commemorate an event whose meaning would echo down through the centuries and is still heard today by this ancient people whose descendants are still among us and throughout the world. The setting up of a stone, those words, have to do with erecting a monument. All of us are familiar with monuments. They fill our cities, they fill our nation's capital, and usually there is an inscription on the monument to depict some occasion, honor some person or some deed. And those monuments are there permanently in order to teach, remind, and perpetuate valued meanings. Samuel sets up this monument in order to commemorate the deliverance God gave the Hebrews from the archenemy of that nation: the Philistines. When they came upon them as they were worshipping—and the Israelites had not come to war, they had come to worship—God routed the Philistines by a deed that the text does not fully explain. We're left to wonder how it happened. But that it happened is being commemorated in a stone. Two words were listed, etched on the stone—'eben ha-'ezer, "stone of the help." Two words, for a deed that would have meaning for centuries still to come. Doesn't take much, just takes a celebrative act to give God thanks, to say *thank you* to God, simple words. But when it is done with real thankfulness of the heart, God is pleased. And when a monument is raised, generations yet unborn passing

that way will take note and also learn to thank God.

As you enter the second semester of your school year, I have been impressed to use this text to help you give God thanks for how you have come this far. Because in giving God thanks, you renew the hope you need for the days that are yet to come and the future you cannot yet see. In giving God thanks you are giving him your personal tribute for placing a hand, a tender caring hand on your life, overturning forbidding circumstances and overcoming threatening evils that you did not even see. I've come to talk about that. The Lord is our helper. He helps because he's gracious. He helps because he loves us. He helps us because we need help. He helps us because we ask for help. He helps because we could not endure without his help. He also helps because we could not succeed without his help.

There are many in our day and in America where we think individualistically all the time, who think there are good results in our life because they are the grand rewards of our own personal effort, our self-will, our dogged determination. But we haven't thought long enough or deep enough if that's as far as we go. Because anyone with any good sense knows that in spite of all the careful planning, in spite of all the best intentions, they can be thwarted. Even the most persistent efforts will fail, apart from being helped and enabled. Now a proper view of the human condition—yours and mine—shows that life is a mixed story of opportunity and obstacles. Plans and problems. Concerns, challenges. Nothing you do in life really makes its way without help. It does not last without help. You and I could not last without help. When God fashioned humans, he breathed into their nostrils, and man became *nephesh chaya*, a living being. The life in you now is at the hand of God, and it does not continue without his help every day! Interesting that you don't have to relearn the breathing process all over again every morning. Because you're helped! Threatening evils, unavoidable struggles—we need the assistance from beyond ourselves.

Now the Hebrews needed God's help so often that wherever you pick up your Bible and open it, you find a problem for which they need help. Wherever you read! That's all the Bible is about! Humans needing help. That's all it's about. Only the names differ and the times. Turn to the book of Psalms, Israel's hymn book, and what do you find? Always, paeans of praise

for having been helped, or prayers asking for help. Psalm 37:39–40: “The salvation of the righteous is from the LORD, he is their refuge in times of trouble. The LORD helps them and delivers them.” Psalm 46:1: “God is our refuge and strength, a very present help in trouble.” Psalm 118:13: “I was pushed hard so that I was falling but the LORD helped me.” Psalm 121:1–2: “I lift up my eyes to the hills; from whence does my help come? My help comes from the LORD, who made heaven and earth.”

Where does your help come from? Your own little mind? Your thimbleful of brains couldn't manage your life unaided. I don't know why we Americans are so selfish and so self-willed. We didn't create the world, and yet we try to dominate it. We haven't learned yet how to be humble with power because we have forgotten who helped make us a nation. The Lord is our helper. Seminarians, remember it. Faculty members, it is not your learning that will be remembered most by your students. It's by the touch on your life that shows them the God you serve. That will be remembered. Administrative staff, pride in where you work and what you do—remember it is the Lord who gave you the spot that you now occupy. You were helped to get your job. All of us have been helped. I wish I could go through a litany of helps, but I'm going to confine myself to just to a few more things to be said, because the time is short.

