

God's Work of Creation:

One Truth Viewed from Three Perspectives

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About the Presenter

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Current Projects

- a book concerning the same-sex "marriage" debate
- *Telling the Next Generation: Essays concerning the Significance of Christian Education in the Evangelical Lutheran Synod, 1918-2008*, co-edited with Paul Madson and Peter Anthony, with assistance from Bethany Lutheran College student interns (Mankato, MN: Evangelical Lutheran Synod, forthcoming [2010?]).

Recent Projects

- "The Coercive Reality behind Pro-Choice Rhetoric: Identifying What 'Popular Sovereignty,' 'Reproductive Freedom,' and 'Death with Dignity' Demand from Persons Who Disagree," *Life and Learning* (Proceedings of the 2009 University Faculty for Life Conference, University of St. Thomas Law School, Minneapolis, MN, 5-7 June 2009) (in press).
- "The Church and Science through the Ages: Seven Key Questions from the History of Science," *Here We Stand: A Confessional Christian Study of Worldviews*, edited by Curtis A. Jahn (Milwaukee: Northwestern Publishing House, in press).
- "Teaching Objective Morality to a Postmodern Audience," *Here We Stand: A Confessional Christian Study of Worldviews*, edited by Curtis A. Jahn (Milwaukee: Northwestern Publishing House, in press).

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Outline: Perspective I

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A One-Sentence Summary of Human Origins, #1: From the Holy Spirit's Perspective

Who?	
Did What?	
To/For Whom?	
When?	
Where?	
How?	
Why?	
A single informative, grammatical, and long summary sentence.	

Form adapted from Thomas A. Angelo and K. Patricia Cross, *Classroom Assessment Techniques: A Handbook for College Teachers* (1993).

<i>A Sample One-Sentence Summary: Columbus's Famous Voyage</i>			
Who?	Columbus	To/For Whom?	Spain and the Kingdom of Heaven
Did What?	Sought a new route to India		
When?	1492	Where?	Atlantic Ocean
How?	sailing westward with the crews of the Niña, the Pinta, and the Santa Maria		
Why?	in order to bypass the Muslim territories and secure wealth for Spain to fund the protection and expansion of Christianity		
A single informative, grammatical, and long summary sentence.	Columbus sought a new route to India in 1492 for both Spain and the Kingdom of Heaven by sailing westward across the Atlantic Ocean with the crews of the Niña, the Pinta, and the Santa Maria in order to bypass the Muslim territories and secure wealth for Spain to fund the protection and expansion of Christianity.		

Where Does Creation Fit in Lutheran Theology?

The short answer is, “It fits everywhere.” For a longer answer, consider the following suggestions:

Biblical Theology

- From Genesis to Revelation, Scripture proclaims God’s work of creation; e.g., Gen 1-2; Ex 20:11; 2 Kgs 19:15; Neh 9:6; Ps 95:5-6, 121:2; Isa 45:12-13; Am 4:13; Mal 2:10; Mt 19:4-5; Jn 1:1-3; Ac 17:24-28; Ro 1:20; 1 Co 15:45; Eph 1:4; Col 1:15-16; 1 Tm 2:13-14; Heb 4:4; Ja 1:18; 1 Pt 1:20; Rev 4:11.
- It is *not merely* a question of whether to take *Genesis chapters 1 and 2* at face value.

Symbolics

- All three ecumenical creeds emphasize God’s activity as Creator.
- The Book of Concord treats creation as a foundational article; e.g., AC I, 2; AC XIX, 1; AC XXVII, 19-20; Apol. XXIII (XI), 7-22; LC, 1st Com., 1st Art.; SD I, 2-3, 34, 38, 41-42, 55; SD VI, 5; SD VII, 76.

Dogmatics

- Existence and Attributes of God
- The Offices of Each Person of the Holy Trinity
- Christ’s Incarnation and Two Natures
- Efficacy of God’s Word (*creatio ex nihilo*), for Creation and Redemption (“New Creation”)

Systematics

- Creation—Fall—Redemption (“New Creation”) ▪ Creation—Election—Eschatology
- Creation—Providence—Prayer ▪ Special Revelation—Natural Knowledge

Hymnody and Liturgics

- Familiar hymns—“Praise to the Lord, the Almighty, the *King of Creation...*,” “Beautiful Savior, *King of Creation...*,” etc.
- Lutheran Liturgy—at least three Creator references in each divine service: the Common Service (*Christian Worship*, pp. 18, 19, 22), the Service of Word and Sacrament (27, 31, 32), and the Service of the Word (38, 41, 42); plus at least two in the Order of Matins (47, 48), as well as at least one in the Order for Christian Marriage (141), the Order for Christian Funerals (146), the model for General Devotions (150), and the suggested prayers for before and after worship (10).
- A person *cannot* faithfully sing, pray, confess one’s sins, be baptized, get married, or have a funeral in a Lutheran church *without* proclaiming God’s work of creation.

Practical Theology

“I know you’re struggling with this issue right now, but more important than my empathy, God knows you and He knows your pain. He created you. He designed you. He knit you together in your mother’s womb. He knows exactly how you think and feel. In fact, He became just like you, incarnate in the Person of Jesus Christ. There is no pain, no confusion, no sorrow that you have, except those which He knows. Indeed, He feels them Himself. He has clothed Himself in human flesh—the very flesh that He himself had created perfect and holy, but in which you and I now all suffer as a result of sin. God made you, and He loves you. That’s why Christ became the new creation for you. The Father sent the Son to redeem you, and the Son sent the Holy Spirit to comfort you. The Holy Trinity was present at the moment of creation, bringing this world into beautiful existence, and the Holy Trinity continues to work here and now through the Word and Sacrament to restore what was lost. The Bible promises a new creation, a new heaven, a new earth, and for you a new and glorious body. God chose you even before the creation of the world to be His through faith in Christ Jesus, in whom you have, even right now, the forgiveness of all your sins and the promise of the life to come.”

Moses (as God's prophet)

Genesis 1:1-2:25¹

ca. 1400 B.C.

^{1:1}In the beginning God created the heavens and the earth. ²The earth was without form, and void; and darkness was on the face of the deep. And the Spirit of God was hovering over the face of the waters.

³Then God said, "Let there be light"; and there was light. ⁴And God saw the light, that it was good; and God divided the light from the darkness. ⁵God called the light Day, and the darkness He called Night. So the evening and the morning were the first day.

⁶Then God said, "Let there be a firmament in the midst of the waters, and let it divide the waters from the waters." ⁷Thus God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament; and it was so. ⁸And God called the firmament Heaven. So the evening and the morning were the second day.

⁹Then God said, "Let the waters under the heavens be gathered together into one place, and let the dry land appear"; and it was so. ¹⁰And God called the dry land Earth, and the gathering together of the waters He called Seas. And God saw that it was good.

¹¹Then God said, "Let the earth bring forth grass, the herb that yields seed, and the fruit tree that yields fruit according to its kind, whose seed is in itself, on the earth"; and it was so. ¹²And the earth brought forth grass, the herb that yields seed according to its kind, and the tree that yields fruit, whose seed is in itself according to its kind. And God saw that it was good. ¹³So the evening and the morning were the third day.

¹⁴Then God said, "Let there be lights in the firmament of the heavens to divide the day from the night; and let them be for signs and seasons, and for days and years; ¹⁵and let them be for lights in the firmament of the heavens to give light on the earth"; and it was so. ¹⁶Then God made two great lights: the greater light to rule the day, and the lesser light to rule the night. He made the stars also. ¹⁷God set them in the firmament of the heavens to give light on the earth, ¹⁸and to rule over the day and over the night, and to divide the light from the darkness. And God saw that it was good. ¹⁹So the evening and the morning were the fourth day.

²⁰Then God said, "Let the waters abound with an abundance of living creatures, and let birds fly above the earth across the face of the firmament of the heavens." ²¹So God created great sea creatures and every living thing that moves, with which the waters abounded, according to their kind, and every winged bird according to its kind. And God saw that it was good. ²²And God blessed them, saying, "Be fruitful and multiply, and fill the waters in the seas, and let birds multiply on the earth." ²³So the evening and the morning were the fifth day.

²⁴Then God said, "Let the earth bring forth the living creature according to its kind: cattle and creeping thing and beast of the earth, each according to its kind"; and it was so. ²⁵And God made the beast of the earth according to its kind, cattle according to its kind, and everything that creeps on the earth according to its kind. And God saw that it was good.

²⁶Then God said, "Let Us make man in Our image, according to Our likeness; let them have dominion over the fish of the sea, over the birds of the air, and over the cattle, over all the earth and over every creeping thing that creeps on the earth." ²⁷So God created man in His own image; in the image of God He created him; male and female He created them. ²⁸Then God blessed them, and God said to them, "Be fruitful and multiply; fill the earth and subdue it; have dominion over the fish of the sea, over the birds of the air, and over every living thing that moves on the earth."

²⁹And God said, "See, I have given you every herb that yields seed which is on the face of all the earth, and every tree whose fruit yields seed; to you it shall be for food. ³⁰Also, to every beast of

¹ Scripture taken from the New King James Version. Copyright © 1982 by Thomas Nelson, Inc. Used by permission. All rights reserved.

the earth, to every bird of the air, and to everything that creeps on the earth, in which there is life, I have given every green herb for food"; and it was so. ³¹Then God saw everything that He had made, and indeed it was very good. So the evening and the morning were the sixth day.

^{2:1}Thus the heavens and the earth, and all the host of them, were finished. ²And on the seventh day God ended His work which He had done, and He rested on the seventh day from all His work which He had done. ³Then God blessed the seventh day and sanctified it, because in it He rested from all His work which God had created and made.

⁴This is the history of the heavens and the earth when they were created, in the day that the LORD God made the earth and the heavens, ⁵before any plant of the field was in the earth and before any herb of the field had grown. For the LORD God had not caused it to rain on the earth, and there was no man to till the ground; ⁶but a mist went up from the earth and watered the whole face of the ground.

⁷And the LORD God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living being.

⁸The LORD God planted a garden eastward in Eden, and there He put the man whom He had formed. ⁹And out of the ground the LORD God made every tree grow that is pleasant to the sight and good for food. The tree of life was also in the midst of the garden, and the tree of the knowledge of good and evil.

¹⁰Now a river went out of Eden to water the garden, and from there it parted and became four riverheads. ¹¹The name of the first is Pishon; it is the one which skirts the whole land of Havilah, where there is gold. ¹²And the gold of that land is

good. Bdelium and the onyx stone are there. ¹³The name of the second river is Gihon; it is the one which goes around the whole land of Cush. ¹⁴The name of the third river is Hiddekel; it is the one which goes toward the east of Assyria. The fourth river is the Euphrates.

¹⁵Then the LORD God took the man and put him in the garden of Eden to tend and keep it. ¹⁶And the LORD God commanded the man, saying, "Of every tree of the garden you may freely eat; ¹⁷but of the tree of the knowledge of good and evil you shall not eat, for in the day that you eat of it you shall surely die."

¹⁸And the LORD God said, "It is not good that man should be alone; I will make him a helper comparable to him." ¹⁹Out of the ground the LORD God formed every beast of the field and every bird of the air, and brought them to Adam to see what he would call them. And whatever Adam called each living creature, that was its name. ²⁰So Adam gave names to all cattle, to the birds of the air, and to every beast of the field. But for Adam there was not found a helper comparable to him.

²¹And the LORD God caused a deep sleep to fall on Adam, and he slept; and He took one of his ribs, and closed up the flesh in its place. ²²Then the rib which the LORD God had taken from man He made into a woman, and He brought her to the man.

²³And Adam said: "This is now bone of my bones and flesh of my flesh; she shall be called Woman, because she was taken out of Man."

²⁴Therefore a man shall leave his father and mother and be joined to his wife, and they shall become one flesh.

²⁵And they were both naked, the man and his wife, and were not ashamed.

Job

Job 38:1-41²

ca. 1500 B.C. (?)

¹Then the LORD answered Job out of the whirlwind, and said:
²Who is this who darkens counsel
 By words without knowledge?
³Now prepare yourself like a man;
 I will question you, and you shall answer Me.
⁴Where were you when I laid the foundations of the earth?
 Tell Me, if you have understanding.
⁵Who determined its measurements?
 Surely you know!
 Or who stretched the line upon it?
⁶To what were its foundations fastened?
 Or who laid its cornerstone,
⁷When the morning stars sang together,
 And all the sons of God shouted for joy?
⁸Or who shut in the sea with doors,
 When it burst forth and issued from the womb;
⁹When I made the clouds its garment,
 And thick darkness its swaddling band;
¹⁰When I fixed My limit for it,
 And set bars and doors;
¹¹When I said,
 'This far you may come, but no farther,
 And here your proud waves must stop!'
¹²Have you commanded the morning since your days began,
 And caused the dawn to know its place,
¹³That it might take hold of the ends of the earth,
 And the wicked be shaken out of it?
¹⁴It takes on form like clay under a seal,
 And stands out like a garment.
¹⁵From the wicked their light is withheld,
 And the upraised arm is broken.
¹⁶Have you entered the springs of the sea?
 Or have you walked in search of the depths?
¹⁷Have the gates of death been revealed to you?
 Or have you seen the doors of the shadow of death?
¹⁸Have you comprehended the breadth of the earth?
 Tell Me, if you know all this.

¹⁹Where is the way to the dwelling of light?
 And darkness, where is its place,
²⁰That you may take it to its territory,
 That you may know the paths to its home?
²¹Do you know it, because you were born then,
 Or because the number of your days is great?
²²Have you entered the treasury of snow,
 Or have you seen the treasury of hail,
²³Which I have reserved for the time of trouble,
 For the day of battle and war?
²⁴By what way is light diffused,
 Or the east wind scattered over the earth?
²⁵Who has divided a channel for the overflowing water,
 Or a path for the thunderbolt,
²⁶To cause it to rain on a land where there is no one,
 A wilderness in which there is no man;
²⁷To satisfy the desolate waste,
 And cause to spring forth the growth of tender grass?
²⁸Has the rain a father?
 Or who has begotten the drops of dew?
²⁹From whose womb comes the ice?
 And the frost of heaven, who gives it birth?
³⁰The waters harden like stone,
 And the surface of the deep is frozen.
³¹Can you bind the cluster of the Pleiades,
 Or loose the belt of Orion?
³²Can you bring out Mazzaroth in its season?
 Or can you guide the Great Bear with its cubs?
³³Do you know the ordinances of the heavens?
 Can you set their dominion over the earth?
³⁴Can you lift up your voice to the clouds,
 That an abundance of water may cover you?
³⁵Can you send out lightnings, that they may go,
 And say to you, "Here we are!"?
³⁶Who has put wisdom in the mind?
 Or who has given understanding to the heart?
³⁷Who can number the clouds by wisdom?
 Or who can pour out the bottles of heaven,
³⁸When the dust hardens in clumps,
 And the clods cling together?
³⁹Can you hunt the prey for the lion,
 Or satisfy the appetite of the young lions,
⁴⁰When they crouch in their dens,
 Or lurk in their lairs to lie in wait?
⁴¹Who provides food for the raven,
 When its young ones cry to God,
 And wander about for lack of food?

² Scripture taken from the New King James Version.
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All Praise to God for This New Day

Adapted from Genesis 1:1-2:4

RUNG

Ryan C. MacPherson (1974-)

H. Rung, 1807-71

1. In the be - gin - ning was the Word; He
 2. God made the sky to se - pa - rate Wa -
 3. Wa - ter from land He then re - moved: In
 4. God ga - thered light and called it sun; Its

spoke, all was cre - a - ted. "Let there be light!" and
 ters a - bove from be - low. Where high - er wa - ters
 soil the Lord made plants grow. From seed to seed they
 beams il - lu - mine our day. Light's sof - ter glow He

there was light From dark - ness se - pa - ra - ted. First
 then did swell An - gels and God a - lone know. First
 re - pro - duce: Bless - ings of our God still grow. First
 saved for night; The moon and stars in sea - son sway. First

came the eve, and then the morn: Al - le - lu ia! Al -
 came the eve, and then the morn: Al - le - lu ia! Al -
 came the eve, and then the morn: Al - le - lu ia! Al -
 came the eve, and then the morn: Al - le - lu ia! Al -



5. God filled the sea with fish diverse
And the air above with birds,
Each kind to reproduce its kind
For generations unheard.
First came the eve, and then the morn:
Alleluia! Alleluia!
All praise to God on the fifth day!

7. "In Our image let Us make man,"
Husband and wife God made them.
With body, soul, together whole,
Filled with grace to live for Him.
First came the eve, and then the morn:
Alleluia! Alleluia!
All praise to God on the sixth day!

6. God said of all, "Yes, it is good,"
And made on land new species
Of animals both great and small
To feed on earth's increases.
First came the eve, and then the morn:
Alleluia! Alleluia!
All praise to God on the sixth day!

8. In these six days did God make all
The earth and all its creatures.
Though resting each day thereafter
He watches, cares, and treasures.
First came the eve, and then the morn:
Alleluia! Alleluia!
All praise to God, the seventh day!

9. All very good, yes very good
Created by our good God
To glorify His holy name
And rest in trust where He hath trod—
From Christmas Eve through Easter Morn:
Renewed creation, God with us!
All praise to God for this new day!

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Where Does Science Fit in Luther’s *Small Catechism*?

The following chart outlines how one might begin to apply all six chief parts of the Christian faith—as summarized in Luther’s *Small Catechism*—to challenging questions that arise concerning the nature of science and its relation to Christian living.

Catechism Section	Significance for a Christian Understanding of Science
First Commandment	Fear, love, and trust in God more than in science.
Second Commandment & First Petition	Do not carelessly link God’s name to scientific theories, as if, for example, Newton’s Laws are necessarily God’s Laws.
Third Commandment	Turn toward the preaching of the Word, not the teaching of science, to be drawn closer to Christ.
Fourth Commandment	Show respect to scientific researchers, educators, and policy makers as people whom God has placed over you for your blessing, even though some of them dishonor God.
Fifth Commandment	Use science to care for, not to harm, your neighbor.
Sixth Commandment	Recognize that reproductive and contraceptive technologies can weaken marriages; use extreme caution when deciding whether any of them may be beneficially used.
Seventh Commandment	Respect the intellectual property rights of others, secure proper permissions, and use proper citations.
Eighth Commandment	Do not ridicule those who misuse science to attack Christianity, but rather speak the truth patiently, lovingly.
First Article & First Commandment	Recognize the true God as the Creator of all things; trust that He has accurately described this work for you in Scripture.
First Article	Reason and observation are gifts from God.
First Article & Fourth Petition	Be thankful and confident that God uses His creation to provide for our daily needs; recognize our “laws of nature” as human attempts to understand how God does this.
Second Article	Marvel at the Incarnation: God became part of His creation in order to redeem His fallen creatures. Astonishing!
Third Article	Human reason has limits; faith, not reason, is how the soul clings to God’s salvation promises.
Third Article & Ten Commandments (3rd Use of the Law)	The Holy Spirit’s work of sanctification empowers Christians to show love to God and to one’s neighbors in daily life, including in a scientific career.
The Lord’s Prayer	Nature is neither a chaotic accident, nor a deterministic scheme of fate; rather, nature is God’s creation, and God the Creator invites us to pray to Him to request that he use His creation to provide us with daily bread.
Baptism & Communion	Science does not understand what God’s Word does with water, bread, and wine; though reason cannot comprehend how it is so, God uses these means to distribute the forgiveness of sins, life, and salvation.
Confession & Absolution	Remember that Christ gave His church authority to warn the impenitent with condemnation and to comfort the penitent with forgiveness, and that Christ gave His church the Word and the Sacraments for doing so; both the Church’s mission and the Church’s means are distinct from science.

**Ronald Buelow and
Ryan MacPherson**

A Lutheran View of Science³

2004

In April 2003, Lutheran educators gathered at Martin Luther College, New Ulm, Minn., for a symposium on science. Dr. Ryan MacPherson delivered the keynote address. Dr. Ronald Buelow was one of the panel respondents. Buelow and MacPherson presented different interpretations of science, which attracted much interest from the audience. In this article, the two educators present their shared understanding of a Lutheran approach to science—science understood in two different senses. These distinctions may serve as a guide for teaching a proper understanding of the subject.

Lutherans distinguish carefully between two senses of “science.” On the one hand, science refers to true knowledge. (“Science” comes from the Latin verb *scire*, “to know.”) Science must, therefore, agree with Scripture, where God reveals the truth about himself and the world that he created. Because of this agreement, we can speak of science as “divine.” On the other hand, the word “science” can refer to human behavior. Science is what people do and think when they wear lab coats, conduct experiments, and interpret God’s creation. This human science differs from divine science, since scientists’ conclusions always are tentative and often are proven false by the scientists of later generations. To be clear about which sense of “science” is meant, the remainder of this article will specify “divine” or “human” science.