I've talked about Israel's help and the stone Samuel erected—two words on it. I'm thinking now about my people, color-wise. I'm thinking about my great-grandmother, Lizzie Underwood, who was freed by the edict of a president who knew he was being helped. A hundred and fifty years ago, the Emancipation Proclamation was signed on January 1, 1863. Historians of Lincoln's presidency tell us that he didn't get any sleep on the eve of January 1. He was busy pacing back and forth on the second floor of the White House, studying yet again the proclamation, the wording of it that would be signed later on New Year's Day. The signing would be a ceremony, yes—cabinet leaders would be around him. It would be an official act. But it was more than ceremony. And it took a blend of political conscience, civic courage, and a personal persistent faith for him to do what he did. The signing was an intentional action on his part that he'd been contemplating for a long, long time, and had preannounced it in September of the year before. His staff was divided on whether this should be done. Some argued it would be the end of his presidency. But Lincoln was determined to do this because he felt it was the right thing to do. He said it would ensure the nation's future, and it would also change the status and destiny of an enslaved people who were suffering the greatest indignity that humans had ever undergone. So he had his will set to do something to change it. He felt it was duly warranted by the Constitution. So that afternoon he took up his

gold pen, dipped it in ink, and as he was about to set his signature, he said, “I never in my life felt more certain that I was doing right than I do in signing this paper.” And then he added, “If my name ever goes into history, it will be for this action, and my whole soul is in it.”

What made this man do what he did? What was it that gave him the courage and the will to persist, in spite of his cabinet saying otherwise? It was the hand of an almighty God who saw that it was time to change the status of a people who had been crying and praying, as did the Hebrews years earlier, to be delivered from their bondage. My great-grandmother was one of those whose prayers was behind this deed that Abraham did in signing the Emancipation Proclamation on January 1 a hundred and fifty years ago. I'm speaking personally. I thank God for the help he's given my people in this nation that underwent such horrid conditions at the hands of a nation whose founding fathers wanted to be free, and yet they based the nation on slavery. What a strange set of affairs. Abraham Lincoln understood how strange it was when he said, “Those who argue for slavery always talk about the good it is for this people, but they never would want to give that good to themselves.” How wise he was. I'll say more about Lincoln tomorrow in the lecture.

Of what people are you? Who helped them rise in history? Who helped you come to where you are now, studying at Fuller? Oh, I know you're thinking of grade point averages and all of that. But none of that matches what I'm talking about now. You are where you are because you were helped to be there. I don't understand how anyone can be proud on their own. Why should the spirit of a mortal be proud? We are helped!

Well, I've talked about Israel. I've said a brief word about African Americans. Nor have I forgotten that fifty years ago there stood at the Lincoln Memorial a man, a dear friend of mine with whom I worked, who gave that challenging speech still being heard around the world. He stood there knowing he was being helped. Interestingly enough, both Abraham Lincoln and Martin Luther King Jr. lost their lives by an assassin's bullet. But they did what they did because they were helped. And they died in the will of God. I thank God for them.

Now let me give a personal word as I close. The Lord has been my helper. I have known, since the age of 14 when I was converted, I have known the Lord's help daily, systematically, constantly. I did not think I would reach the age of 39 because of health issues. But here I am, far from 39. I have known God's help while facing the painful crises of youth, peer pressure—all of my peers arguing, “This is what we want to do, be part of it!” And my conversion told me, “You can't be part of that. You can be their friend, but you can't be part of what they're doing.” And I resisted. And years later they told me they wished they had been able to resist. How did I resist? I had help. I didn't get

into drugs because I was helped! There is nothing that happens in the world that must take you or me down, because we, you and I, have help from above. And there is no peer pressure that ought to be so constraining that you cannot stand on your own, because if you're living for the Lord, you're not on your own. “I am the LORD, I will be your Helper.” You can make it. I have known the decisive challenges of adulthood; choosing a mate, choosing the right one. And this year, she and I will celebrate 62 years together. Help! Whenever I introduce her I say she is the better half—because she is. How's your dating going? How's your courtship? How's your marriage? There is help!