Lutherans value the blessing of human science. God created humans with reason and senses. We can observe God’s world and try to figure out how it works. The result is human science, with its laws of nature that enable scientists to make weather forecasts that aid

travelers, to perform surgeries that help people with diseased or injured organs, and to build bridges that can support the weight of heavy trucks. In short, human science is one of many ways that God answers the Fourth Petition of the Lord’s Prayer: “Give us this day our daily bread,” which includes everything that we need for this body and life.

Lutherans recognize the limits of human science. As wonderful as human science is, it also has limits. Human science is limited by the human mind itself, which always is humbled by the incomprehensibility of God’s mind (Isaiah 55:8,9). Human science also is limited by original sin, which clouds the thinking of all scientists, Christian or not. Over the centuries, many versions of the scientific method have been proposed. Some have worked better than others, but in all cases the conclusions reached by human science are always subject to revision. Newton’s laws of gravitation had to be dramatically revised in light of Einstein’s work. Biologists already have found it necessary to modify Darwin’s theory of evolution. Nothing in human science remains the same for very long.

Lutherans confess the certainty of divine science. The knowledge of God revealed in the Scriptures is 100 percent certain. Sometimes this certainty enables Christians to determine which theories of human science are false. For example, the Bible’s teachings on creation show that Darwin’s theory of evolution to explain origins must be false. The Bible does not, however, enable Christians to know for sure if a particular theory of human science is true. For example, the Bible makes no claims as to whether people should prefer Newton’s or Einstein’s version of the theory of gravity. In fact, from a scriptural perspective one must remain open to the possibility that neither one of these is correct.

Divine science concerns itself primarily with salvation issues. Though Christians cannot say with certainty whether Einstein’s human science is true, they can confess the eternal truths of divine science, such as “He who believes and is baptized shall be saved” (Mark 16:16).

Lutherans respect the vocations of scientists. As noted above, God uses scientists—both believers and unbelievers—to bless all people with the things included in “daily bread.” When

³ This article was published in the January 2004 edition of *Forward in Christ*. © 2004, Northwestern Publishing House. Used by permission of the authors.

Christians pursue careers in human science, they have a special opportunity to glorify God and show love to their neighbor by using God’s gift of human reason to the best of their abilities. Notable Lutheran scientists include Johannes Kepler (1571–1630), who discovered that planets orbit the sun in elliptical paths; Carolus Linnaeus (1707–1778), who invented a new way of cataloguing plant species; and the Lutheran pastor John Bachman (1790–1874), who became his generation’s leading expert on four-footed animals in America. More recently, a Lutheran physiologist named J. Robert Cade invented a beverage designed to prevent athletes from becoming dehydrated—Gatorade.

God could have used other people to accomplish these great things, but in choosing Christians, he provided them with opportunities “to do good works, which God prepared in advance for us to do” (Ephesians 2:10). In other words, a Christian’s scientific career is a special calling in sanctified living.

Lutherans bring a unique contribution to science education. All science educators have the opportunity to serve their neighbors (both students and society in general) by teaching about human science and its benefits. Science educators in Christian schools have the additional responsibility and privilege of teaching all science from a Christian perspective. Lutheran teachers and students praise God for the incredible design and beauty that human science has revealed in God’s creation—design and beauty that also are proclaimed as divine science in the Scriptures.

Lutherans also recognize that human science, in its attempts to discover God’s workings in nature, sometimes misidentifies God’s designs. Lutherans teach human science as human science, and divine science as divine science, recognizing that the limits of human science often prevent the two from matching up perfectly.

Lutherans proclaim divine science, without trying to support it with arguments from human science. Lutherans believe that human science can never make divine science more accurate or more convincing. The Holy Spirit brings people to a knowledge of divine science by planting faith in their hearts through the Word and the sacraments. Human science, which relies on human reason, cannot create or strengthen

anyone’s trust in God. Therefore, it would be wrong to use human science as a “proof” of divine science.

Lutherans are careful, for example, not to allow arguments from creation science to take the place of the plain words of Scripture. Lutherans know that when the basic conclusions of creation science agree with Scripture, they must be correct. But Lutherans also keep in mind that the detailed arguments of creation science are drawn from human science and go beyond the plain words of Scripture. Lutherans do not rest their faith in the arguments of any human science, not even creation science. Faith must look to the Word alone, which is to say, to divine science alone.

“Now faith is being sure of what we hope for and certain of what we do not see. ... By faith we understand that the universe was formed at God’s command, so that what is seen was not made out of what was visible” (Hebrews 11:1,3).

Outline: Perspective II

II. Creation as Revealed Dimly by the Natural Sciences	Pages
<ul style="list-style-type: none"> A. One-Sentence Summary..... B. How Science Normally Works <ul style="list-style-type: none"> 1. "The Scientific Method" 2. Scientific Methods <ul style="list-style-type: none"> a. Deductive b. Inductive c. Hypothetico-Deductive d. Hypothetical-Structural Explanation 3. How Science Works, according to Thomas Kuhn 4. Kuhn's Epistemic Virtues..... 5. Outline of the Galileo Controversy..... C. Intelligent Design Theory <ul style="list-style-type: none"> 1. Historical Overview of the Intelligent Design Movement 2. Three Interpretations of Genesis 1 D. Discussion 	<ul style="list-style-type: none"> 15 16 18 19 20 22

A One-Sentence Summary of Human Origins, #2: From the Perspective of Natural Science

Who?	
Did What?	
To/For Whom?	
When?	
Where?	
How?	
Why?	
A single informative, grammatical, and long summary sentence.	

Natural Science draws upon Natural Revelation, which includes:

- the testimony of the human conscience (and hence, natural law ethics)
- the testimony of human reason (deductive and inductive logic, etc.)
- the testimony of human perceptual faculties (sight, hearing, etc.)

Examples of Science Built upon Natural Revelation (what we might call "Natural Science"):

- the Scientific Revolution of the seventeenth century (e.g., Kepler, Galileo, Newton, Boyle)
- Intelligent Design Theory

How Science Normally Works

"Paradigm" concepts adapted from Thomas Kuhn, *The Structure of Scientific Revolutions*, 3d ed. (Chicago: University of Chicago Press, 1996).

1. Scientists working in a mature research field conduct what Kuhn calls **normal science**.
2. A **paradigm** provides **normal science** with its concepts, terminology, puzzling questions, procedures for pursuing those questions, and ranges of expected outcomes. In other words, the **paradigm** consists of **assumptions** that ensure every **observation** is **theory-laden**. Current examples of **paradigms** and the questions pursued in **normal science**:

Astronomy	Physics	Chemistry	Biology
Big Bang Theory	Relativity Theory	Atomic Theory	Evolutionary Theory
Calculating the initial conditions of the universe and how the laws of nature evolved during the first few moments of time.	Pondering the implications of Relativity Theory with respect to black holes, multi-dimensional universes, etc.	Calculating atomic masses more precisely. Discovering subatomic particles (quarks). Synthesizing new elements.	Searching for "missing links." Sorting out the sequence and branching of evolutionary genealogies.

3. The **paradigm** also narrows the focus of the scientists who conduct **normal science**. This tunnel-visioning effect causes them to dismiss some data as irrelevant and reject some kinds of alternative explanations as implausible. Currently rejected theories:

Astronomy	Physics	Chemistry	Biology
Creation <i>ex nihilo</i>	Aristotelian Gravity (Heaviness) and Levity	Subtle Fluids (Phlogiston, Caloric)	Special Creation Intelligent Design

4. The **paradigm**, since it narrows one's expectations so much, also necessitates the recognition of **anomalies**, or puzzling information (whether theoretical or observational) that seemingly cannot be brought into conformity with the paradigm.

Astronomy	Physics	Chemistry	Biology
What preceded the Big Bang? How did the original matter and energy get there? What determined its properties?	How can our notions of "antigravity" and "antimatter" be harmonized with other scientific disciplines? What should we do about the contradictions between Newton and Einstein?	If quantum theory suggests random states of matter and energy, why do we observe so much order at the macroscopic level?	Is natural selection a sufficient explanation? So few missing links have been found. Some scientists argue for gradual evolution, whereas others theorize "punctuated equilibrium."

5. When **anomalies** become sufficiently numerous and significantly troubling, **normal science** falls apart into a **crisis**. But even amid a **crisis**, scientists will continue to cling to the old

paradigm since getting rid of that paradigm would mean they would have to stop doing **normal science**.

6. If, however, a **new paradigm** arises that can make sense of the **anomalies** that riddled the **old paradigm**, then a **scientific revolution** may occur, as the **new paradigm** takes the place of the **old paradigm**.

Ptolemaic Astronomy (<i>ca.</i> A.D. 170)	Copernican Astronomy (A.D. 1543)
The Earth is the motionless center of the universe. The Sun and Moon are “planets” (Greek: “wanderers”) much like Mercury, Venus, etc.	Only the Moon goes around the Earth. The Earth goes around the Sun, as do Mercury, Venus, etc.
Evidence: Earth-centered geometrical modeling enables predictions of planetary motions with precise accuracy. Obviously, the earth is motionless, or birds couldn’t fly, etc.	Evidence: Sun-centered geometrical modeling enables predictions of planetary motions with precise accuracy. <i>Later:</i> Newton’s gravitational theory calls for a sun-centered system.
Anomalies: The models seem too complicated and sometimes do not work perfectly. In particular, the Moon would have to double in apparent size, since Ptolemy’s model has it sometimes very close and sometimes very far from the earth.	Anomalies: The models seem too complicated and sometimes do not work perfectly. In particular, Kepler had to wrestle for quite sometime with the orbit of Mars before he could produce a good sun-centered orbit. What about parallax, too?

7. Even when a **new paradigm** wins out through a process of **scientific revolution**, it is not the case that the old one was proven false and the new one was proven true. Neither **paradigm** can be objectively benchmarked against nature, since all **observations** are **theory-laden**. Nor can **two rival paradigms** be objectively compared to one another, since they are **incommensurable** (one cannot readily “translate” between them).