I have not only known the crises of youth, the challenges of adulthood, but I've also known and am still experiencing the unavoidable surprises of the middle years, and at this later stage of my life, I'm experiencing what T. S. Eliot referred to so poetically as “the things reserved for age.” The gifts reserved for age. Arthritis. But I'm being helped! I have a walking cane, but I don't mind going anywhere and it does not embarrass me to use the cane because I can still go. Think of the alternative! I once heard a woman speaking about her pastor, a man who was my friend, “I don't want him to have a cane! We don't want a pastor who has a cane!” He had lost his leg in an accident and she was embarrassed in seeing him use a cane in getting about. How silly on her part. He was pouring his life into hers and she was embarrassed by his cane. What fools we mortals be. What embarrasses you? So long as the Lord is helping you, you can stand the embarrassment. Like Paul standing before Agrippa, I can say, using his exact words, “to this day I have had help from God and therefore I stand here testifying.” What is your testimony? And do you have the courage to give it? That's what witnessing is all about. Sharing the faith out of a personal experience. That's what witnessing about the Lord is all about, and that's what I am doing today. I'm witnessing about Israel's history, I'm witnessing about African American history, I'm witnessing about my own personal story, and I'm glad about it, because the Lord has been my helper. And I'm advertising that help for you today who might be struggling with something that seems a bit too much for you.

So let me close with a story. A dear friend of mine was preaching at Bishop College during Prayer Week. In one of the sermons he gave he told of his own growth in a family where his father had died and his mother was training the children as their widowed mother. After the sermon that night this young lady came to him smiling, and she said after a pause, she said, “Reverend, if nobody else understood you in what you said tonight, I certainly did.” And then she told him about her experience and walk with the Lord. She said that when she started college, her father and her mother said to her, “Lily, if you behave yourself and make good grades, we'll see you through col-

lege.” Well, that fall her mother died. She went home for the funeral. After the funeral was over her father said to her, “Lily, get your things together, you're going back to school. Behave yourself, make good grades; I'll see you through college.” That spring, her father died. She came home; relatives came from near and far to assist her with the funeral details. After the family came home from the cemetery, Lily went to her room exhausted, frustrated, brokenhearted; fell across the bed, having shut the door to her room, sobbing her soul out. She heard a voice speaking to her. Nobody had entered the room, but the voice was sounding in her consciousness. “Lily, follow me, and I'll see you through college.” It was the Lord speaking to Lily. She sensed it was the Lord. She got up from her bed, composed herself, told her family what she was going to do, and she went on back to school. And through ways that she didn't tell this preacher friend of mine, the Lord saw her through the next three years, and while she was standing there, telling my friend about her walk with the Lord, and how the Lord had helped her, she was getting ready to graduate.

If you ever wonder what your life is going to be, or how it can happen for you, remember, the Lord is our helper. You don't see how he's going to work, but he knows how. Give him your trust. Give him more than ceremony. Samuel had a ceremony as he was erecting this monument. But Samuel gave God more than ceremony; Samuel gave God commitment. And as long as you and I give God our hearts in a committed fashion, there is nothing under heaven that God won't do for you to see you through. When he knows he can trust you, he'll give you his very best. Really that's what he did when he sent Jesus among us. And we didn't have sense enough to honor his coming. So he forgave, and that's the best gift he can offer. Have you experienced that? And if you really thank him for having been forgiven, you don't have him go through that all the time. You gratefully serve out of an obedient spirit, and try to the best of your ability never to bring shame or dishonor upon your Lord. There's a hymn we sing sometimes—I don't know if you still sing it, in this day of 7-11s . . . I have nothing against them, there is a message they convey—but the solid hymns that have come down to us across the centuries have an extended message through several stanzas that teach us a solid theology that holds us steady when the times are hard. There is one that I love and I commend to you: “Fear not, I am with thee. Oh be not dismayed, for I am thy God, and will still give thee aid. I'll strengthen thee, help thee, and cause thee to stand, upheld by my righteous, omnipotent hand.” The last stanza runs like this: “The soul that on Jesus doth lean for repose, he will not, he will not desert to its foes. That soul though all hell should endeavor to shake, He'll never, no never, no never forsake.”

Don't tell me you can't make it. **TNN**

KURT FREDRICKSON is associate dean for Fuller's Doctor of Ministry and Continuing Education programs and assistant professor of pastoral ministry. Prior to joining Fuller he was on the pastoral staff at Simi Covenant Church in Simi Valley, California, for 24 years, serving as senior pastor for 18 years.