Core Concepts	Newton, <i>ca.</i> 1700	Einstein, <i>ca.</i> 1900
“Mass”	Constant	Increases with Velocity
“Length”	Constant	Shrinks with Velocity
“Time”	Constant	Slows with Velocity
“Velocity”	Absolute	Always Relative

8. **Paradigm choice** results not so much from the “scientific method” taught in high school textbooks as from a weighing of **epistemic virtues** (see next page) and various **sociological factors**, such as when the champions of the **old paradigm** retire and when a critical mass of bold young scientists gain enough influence for their **new paradigm**.
9. The **new paradigm** re-defines **normal science** for the post-revolution generation of “science students, [who] accept theories on the authority of teacher and text, not because of evidence” (p. 80). Textbook writers construct a history of the most recent **scientific revolution** that makes the **old paradigm** seem woefully inadequate and the **new paradigm** seem clearly superior. As for any anomalies in the **new paradigm**, “failure to achieve a solution discredits only the scientist and not the theory” (p. 80). That’s **normal science**.

The Epistemic Virtues of Science

Adapted from Thomas Kuhn, “Postscript” to *The Structure of Scientific Revolutions*, 3d ed. (Chicago: University of Chicago Press, 1996), 185.

Kuhn argued that a shift from one scientific paradigm to another does not occur simply because “the scientific method” results in obvious conclusions that lead the scientific community to exchange an old theory for a new and improved one. Rather, a choice of paradigms depends upon numerous factors, some sociological and others cognitive. Kuhn’s critics then accused him of promoting relativism, since his philosophy of science seemed to suggest that there are no objective reasons for preferring one theory over another. To this charge, Kuhn has replied that the scientific community tends to adhere to the following epistemic virtues, or guiding principles for seeking truth. Science, as distinct from poetry, drama, politics, or other human pursuits, characteristically limits the range of possible paradigm preferences by adhering to these criteria:

- **quantitative accuracy** for:
 - description
 - prediction
 - retrodiction (e.g., calculating back toward a known previous event)
- **consistency**
 - internal: logical validity
 - external: coherence with other theories
- **explanatory power**
 - offering a causal account
 - proposing a cause that can explain data even beyond the scope of the theory’s original formulation
- **simplicity**
 - Occam’s razor
 - unifying diverse phenomena with one or a few general laws
- **fertility**
 - capable of producing novel insights
 - acting as a heuristic for developing new theories
- **social utility**
 - Francis Bacon (ca. 1600): “knowledge is power”
 - e.g., science as a source of medical breakthroughs

Ryan MacPherson’s definition of modern science, informed by Kuhn and other scholars: “A professional inquiry into the workings of nature (including human nature), offering naturalistic, hypothetical explanations for observed and hypothetical phenomena, and testing these explanations by experimental methods in accordance with the explicit and implicit protocol of a self-defining community of expertise.”

Outline of the Galileo Controversy

- I. Not Simply "Science vs. Religion"
 - A. Galileo thought he had both science and religion on his side.
 - B. The Catholic Church thought it had both science and religion on its side.
 - C. Better to say: Galileo's Science/Religion combination vs. Bellarmine's Science/Religion combination.
- II. The Issues:
 - A. Is Scripture true?
 1. Cardinal Bellarmine said, "yes."
 2. Galileo said, "yes."
 - B. Must Galileo provide a demonstrative proof before reinterpreting Scripture to accept Copernicanism?
 1. Cardinal Bellarmine said, "Yes, he must, but no, he hasn't."
 2. Galileo said, "Yes, I must, and yes, I have."
 3. They disagreed about scientific methodology and the criteria for demonstrative proof.
 - C. Does Holy Scripture apply to this controversy?
 1. Cardinal Bellarmine said, "yes, all truths of Scripture apply."
 2. Galileo said, "no, only spiritual truths have to be preserved; physical truths can be revised by science."
 - D. Social Context: Counter-Reformation insecurity of the Roman Catholic Church (Galileo, a mere mathematician, was challenging the Pope?! In the wake of Luther's reform, this could not be tolerated.)

Adapted from Ernan McMullin, "Galileo on Science and Scripture," chap. 8 in *The Cambridge Companion to Galileo*, edited by Peter Machamer (Cambridge: Cambridge University Press, 1998), 271-347.

The Scholarly Consensus:

- "The Copernican system achieved no greater predictive accuracy than the Ptolemaic system." Historian of Science Michael J. Crowe, *Theories of the World from Antiquity to the Copernican Revolution*, 2d ed. (Mineola, NY: Dover, 2001), 87.
- "Copernicus gave preference to man's delight in abstract theory, at the price of rejecting the evidence of our senses, which present us with the irresistible fact of the sun, the moon, and the stars rising daily in the east to travel across the sky towards their setting in the west." Philosopher Michael Polanyi, as quoted in Crowe, 195.
- Einstein's Relativity Theory "upsets the Copernican world view. It is meaningless to speak of a difference in truth claims of the theories of Copernicus and Ptolemy.... What had been considered the greatest discovery of western science compared to antiquity, is now denied its claim to truth." Physicist-Philosopher Hans Reichenbach, *The Philosophy of Space and Time*, trans. Maria Reichenbach and John Freund, with introductory remarks by Rudolf Carnap (German ed., 1928; trans., New York: Dover, 1958), 217.
- "Ptolemy and Copernicus are equally right." Nobel-Prize Physicist Max Born, *Einstein's Theory of Relativity*, rev. ed., prepared with the collaboration of Günther Leibfried and Walter Biem (Germ. orig., 1920; trans., New York: Dover, 1962), 345.

A Distortion in Favor of Darwinism:

"The Church held that his [Galileo's] views were dangerous to the faith. As a result of the steady accumulation of evidence, the theological interpretation of celestial movements gave way to the naturalistic explanation, and it is now accepted that night and day are the consequences of the rotation of the earth on its axis. ... Like biological evolution, the theory of heliocentrism brought order and new understanding to an otherwise chaotic and confusing aspect of nature." National Academy of Sciences, *Teaching about Evolution and the Nature of Science* (Washington, DC: National Academy Press, 1998), 29.

Historical Overview of the Intelligent Design Movement

(Parts II–IV are adapted from Thomas Woodward, *Doubts about Darwin: A History of Intelligent Design*, foreword by Phillip E. Johnson [Grand Rapids, MI: Baker Books, 2003].)

PART I: Historical Precedents to Today’s Intelligent Design Movement

- 360 B.C. Plato, *Timaeus*: The Divine Craftsman “put intelligence in soul and soul in body,” creating the four elements and the bodies composed of them.
- 360 B.C. Aristotle, *Physics*: Nature has “final causes,” imbuing it with purpose.
- A.D. 170 Galen, *On the Natural Faculties*: Galen objects to his opponents, who scoff at his teleological understanding of anatomy and physiology.
- 1620 Francis Bacon, *Novum Organon*: For science to progress, we must abandon Aristotle’s formal and final causes and pursue a more strictly empirical study of nature.
- 1689 Isaac Newton, *Principia*, Book III, General Scholium: “This most beautiful system of the sun, planets, and comets, could only proceed from the counsel and dominion of an intelligent and powerful Being.”
- 1628 William Harvey, *Anatomical Dissertation*: “Blood is driven round a circuit ... and that in sum it constitutes the whole reason for that heart’s pulsatile movement.” (Final Causation)
- 1664 Robert Boyle, *Disquisition about Final Causes of Natural Things*: Boyle cautions against being overconfident that human science can discover God’s purposes in nature.
- 1802 Willaim Paley, *Natural Theology*: Just as a watch cannot exist except as a result of the intentional work of a watchmaker, so also living organisms must have had a Creator.
- 1844 [Robert Chambers], *Vestiges of the Natural History of Creation*: An intelligent deity programmed nature with a “law of development” that accounts for the evolutionary origins of the solar system, the first living cell, and all living species, all by a wise design.
- 1859 Charles Darwin, *Origin of Species*, chap. 14: The apparent design in nature is actually accidental, resulting from natural selection. Nevertheless, “There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one.” (He added “by the Creator” in the second edition, trying to appease some readers.)
- 1926 Albert Einstein objected to the Niels Bohr’s interpretation of quantum mechanics, since it held that there is no determinant reality at the subatomic level, but rather that subatomic states “exist” only in a probabilistic sense. Einstein retorted, “God does not play dice.”

PART II: Scientific Confidence in Evolution

- 1859 Darwin admitted, in *Origin of Species*, that his theory required the amazing idea that natural selection accounts for the origin of something as complex as the eye, without intelligent design.
- 1953 Harold Urey and Stanley Miller chemically synthesized amino acids (the building blocks of proteins) from a mixture of gases in a spark chamber, suggesting that lightening bolts striking a primordial sea may have prompted nonliving matter to evolve into simple organisms.
- 1953 James Watson and Francis Crick proposed a double-helix model for DNA, suggesting the framework for a mechanical-chemical process by which genes could be replicated.
- 1959 Julian Huxley, grandson of T. H. Huxley (Darwin’s leading advocate in 1859), proclaimed at the centennial celebration of *Origin of Species* that evolution accounted for everything, “from atoms and stars to fish and flowers, from fish and flowers to human societies and values—indeed ... all reality is a single process of evolution” (quoted in Woodward, 33).

PART III: An Erosion of Confidence

- 1962 Thomas Kuhn’s *Structure of Scientific Revolutions* cast doubt on scientific claims to certainty, by arguing that even the most widely accepted theories rest on a cluster of assumptions (paradigm).
- 1966 Participants in the Wistar Symposium (Univ. of Penn.) discussed concerns about the apparently low mathematical probability that random mutations could account for organic modifications.
- 1969 The Alpbach Symposium, sponsored by British journalist Arthur Koestler, brought to light further doubts concerning the mathematical likelihood of a Darwinian evolutionary history.
- 1970s Niles Eldridge and Stephen Jay Gould admitted that the fossil record revealed a great amount of stasis, and lacked intermediary forms (“missing links”); they proposed a theory of *punctuated equilibria*—evolution occurring in rapid spurts too brief to leave any signs in the fossil record.
- 1981 Fred Hoyle argued that the odds of a Darwin-Urey-Miller origin of life were 1 in $10^{40,000}$ —which he equated with the likelihood that a tornado passing through a junkyard would assemble a Boeing 747; Hoyle, an agnostic, attributed the earth’s first living cells to seeds deposited by aliens. (Francis Crick, a co-discoverer of the double-helix structure of DNA, shares Hoyle’s theory of alien seeds.)