GETTING ANY OF US to speak for fifteen minutes only is absolutely impossible—but we'll try. I want to approach our topic this afternoon from the perspective of the church, and before I came to Fuller eight years ago I was the pastor of a local congregation; most of that time as senior pastor of a church in Simi Valley. So I want to talk about this from very much on the

ground, in the local church.

And here's my premise: I affirm the full participation of women in the ministries of the church. Women, just like men, are called and gifted to serve in the church. That's the message of Scripture even if that's not always easily lived out or interpreted, and that is also the abiding though not always consistent testimony of the church throughout the ages. Paul puts it this way in Galatians chapter three: "There is neither Jew nor Greek, there is neither slave nor free, nor is there male or female for you are all one in Christ Jesus."

That is a powerful and revolutionary statement that sets the church apart. Issues of race and class and gender are different in the church. We are one in Christ. Peter quotes the Old Testament prophet Joel in Acts chapter two, saying, "In the last days, God says, 'I will pour out my spirit on all people; your sons and daughters will prophesy, your young will see visions, your elders will dream dreams, even upon my servants, men and women, I will pour out my Spirit in those days and they will prophesy.'" Women are called and gifted to serve in any and all places in the church. My denomination, the Evangelical Covenant Church, puts it this way: "We believe that the biblical basis for service in the body of Christ is giftedness, a call from God, and godly character—not gender." For me as a minister in the Evangelical Covenant Church and as a member of the faculty here at Fuller, this is my unwavering conviction. I know that there are others in the church who hold a differing opinion, I know that there are some students here at Fuller who hold a differing opinion; I don't believe that

is the proper way to understand Scripture though.

This is a core conviction for me that influences the people I hire in my departments at Fuller and the people who come and teach at our Doctor of Ministry program here. For me, bottom line, it's a justice issue. Lynne Hybels recently has written: "When women are given half a chance, they change the world." I am convinced that women are the greatest untapped resource in local communities and in the church. We get glimpses of women given half a chance in the Old Testament: Miriam, Esther, Deborah, Ruth, Rebekah. We see women given half a chance in the New Testament: Mary the mother of Jesus, Mary Magdalene, Phoebe, Priscilla, Junia, Lydia. And throughout church history, we see women who have been given at least half a chance: Mother Teresa, Dorothy Day, Teresa of Avila, Evangeline Booth, countless courageous women in the modern missionary movement, Henrietta Mears, and so on. In the past, and today, in all parts of the world, women have served faithfully in the church, and yet their full participation in the ministry of the church continues to be an issue that we wrestle with. . . . (continued online)

MARI CLEMENTS has been at Fuller since 2001 and is associate professor of psychology and chair of the Department of Clinical Psychology. Her areas of expertise include research in marital conflict, parenting, developmental psychopathology, research design, and statistics.



I AM COGNIZANT that this may be the only psychology lecture some of you may ever hear at Fuller. So I will try and be conscious of the time, but I wrote way too much. . . . The treatment of gender—particularly female gender—in the Bible is complex and layered. . . . There are two major sources of data that underlie a lot of what I'll

be presenting today. The first one is the General Social Survey, which is a nationally represented sample of the United States, and the data were collected on an annual or biannual basis since 1972, looking at demographic, behavioral, and attitudinal trends. The ends are pretty large, as you can see there, ranging from not quite 1500 to a little over 4500 de-

pending on which year we're talking about. The second one is the National Survey of Families and Households, and it was collected three different times at three different waves of data looking at demographics, life history, marriage, parenting, economics, psychological well-being, etcetera. It started out with a sample size of over 13,000.

In their review of the ethnographic literature, Davis and Robinson documented variability in view of what they would refer to as "religiously orthodox individuals." Sociologists and psychologists don't quite know how to deal with us, so we are referred to as religiously orthodox, as conservative, as fundamentalist Protestants, as a variety of different kinds of things. And their description of an evangelical—you might or might not recognize yourself in. Nonetheless, in their review of this literature, they said there was a great deal of heterogeneity in the way those individuals viewed issues around gender, around family, and around work. And they concluded that Scripture does not provide an unambiguous basis for taking positions on contemporary issues, including those relating to gender. A sociologist said that! They also noted that there was a good deal of tension between egalitarian and traditional ideals in beliefs, behaviors, and writings of evangelical Christians.

In my work today, I'm really focusing on two main areas, and they overlap. One of them is work and the other is family. . . . We see that men and women work different numbers of hours. This doesn't differ by religious affiliation, that is, religiously conservative individuals are likely to have the exact same pattern as those with liberal sorts of beliefs. Now interestingly enough, the attitudes aren't necessarily reflective of the behaviors, but there's some interesting and fun things going on in these data. So in contrast to all other groups of Baptists, young, fundamentalist Baptist men did not endorse gender stereotypic views of what husbands should be. All the other groups did, but young fundamentalist Baptist men didn't. . . .

The National Survey of Families and Households did find that religiously conservative families tended to have lower incomes, which they ascribed to being more committed to family and less committed to work. But they found that these differences disappeared when they controlled for a variety of different kinds of demographic factors. Furthermore, when we look at the General Social Survey, we find that there's a lot of variability in views of women's employment outside the home and the role of women within the home, but that religiously orthodox women were significantly more likely than religiously orthodox men to reject traditional views of women vis-à-vis employment, that is, they were more likely to endorse it more favorably. (continued online)

JUAN MARTÍNEZ is associate provost for diversity and international programs and associate professor of Hispanic studies and pastoral leadership. Since coming to Fuller in 2001, Dr. Martínez has also served as director of the Center for the Study of Hispanic Church and Community.



THE DISADVANTAGE OF being last is that I have four minutes, according to the schedule, to present, so we'll see how close I stay to that. As you look at the title I'd like you to invite you to add three words to the end: "in cultural context." So: "Gender, Bible Reading, and Ministry in Cultural Context." And I want to give the cul-

tural context that I'm going to be speaking from. Because the reality is that all that we've been talking about, in fact, our theology, the way we do family, the way we think about these things are culturally framed. And so we do have at least these two important factors: we want to take seriously how we read the Bible when we think about ministry; so theology is one issue. But we also have to do it in a cultural context; it's got to fit where we're at.

And so as I think of Latino culture just very broadly, one of the interesting things that has happened with gender roles and religion historically, if you look at Catholicism, you say, well men run everything—in the official structures. Women run everything in the non-official structures, religiously. So if you look at both of these—and where do the actually committed Catholics spend most of their time? In the informal structures that are run by women. So in the Catholic and especially Latin American Catholicism and Latino Catholicism in the United States, you've seen this interesting way of making peace—not always at peace, sometimes very much at war, especially when the formal church structure tries to call heretical and tries to limit the role of the informal structure—but in Catholic circles, you have this interesting peace, if you will, or at least this interesting way of doing religion. All the formal stuff will happen in the church, it will all be run by men, there's a few women around. But once you actually do the popular religion and the practice, 90 percent of the people running it are women. And nobody challenges their authority in that area.

Now in Protestant circles, we have a different set of dynamics. . . . (continued online)

Entire panel available online at www.fuller.edu/TNN.

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Faces of Fuller | **JOY J. MOORE**

Joy Moore was five years old when she convinced her parents to let her attend a church across the street from her elementary school. The two institutions shaped her youth, instilling a lifelong commitment to learning alongside a deep responsibility to spread the good news of the gospel. Later, in a homework assignment for a sixth grade class, she declared that she was called to be a preacher just as her grandmother was before her. No wonder Moore has embraced teaching and preaching ever since. "One of my passions," she says—in addition to urging African Americans to be role models in all fields of study—"is biblical interpretation, orally presented, toward the formation of a community called Christian." Recently, in a cross-country move to join Fuller's faculty, she found that schoolgirl autobiography as she was unpacking boxes. The sight of its wide-lined paper, its blue ink, and her childlike handwriting vividly reminded her of a conviction reaching back to her youngest memories and carrying her to this day.

Joy Moore is associate dean for African American Church Studies and assistant professor of preaching. Her areas of expertise include community formation, practical theology, homiletics, narrative hermeneutics, and social media. For more on the African American Church Studies program, visit www.fuller.edu.