PART IV: The Birth of Intelligent Design

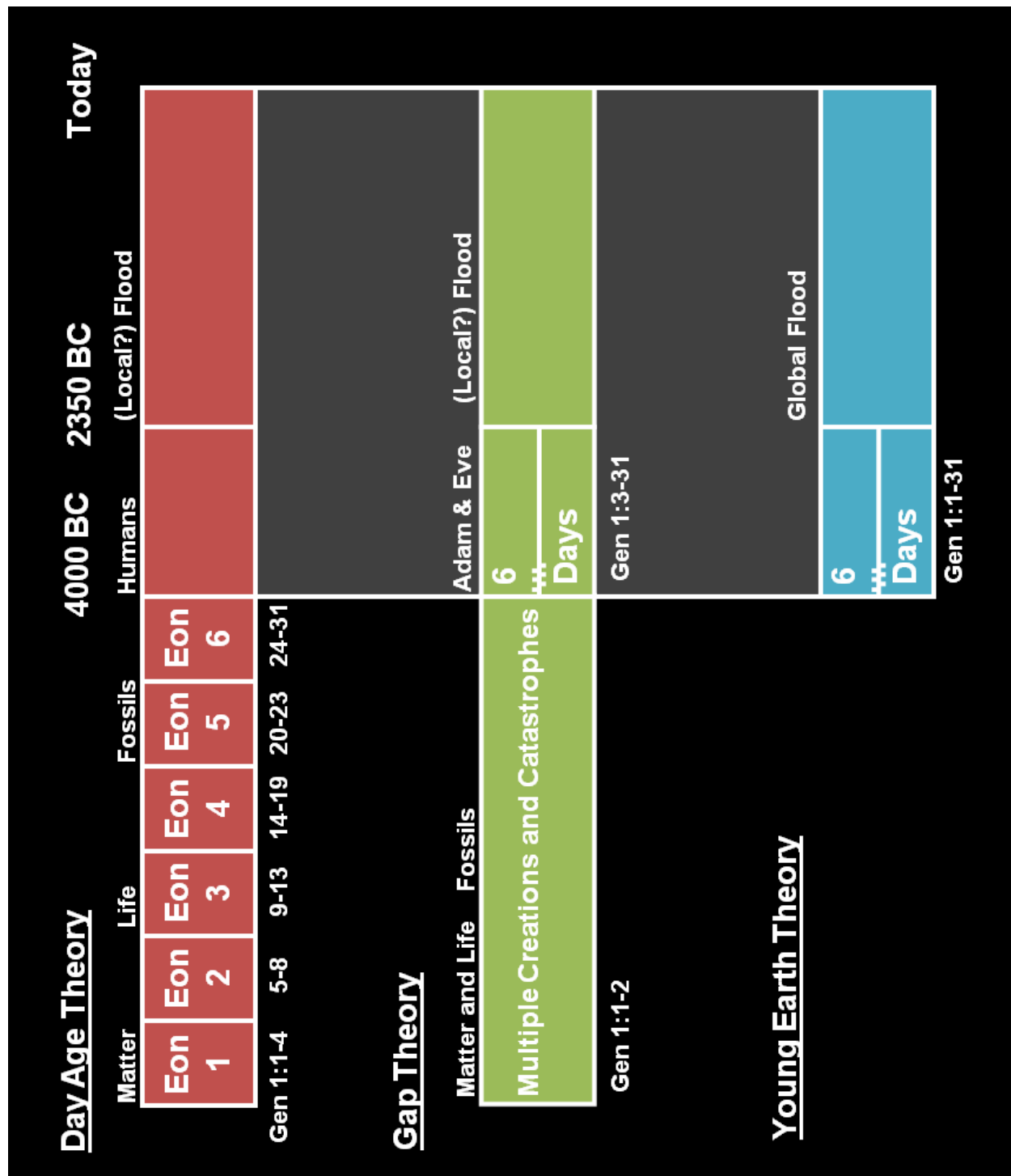
- 1985 **Michael Denton**, *Evolution: A Theory in Crisis*, argued from an **agnostic** perspective that macroevolution is unlikely to have occurred by natural selection; he does not deny the animal ancestry of humans, but rather questions whether Darwinism adequately explains it.
- 1987 **Phillip Johnson**, *Darwin on Trial*, argued from an attorney’s perspective that if science weighed evidence the way a court does, Darwinism would never be accepted. Johnson, a Presbyterian, was comfortable with old-earth geology and even willing to allow for theistically orchestrated organic evolution, though he preferred divine creation.
- 1989 **Charles Thaxton**, *Of Pandas and People*, provided a public high school supplement to existing textbooks, addressing both chemical evolution (the supposed origin of life) and organic macroevolution from the intelligent design perspective.
- 1996 **Michael Behe**, *Darwin’s Black Box*, provided a positive alternative to Darwinism, suggesting a notion of “**irreducible complexity**” that required an intelligent-design explanation rather than a natural-selection interpretation. (Behe is Roman Catholic who accepts old-earth geology and the theory of humans’ animal ancestry, but denies that natural selection adequately explains it.)
- 1996 The **Mere Creation Conference** (Los Angeles), resulting in the publication of *Mere Creation* (1998), gave a united public voice to the ID leaders, including a new arrival, William Demski. *Mere Creation* cited cosmic evolution (from the Big Bang to the present) as a key example of an event too complicated to be explained without appeal to intelligent design.
- 1998 **William Demski**, *The Design Inference*, sought to provide scientific criteria for identifying when intelligent design should or should not be invoked.
- 2000 **Jonathan Wells**, *Icons of Evolution*, debunked several textbook examples of evidence that supposedly supported evolutionary theory, revealing them to be either fabrications, simplifications, or exaggerations.
- 2001 The *New York Times* and *Los Angeles Times* ran prominent articles declaring that ID offers challenges to evolutionary theory that are independent of the creation science movement and thus cannot be dismissed as religious fundamentalism dressed up as science.

PART V: Recent Controversies about the Intelligent Design Movement (ca. 2000 to present)

- Gallup Polls: 45% of Americans believe in a “recent creation”; 45% believe in “God-guided evolution,” and 10% believe in naturalistic evolution, with no intelligent design. Meanwhile, 95% of the members of the National Academy of Sciences do not believe in God (agnostic or atheist).
- Policy makers in Kansas, Pennsylvania, and other areas of the nation debate educational standards pertaining to Darwinism and ID.

Three Interpretations of Genesis 1

(available at www.ryanmacpherson.com; search for "Creation Theories")



By the time Darwin published *Origin of Species* in 1859, the young earth theory already had been marginalized by the uniformitarian geology of Charles Lyell (*Principles of Geology*, vol. 1, 1830). Many Christians, both geologists and theologians (and some who were both), had adopted either the "day-age" or "gap" compromise.

Outline: Perspective III

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A One-Sentence Summary of Human Origins, #3: From the Perspective of Scientific Naturalism

Who?	
Did What?	
To/For Whom?	
When?	
Where?	
How?	
Why?	
A single informative, grammatical, and long summary sentence.	

Scientific Naturalism assumes:

1. The supernatural is irrelevant, because of a prior commitment to either:
 - a. *metaphysical naturalism* (only the natural exists), based upon either:
 - i. *atheism* (God does not exist); or,
 - ii. *agnosticism* (we can never know whether God exists or not); or,
 - b. *methodological naturalism* (even if there is a supernatural, we ought not base our scientific theories on appeals to the supernatural).
2. Therefore, the scientific method must limit itself to *natural* events explained by *natural* causes; no references to supernatural causes or events are admissible as "science."
3. Insofar as science is to be a socially privileged epistemology, scientific naturalism (sometimes called "scientism") thus marginalizes religious belief from the public square.

Examples of Science *Built* upon Scientific Naturalism (even if others added God later):

- Darwinian Evolution
- Freudian Psychology
- Big Bang Theory
- Marxist Sociology

Modern Ideas concerning Organic Evolution

1735	Linnaeus, <i>Systema Naturae</i>	Catalogue of permanently fixed, natural species.
1749–1779	Buffon, <i>Histoire naturelle</i>	Contemplated a materialist account for the origin of life and the evolution of new organic species.
1801	Lamarck, <i>Système des animaux sans vertèbres</i>	Suggested that a historical transformation from simple to complex would explain why there are different kinds of invertebrate species.
1815	Lamarck, <i>Histoire naturelle des animaux sans vertèbres</i>	Introduced four laws of organic evolution: <ol style="list-style-type: none"> 1. Living organisms have a vital force that empowers organic structures to grow. 2. New organs can arise from needs that make themselves continually felt and new movements that arise from those needs. 3. The use of organs reinforces their development. 4. Any new organs thus acquired may be inherited, thereby producing an enduring change in the species.
1844	Chambers, <i>Vestiges of the Natural History of Creation</i>	First full-scale work of evolution published in English—very widely read in Britain and America. Included three phases of evolution, all pre-programmed into a “law of development” by the Deity who created the gaseous nebula: <ol style="list-style-type: none"> 1. Nebular Hypothesis: A primordial glowing ball of gas (nebula) congealed into stars and planets, which formed solar systems—all due the laws of gravitation and development. 2. Geological Evolution: As the earth cooled from a glowing fireball, it gradually formed into land masses and oceans, and the atmosphere became conducive to life. 3. Organic Evolution: Nonliving materials spontaneously generated into microscopic living organisms, which in turn evolved into higher species, all the way up to human beings. “Prolonged gestation” was the mechanism of species change.
1859	Darwin, <i>Origin of Species</i>	Argued for biological evolution by natural selection: <ol style="list-style-type: none"> 1. Scientists have difficulty distinguishing one species from the next. It seems that Linnaeus’s categories blur together. 2. Heritable variations come into existence by chance. 3. As populations increase, not all individuals are able to survive, since the resources of the environment are limited. 4. Some heritable variations will promote more successful survival (i.e., living and bearing offspring) than others. 5. Thus, over time the population will shift toward individuals that nature selects for possessing favorable heritable variations. 6. At first, the result is merely a new variety within a species. But what is a species? At some point, the changes accumulate and a new species results, even a new genus, family, order, etc.
1871	Darwin, <i>Descent of Man</i>	Extended the <i>Origin</i> to argue that humans evolved from ape-like ancestors. Supplemented natural selection with sexual selection: For example, a more colorful female attracts more mates, and a more domineering male acquires more mates, so these differences between the sexes are encouraged by evolution, thus shaping the future of the species by the ways males and females select one another. To a degree, species determine their own evolution.

Standard Scientific Arguments against Evolution

Adapted from Peter J. Bowler, *The Eclipse of Darwinism: Anti-Darwinian Evolution Theories in the Decades around 1900* (Baltimore: The Johns Hopkins University Press, 1992), 23-26.

Bowler documents that all six of these scientific objections to Darwinian evolution had been voiced by the year 1870. For convenience of memorization, they are here rearranged and rephrased to form an alphabetic pattern. Note that some of these objections would find fault with virtually any evolutionary theory, whereas others, such as C, E, and F, apply specifically to Darwin's theory of evolution by natural selection, but would not so easily discredit a theistic theory or Lamarckian evolution. In fact, Bowler argues that neo-Lamarckian versions of evolutionary theory received strong support during this era when Darwin's own theory suffered discredit. Eventually, however, Darwinism gained broad acceptance despite the persistence of these standard objections.

A	age of the earth is too young for Darwin's timetable Lord Kelvin, in 1868, had argued on the basis of contemporary physics that the earth could not be older than a few million years, whereas evolutionary gradualism required millions of generations.
B	blending inheritance causes reversions to the common type Fleming Jenkin, who authored one of the strongest critiques against Darwin's theory, argued that diverse forms would always regress to the average form, rather than branch off into two distinct species.
C	chance cannot account for directional accumulations It is highly improbable, as Darwin himself admitted, that chance accumulations of mutations would eventually result in the development of something so complicated as the eye. Even less likely would be that the eye would evolve twice, in two parallel genealogies, one for squid and another for mammals, yet that is what contemporary evolutionists thought had occurred.
D	discontinuities in the fossil record The fossil record indicated several instances of new forms appearing quite suddenly, without an apparent ancestral forms preceding them. The postulation of one or perhaps several miraculous creations of new species seemed to fit the data better.
E	extra-adaptive parts have no natural selective explanation The existences of organs or other structures that serve no apparent purpose for the survival of the individual or the propagation of its offspring could not be attributed to natural selection. It would seem, therefore, that factors other than "the survival of the fittest" had contributed to the anatomical and physiological features of species.
F	failure of natural selection to add; it can only weed out A theory of natural selection might possibly account for the extinction of unfit species, but it could not explain how novel features would arise to fashion newer, fitter species.

Creation-Evolution: Synthesis or Antithesis?

It’s one thing to *say* the Bible can be harmonized with evolutionary theory; it’s quite another to *do* it.

	The Biblical Creation Record	Evolutionary Theory
The Basic Sequence of Bio-Physical Development	<ol style="list-style-type: none"> 1. Earth 2. Light 3. Plants 4. Sun, Moon, Stars 	<ol style="list-style-type: none"> 1. Light 2. Sun, Moon, Stars 3. Earth 4. Plants
Details concerning the Origin of the Earth	<ol style="list-style-type: none"> 1. From God 2. Initially covered with water 3. Oceans preceded land 	<ol style="list-style-type: none"> 1. From the Sun 2. Initial molten elements 3. Land preceded oceans
The Basic Sequence of Biological Development	<ol style="list-style-type: none"> 1. Land Plants 2. Birds 3. Marine Organisms, including Whales 4. Land Reptiles and Mammals 	<ol style="list-style-type: none"> 1. Marine Organisms 2. Land Plants 3. Land Reptiles 4. Birds and Land Mammals 5. Whales
Details concerning the Origin of Life	<ol style="list-style-type: none"> 1. Macroscopic organisms 2. Earliest plants flowered/seeded 3. Male and female animals were among the earliest animals. 	<ol style="list-style-type: none"> 1. Microscopic, single-cell organisms 2. Non-flowering plants preceded flowering plants by eons. 3. Earliest animals were asexual.
Details concerning Human Origins	<ol style="list-style-type: none"> 1. The first man came from the ground. 2. The first woman came from the first man. 3. Early man was a vegetarian gardener; eating meat came generations later. 4. Man is a little lower than angels. 5. God assigned man to have stewardship over nature. 6. Adam could speak proficiently the day he was created; other languages emerged suddenly at Babel. 	<ol style="list-style-type: none"> 1. The first woman came from an ape-like ancestor. 2. The first man came from the first woman. 3. Early man was a carnivorous hunter; farming developed much later. 4. Man is a little higher than apes. 5. Man is a product of nature, and thus is responsible to Mother Earth. 6. Language evolved slowly.
History of Clothing	<ol style="list-style-type: none"> 1. Shame 2. Clothing 3. Cold Weather 	<ol style="list-style-type: none"> 1. Cold Weather 2. Clothing 3. Shame
Two Global Catastrophes	<ol style="list-style-type: none"> 1. The Noachian Deluge 2. Judgment Day 	<ol style="list-style-type: none"> 1. Solar Cooling (due to Entropy) 2. Global Warming Theory
Death	<ol style="list-style-type: none"> 1. Unnatural 2. Resulting from Human Sin 	<ol style="list-style-type: none"> 1. Natural 2. Preceding Human Existence
Dinosaurs	Lived contemporaneously with early humans.	Lived and then went extinct millions of years before the first humans evolved.
Human Population	<ol style="list-style-type: none"> 1. Underpopulation: Millions struggle with fertility problems. 2. Life spans have shrunk 10-fold since the Flood, and modern medicine has <i>barely</i> helped. 	<ol style="list-style-type: none"> 1. Overpopulation; <i>Homo sapiens</i> are like a “cancer” destroying the biosphere. 2. Life spans have dramatically increased as a result of modern medicine.

	Using Science When Teaching about God’s Wonderful Creation	Misusing Science When Teaching <i>against</i> God’s Wonderful Creation
Moral Science (Ethics, Psychology, Anthropology)	Natural Law 1. God created humans. 2. God inscribed the objective distinction between good and evil in human consciences, and people can recognize this in nature’s design. 3. People are morally responsible to both God and their neighbors.	Moral Skepticism – <i>take your pick</i> : 1. Relativism : Each culture invents its own morality. 2. Subjectivism : Each individual invents his or her own morality. 3. Nihilism : There are no standards of morality; terms such as “good” and “evil” are nonsensical.
Mathematical Sciences (Mathematics, Geometry)	1. Though God’s thinking is higher than human thinking, God blesses humans to understand aspects of His creation through mathematics and geometry. 2. Human investigations into mathematical laws of nature and geometrical patterns in nature offer a glimpse of divine intelligence. (The “laws” of science that humans “discover” may not be strictly correct; nevertheless, they have a significant degree of correspondence to God’s creation.)	<i>Two alternative tendencies</i> : 1. Mathematics and geometry are social constructs, invented by particular human cultures without having any objective bearing on reality. 2. Mathematics and geometry are the most objective of all human sciences, and they disprove many claims made in the Bible, such as that Noah fit all the animals in the ark or that Christ’s body and blood are present in the Eucharist.
Physical Sciences (Astronomy, Geology, Physics, Chemistry)	1. Several thousand years ago, God created the sun, moon, and stars for giving light and timing the seasons. 2. God created the earth in such a way as to be especially suited for human habitation. 3. Through physical laws, God daily and richly preserves what He created (Providence). 4. The earth has experienced at least one great catastrophe, apparently resulting in the sudden fossilization of many animals.	1. The sun, moon, and stars evolved from the Big Bang, either without any god, or with some sort of divine guidance. 2. The earth is one planet among many, where life evolved, either by chance or through divine guidance. 3. The laws of physics and chemistry resulted from the conditions that precipitated the Big Bang. 4. The fossil record reveals millions of generations during which animals evolved from simple to complex.
Life Sciences (Biology, Ecology, Genetics, Medicine)	1. God created all living forms according to their kinds. 2. Organisms exhibit divine design. 3. God designated humans to exercise dominion over His creation as stewards accountable to Him. The “natural state” involves the domestication of nature by humans. 4. God blesses children with variations as well as resemblances to their parents through genetics, and God desires that husbands and wives love one another with a marital embrace that is open to God’s procreative blessing of children.	1. All living things evolved from one or a few common ancestors over millions of generations. 2. Apparent designs result from natural selection’s filtering of random, heritable variations – possibly with divine guidance. 3. Humans are fundamentally the same as animals. The “natural state” is devoid of human technology. 4. Human evolution now permits humans to guide the future course of evolution through genetic reengineering and technologically assisted reproduction.
continued ...		

Source: Appendix A to Ryan C. MacPherson, “Using Science When Teaching about God’s Wonderful Creation,” presented to the Minnesota District Pastors’ Conference (WELS), Rochester, MN, April 17, 2007.

	Using Science When Teaching about God’s Wonderful Creation	Misusing Science When Teaching <i>against</i> God’s Wonderful Creation
Life Sciences, continued (Biology, Ecology, Genetics, Medicine)	<ol style="list-style-type: none"> God blesses humans with the ability to understand anatomy and physiology so that they can preserve and improve their health in order to prolong their time of grace. Pregnancy is a normal, healthy function of a woman’s body; contraception circumvents God’s design of both the one-flesh union and the marital estate for which it was created. God begins each new human life – body and soul – on His own schedule, not ours. Science indicates that by the time of conception a new individual has a unique bodily existence, with his or her own DNA. The process of begetting new life deserves great respect throughout its procreative totality. Medicine oversteps its proper scope when attempting to determine a moment prior to which destructive intervention would be permissible. Sodomy violates human anatomy and physiology, and poses severe immunological risks to participants, their offspring, and the wider public. 	<ol style="list-style-type: none"> Medical science is an evolutionary adaptation enabling humans to increase individuals’ longevity and the survival of the species. Pregnancy is an illness whereby a woman’s uterus becomes the unwilling host of a parasitic fetus; contraception is recommended for prevention. Even in its late stages, this illness can be treated by evacuation of the uterine contents. Pregnancy begins when the embryo implants in the uterus, <i>ca.</i> 14 days after conception. The pro-life community has no legitimate claim prior to implantation, so embryos may be harvested for stem cell research prior to implantation. Since even a mature fetus lacks autonomy while in the prenatal state, late-term, partial-birth abortion remains an ethical option for treating the illness known as pregnancy. Sodomy is a healthy form of sexual experimentation among young people and a physiologically normal activity for adults, particularly those with genetic predispositions for it.
Social Sciences (Political Science, Sociology, Anthropology, Psychology, History)	<ol style="list-style-type: none"> God created humans with inalienable rights to life, liberty (especially liberty of conscience), and property. A husband and wife establish a family through marriage and build it through the procreation of offspring. Governments properly exist as extensions of parenthood for the purpose of protecting the natural rights of citizens through foreign defense and domestic justice. God guides human history for the service of the church. Texts have genuine meanings inscribed by their authors, available to their intended audiences, and discernable by historical-grammatical scholarship. Sound scholarship results in the discovery of the author’s original intention. 	<ol style="list-style-type: none"> Governments create rights by granting citizens privileged protections, whether to life, liberty, and property, or to “privacy” (abortion, sodomy, etc.) and social entitlements. Societies create families by defining marriage and distributing children in schools and daycare centers. Parents serve primarily as agents of the government in providing for the upbringing of future generations. Humans determine their own destinies by their own choices. Texts have no genuine meanings, but are constructed, deconstructed, and reconstructed repeatedly by their communities, which scholars appropriately scrutinize through higher criticism and various postmodern methods of analysis.
Theological Science (Dogmatics, Systematics, etc.)	Biblical theology is the only “science,” if by that term one means the attainment of certainly true knowledge.	Theology properly concerns itself only with values, not with facts, and never should constrain the human sciences.

Apologetics in One Sentence

Each of the following one-sentence defenses of biblical creation is intended to serve the purpose of 1 Pt 3:15 (“always be prepared to give an answer”) by steering the conversation away from debate and toward Holy Scripture, the true basis of “the hope that you have” (v. 15).

To Christians Who Struggle against the Biblical Doctrine of Creation:

1. If the New Testament makes about 70 distinct references to Genesis 1-11 as a legitimate historical account that provides a necessary foundation for a proper understanding of human nature and God’s relation to humankind, then by what authority could a Christian today claim anything different?

(Invite your friend to read the following verses with you: Mt 19:4; 19:5,6; 23:35; 24:37-39; Mk 10:6; 10:7-9; 13:19; Lk 3:34-36; 3:36-38; 11:51; 17:27; Jn 1:1-3; 1:10; 8:44; Ac 14:15; 17:24; 17:26; Ro 1:20; 5:12; 5:14-19; 8:20-22; 1 Co 6:16; 11:3; 11:7; 11:8; 11:9; 15:21-22; 15:38-39; 15:45; 15:47-49; 2 Co 4:6; 11:3; Eph 3:9; 5:30,31; Col 1:16; 3:10; 1 Tm 2:13; 2:14; 4:3-4; Heb 1:10; 2:7,8; 4:4; 4:10; 11:3; 11:4; 11:5; 11:7; 12:24; Ja 3:9; 1 Pt 3:20; 2 Pt 2:5; 3:4,5; 3:6; 1 Jn 3:8; 3:12; Jude 11; 14; Rev 2:7; 3:14; 4:11; 10:6; 12:9; 14:7; 20:2; 21:1; 21:4; 22:2; 22:3; 22:14.)

2. I understand that you think you have a biblical basis for interpreting the “days” of Gen 1 as long eons of time, based on the fact that 2 Pt 3:8 states that “with the Lord a day is like a thousand years, and a thousand years are like a day,” but wouldn’t you agree with me that there is major contextual difference between Gen 1 and 2 Pt 3?

(Invite your friend to read the two chapters with you, noting that Gen 1 presents itself as an account of origins, whereas 2 Pt 3 comforts believers with the news that Christ will return soon—“a day” — even if it seems like a long time to wait—“a thousand years.”)

3. I recognize that many theologians during the past century or two have suggested that one can bring Gen 1 into harmony with evolution through a “theistic evolution” compromise involving either a “gap” of time between vs. 2 and 3 or else a “day-age” interpretation of the whole chapter, but have you ever noticed how radically the *sequences* of purported events differ between evolutionary theory and the biblical record, regardless of their *durations*?

(Share “Creation-Evolution: Synthesis or Antithesis?” with your friend. See p. 27 of this packet.)

4. I’ll readily admit that evolutionary theory is “more scientific” in the sense that it happens to be favored in the “scientific community” these days, but that’s an unreliable, *relativistic* standard of truth that 250 years ago would have had us believing in phlogiston instead of oxygen for chemistry, in blood-letting instead of “drink plenty of fluids and rest” for medicine, and in several other now-rejected ideas, all of which once had the support of the scientific community precisely because they claimed the evidence supported their view!

(Ask your friend to acknowledge that scientific consensus changes, but that Heb 13:8 teaches that “Jesus Christ is the same yesterday, today, and always.” Then invite your friend to look up Jn 1:1-3 and Col 1:16 to see that Jesus himself is the Creator, together with the other Persons of the Holy Trinity. Welcome your friend to explore Jesus’ teachings concerning creation, marriage, the fall into sin, the first murder, and the flood—all of which refer back to the early chapters of Genesis as a reliable history of human origins (Mt 19:4-6; 23:35; 24:37-39; Mk 10:6-9; 13:19; Lk 11:51; 17:27; Jn 8:44).

5. My real concern isn’t about how old you think the earth is or how exactly we all came into being, but rather how it is that God through Christ saved us both from sin, death, and the devil—and Scripture is clear that this redemption process is a “new creation” rooted very much in the original creation and fall as recorded in Gen 1-3.

(Pursue some thought-provoking, Scripture-searching, heart-revealing questions with your friend. For example: If death preceded human origins and human sin, as evolutionary theory would have it, then is death really the “wages of sin” that Ro 6:23 calls it? What, in the context of evolution, does it really mean for Christ to deliver us from death, when death is regarded as beneficial—a weeding out inferior life forms?)

6. It seems to me that you are trying to “improve” upon the biblical account of creation by mixing in today’s theories of evolution, but as a Bible-believing Christian, what do you think could possibly make God’s Word more complete, more correct, or more compelling?

(Discuss with your friend what the Bible teaches about the sufficiency, inerrancy, and power of the Scriptures, inspired by and used as a means of grace by the Holy Spirit. Consider verses such as Ps 119:105; Mt 22:43; Jn 5:39; 10:35; Ac 10:43; 17:11; Ro 1:16; 3:2; 3:4; 10:17; 2 Co 10:5; Eph 2:20; Col 2:8; 2 Tm 3:16-17; Heb 4:12; 10:15; 2 Pt 1:21; 3:15-16; Rev. 22:18-19. Recall the humble faith of Martin Luther College professor Martin Sponholz: “We are not defenders of God’s Word. God’s Word defends us.” *Separate from His Word: A Christian Commentary on the History of Science* [New Ulm, MN: MLC Printshop, 1995], chap. 23.)

To Non-Christians Who Struggle against the Biblical Doctrine of Creation:

7. I understand that you prefer evolution over creation since you think evolution is based on observational evidenced and creation is based on faith in what we cannot see, but I wonder how it is that you reject “In the beginning, God created the heavens and the earth” in favor of this textbook statement: “The earth, the sun, and indeed everything in the entire universe once was a tiny collection of matter and energy smaller than the period at the end of this sentence, and then it expanded into the Big Bang.”

(Ps 14:1 teaches that “the fool says in his heart, ‘There is no God.’” Even apart from Scripture, by natural revelation alone, one can recognize that it is foolish to dismiss by naturalistic presupposition the biblical creation record in favor of the Big Bang. Perhaps you can bring this truth to light for your friend by inquiring why, exactly, he or she believes that everything in the entire universe used to be smaller than a period?)

8. I understand that you prefer science over religion, since you think that science is based on observational evidence and that religion is based on faith in what we cannot see, but have

you ever considered these two facts: a) no one has ever seen an electron—it’s a theoretical entity accepted because it helps us explain other things that we can see; and, b) thousands of ancient manuscripts attest that Jesus Christ was publicly executed in plain view of many witnesses and that hundreds of people later claimed to see him alive, many of whom willingly faced brutal torture and horrid execution themselves because they refused to deny that he had risen from the dead?

(Discuss both facts with your friend. Acknowledge that just because no one has ever seen an electron does not mean electrons don’t exist. Scientists have good reasons to suppose they exist, since the theory of electrons helps to explain so many chemical phenomena. Hmm, just because God cannot be observed today does not mean He doesn’t exist. Suggest to your friend that perhaps Christian theology has at least as much warrant as the theory of electrons. After all, both ideas manage to explain a good deal of what we can observe. As for the second fact mentioned above, not only does the NT have far more early manuscript copies than any other ancient text, such as Homer’s *Iliad* or the works of Plato and Aristotle, but several of its key events, including the account of Christ’s resurrection, are reported also in external sources, such as the works of Josephus, a Jewish historian who had no bias in favor of Christianity. Invite your friend to explore with you an even more remarkable truth: dozens of specific events from the life, death, and resurrection of Christ directly fulfilled OT prophecies. This amazing coherence of Scripture makes the NT’s affirmations of Gen 1-11 all the more compelling.)

To Anyone Who Misuses Science to Attack the Biblical Doctrine of Creation:

9. Do you realize that many historians and philosophers of science, regardless of their views on the creation-evolution debate, agree with Harvard-trained historian of science Thomas Kuhn who wrote that textbook-based training for scientists is “a narrow and rigid education, probably more so than any other except perhaps in orthodox theology” and that “science students accept theories on the authority of teacher and text, not because of evidence”?

(Consult Thomas Kuhn, *The Structure of Scientific Revolutions*, 3d ed. [Chicago: University of Chicago Press, 1996], 80, 166, and the surrounding context. Talk with your friend about the implications of Kuhn’s statements, which likely are confirmed by your friend’s own experience in high school science courses. Recall, for example, that when the chemistry experiment yielded the “wrong” color fluid, students lost credit, rather than being celebrated as discoverers of a new phenomenon. According to Kuhn’s account of scientific paradigms, such “tunnel-visioning” narrowly focuses even experienced scientists around an expected range of outcomes, leading them to discount alternative results as spurious. In other words, perhaps scientists are not so immune to the charges they often make against theologians about being controlled by presuppositions. The question then becomes, Which presuppositions ought we to prefer? St. Paul advises in 2 Co 10:5 that “we demolish arguments and every pretension that sets itself up against the knowledge of God, and we take captive every thought and make it obedient to Christ.” Recall that Christ and Paul dealt with creation and early history on quite a number of occasions: Mt 19:4; 19:5,6; 23:35; 24:37-39; Mk 10:6; 10:7-9; 13:19; Lk 3:34-36; 3:36-38; 11:51; 17:27; Jn 1:1-3; 1:10; 8:44; Ac 14:15; 17:24; 17:26; Ro 1:20; 5:12; 5:14-19; 8:20-22; 1 Co 6:16; 11:3; 11:7; 11:8; 11:9; 15:21-22; 15:38-39; 15:45; 15:47-49; 2 Co 4:6; 11:3; Eph 3:9; 5:30,31; Col 1:16; 3:10; 1 Tm 2:13; 2:14; 4:3-4.)

10. I understand that you think evolutionary theory has just as much scientific support as the Copernican theory, and that you see biblical creationism as being just as unfounded as the Roman Catholic Church's opposition to Galileo, and I'm even willing to agree with you about this comparison, but only if you'll join me in considering all of the evidence, such as the broad consensus among scholars (none of whom have any bias favoring biblical creationism) that the Roman Catholic Church had a compelling scientific case by the standards of Galileo's day, and that even now physicists and astronomers must admit, in the wake of Einstein's theory of relativity, that the Copernican hypothesis is not known, nor can it ever be known, to provide a physically correct portrayal of the universe.

(Consult Michael J. Crowe, *Theories of the World from Antiquity to the Copernican Revolution*, 2d ed., rev. [New York: Dover, 2001] and Ryan C. MacPherson, "The Church and Science through the Ages: Seven Key Questions from the History of Science," *Here We Stand: A Confessional Christian Study of Worldviews*, edited by Curtis A. Jahn [Milwaukee: Northwestern Publishing House, in press]. Offer your friend a willingness to acknowledge not only the scientific strengths of Copernicanism and Darwinism, but also the scientific weaknesses of each, and request, in exchange, your friend's fair-minded appraisal of not only the scientific weaknesses of earth-centered astronomy and creationism, but also the scientific strengths of both. Note that science necessarily remains uncertain and subject to revision. With respect to astronomy, Aristotle's and Ptolemy's views are deeply flawed, but Tycho Brahe's alternative hypothesis from the late 1500s, which has been revived and refined in the 1900s, creatively calls for an earth-centered universe that avoids the pitfalls encountered by Aristotle and Ptolemy. The point, of course, is not that Tycho Brahe was correct, but rather that scientists have difficulty ever settling the question of whose theory is correct. The consensus changes, due to new evidence, new ideas, and new personalities, to name just a few factors. From a broad historical perspective, Copernicanism is no more stable than its predecessors, nor is it at all obvious that Darwinism is more stable than various theories of creationism that previously held strong scientific consensus. Intelligent people desiring ultimate answers to these perplexing issues must learn to look elsewhere, beyond science. Look to Scripture, and invite your friend to do the same.)

Recommended Resources

It is assumed that WELS pastors already are familiar with standard NPH resources, such as the People’s Bible and the People’s Bible Teaching Series. Following are other resources that may be helpful in preparing Bible studies or developing sermon illustrations.

Answers in Genesis. *www.answersingenesis.org*.

Founded by popular creationist speaker Ken Ham, Answers in Genesis publishes a monthly magazine, a research journal, and numerous books, plus operates the Creation Museum and regularly updates this website, which classifies articles both topically and by academic level. Articles posted here tend to be more carefully written than those appearing on other creationist websites. Answers in Genesis emphasizes that just because an argument has a conclusion favorable to Scripture does not mean that the premises in that argument are reliable (<http://www.answersingenesis.org/get-answers/topic/arguments-we-dont-use>). The website includes useful lists of common myths concerning creation (<http://www.answersingenesis.org/get-answers/top-ten/myths-about-creation>) and evolution (<http://www.answersingenesis.org/get-answers/top-ten/evolution-myths>).

CreationWiki: Encyclopedia of Creation Science. 2004-2010. *www.creationwiki.org*.

Founded by the Northwest Creation Network, this Wikipedia-like resource publishes articles written and revised by registered online users under an editorial policy favoring a young-earth biblical creation perspective.

Crowe, Michael J. *Theories of the World from Antiquity to the Copernican Revolution*. 2d ed., rev. New York: Dover, 2001.

Crowe fair-mindedly demonstrates both the strengths and the weaknesses of both geocentric and heliocentric astronomical models, tracing the history of each viewpoint. Along the way, he teaches many lessons concerning the philosophy of science, explaining that scientific controversies seldom can be settled by simple appeals to the evidence.

Hausvater Project, The. *www.hausvater.org*.

Promoting a confessional Lutheran vision for family, church, and society, this website includes resources exploring the implications of Genesis 1:27—“male and female He created them.” Topics include the roles of men and women in the home, the congregation, and the civic order, as well as recent controversies concerning homosexuality and same-sex “marriage.”

Kuhn, Thomas. *The Structure of Scientific Revolutions*. 3d ed. Chicago: University of Chicago Press, 1996.

One of the most influential twentieth-century contributions to intellectual history, this book introduces the concept of “paradigm shift” which has subsequently been applied to many domains other than Kuhn’s focus, namely, the natural sciences. Kuhn argues that tacit presuppositions so profoundly shape the selection and interpretation of data that no scientific theory is ever proven or disproved simply by observations; rather, the community of scientists reach consensus through appeal to a variety of epistemic virtues as shaped by the sociology of the scientific community itself.

Larson, Edward J. *Summer for the Gods: The Scopes Trial and America's Continuing Debate over Science and Religion*. New York: Basic Books, 1997.

This Pulitzer-prize winning account of the famous Tennessee "monkey" trial of 1925 reveals cultural complexities shaping this conflict between "fundamentalists" (not all of whom were young-earth creationists) and "evolutionists" (not all of whom were devoid of political motives).

Luther, Martin. *Lectures on Genesis, Chapters 1-5*. In *Luther's Works*, vol. 1. Edited by Jarislav Pelikan. St. Louis: Concordia Publishing House, 1958.

Luther's discussion of Genesis 1-2 well illustrates how the eyes of Christian faith view the creation narrative. He consistently permits faith a "magisterial role" while limiting reason to a "ministerial role" in matters of Christian theology.

Lutheran Science Institute. <http://lutheranscience.org>.

Founded by WELS laymen in the 1970s, LSI publishes a journal and updates a website featuring scientific news that conforms to the Bible's account of creation and/or discredits Darwinian evolution and Big Bang cosmogony.

MacPherson, Ryan C. (Personal website.) www.ryanmacpherson.com.

My personal website contains summaries and in some cases full-text reproductions of several of my publications and presentations. See especially "A Lutheran View of Science," "The Church and Science through the Ages," "On the Antiquity of the Earth," "Isaiah Offers Comfort from God the Creator," "The Life-Giving Gospel Is Active at Conception," and "Creation Theories." (Use the website's "Search" feature to locate these titles once you access the website.)

Menuge, Angus J. L., ed. *Reading God's World: The Scientific Vocation*. St. Louis: Concordia Publishing House, 2004.

This book includes a helpful chapter by WLC professor Paul Boehlke entitled "The Christian as Biologist," as well as many other insightful commentaries on the roles of Christians in science.

Morris, Henry. *Biblical Creationism: What Each Book of the Bible Teaches about Creation and the Flood*. Green Forest, AR: Master Books, 2000).

Morris gleans from each book of the Bible direct and indirect affirmations of God's work as Creator. He also provides a sampling of similar references from the Apocrypha, Pseudepigrapha, and the works of Josephus. This book thus serves as a useful reference for discerning the importance of creation to the whole of Christian doctrine. He argues compellingly that "creationism is a biblical doctrine [taught throughout Scripture], not just a Genesis story" (213).

Morris, Henry M. *History of Modern Creationism*. 2d ed. Santee, CA: Institute for Creation Research, 1993.

An "insider" account of twentieth-century creation science authored by the founder of the Institute for Creation Research. Serves as a good companion to Numbers (see below).

National Academy of Sciences. *Teaching about Evolution and the Nature of Science*. Washington, DC: National Academy Press, 1998.

This pedagogical guide from one of the nation's most revered scientific organizations promotes the teaching of evolution, excludes creation theories from its definition of "science," and suggests that so long as religion focuses on values and leaves the facts to science, there can be harmony between the two domains. See also Safarti's critique, below.

Numbers, Ronald L. *The Creationists: The Evolution of Scientific Creationism.* Berkeley: University of California Press, 1992.

A well-researched history written with sensitivity by a former young-earth creationist and Seventh Day Adventist who, during his college years, became an agnostic evolutionist. Numbers is one of the most respected historians of science and religion in America. His book includes several references to prominent Lutheran theologians.

Patterson, Roger. *Evolution Exposed: Your Evolution Answer Book for the Classroom.* Hebron, KY: Answers in Genesis, 2006.

Analyzing quotations from leading high school biology textbooks, Patterson demonstrates the faulty reason and misuse of evidence involved in what passes for science education. The book cross-references additional resources available at the Answers in Genesis website (see above).

Safarti, Jonathan. *Refuting Evolution: A Handbook for Students, Parents, and Teachers Countering the Latest Arguments for Evolution.* Forward by Ken Ham. Brisbane, Australia: Answers in Genesis, 1999.

Safarti critiques *Teaching about Evolution and the Nature of Science*, a National Academy of Sciences handbook promoting evolutionism. He rightly points out that many of the core claims made in that book lack evidential support, both in terms of the sources cited by the NAS as well as the broader scientific literature that Safarti examines.

Sanford, J. C. *Genetic Entropy and the Mystery of the Genome.* 3d ed. Waterloo, NY: FMS Publications, 2008.

Written by a widely published population geneticist who has taught at Cornell University for over 25 years, this study demonstrates the extreme unlikelihood that the modern synthesis of evolutionary theory (genetic mutations plus natural selection) can account for the evolution from simple to complex. Rather than evolving, humans are devolving through a process of genetic degeneration akin to entropy in physics.

Sponholz, Martin P. *Separate from His Word: A Christian Commentary on the History of Science.* Rev. printing. New Ulm, MN: MLC Printshop, 1995.

Prof. Sponholz's textbook on the history of science provides numerous examples illustrating proper and improper approaches to relating Christian faith and scientific explorations. In chapter 23, he provides specific suggestions for applying these insights when instructing children in Lutheran elementary schools.

Stein, Ben, Richard Dawkins, Christopher Hitchens, Richard Sternberg, and Mark Souder. *Expelled: No Intelligence Allowed.* DVD. Directed by Nathan Frankowski. Premise Studios, 2008.

This 90-minute documentary features interviews of leading scientists concerning their views of the intelligent design movement. Narrator/interviewer Ben Stein frames the debate in terms of freedom of speech, arguing that opponents to intelligent design have ideological motives that are incompatible with the free inquiry characteristic of science. Particularly revealing are the bold admissions, by Oxford University atheist Richard Dawkins, that a presupposition against God's existence motivates his hostility toward intelligent design and other alternatives to Darwinism.

Woodward, Thomas. *Doubts about Darwin: A History of Intelligent Design.* Foreword by Phillip E. Johnson. Grand Rapids, MI: Baker Books, 2003.

Woodward provides a *rhetorical history* of the intelligent design movement, demonstrating how sound-bites concerning "science," "creationism," "intelligent design," "religion," "biblical literalism" and so forth have shaped the intense debate.