

Coming to Peace With Science

Bridging the Worlds Between Faith and Biology

By Darrel R. Falk

Reading and Study Guide Companion

Purpose of this Guide

The issues discussed in Darrel Falk's book *Coming to Peace with Science* continue to be on the front page of American culture, where they have been ever since Darwin's *Origin of Species* arrived from England 150 years ago. To speak knowledgeably with friends and neighbors on this controversial topic, you must be conversant with a broad range of topics, from Biblical interpretation and the nature of science to ongoing scientific investigation and the latest in theological studies. Falk's book is an excellent and sensitive introduction to these issues.

This *Reading and Study Guide* assists readers by providing study questions from the entire book. The questions are organized so as to emphasize three different perspectives:

- (1) the content, so the reader will gather the most pertinent information;
- (2) the intended meaning from the author, so the reader will know what use the author is making of the information. This book, like many, is an *argument* and the information is presented in the context of an ongoing argument.
- (3) the reaction of the reader. We consider it important to engage this material at a personal level, accepting or rejecting the conclusions, and understanding how the material relates to the reader's personal worldview.

To make life easier, a location in the text is given for each question. Readers may find it useful to write a brief response to the questions as an aid to study.

Effective reading of a book like this, or any book for that matter, can be done at three levels.

- (1) The first and most obvious level is **literal**. At the literal level, the reader gets information directly from the text. The reader is *reading the lines* and asking "What information does the author provide?"
- (2) At the second, or **interpretative**, level the reader *synthesizes* information, perceiving relationships among pieces of information and making inferences. The reader is '*reading between the lines*,' so to speak, and asking "What does the author *mean*?"
- (3) At the third, or **applied**, level the reader uses information to develop opinions and new ideas. The reader is '*reading beyond the lines*,' asking "How is this relevant to me? Do I agree with the author?"

We want to assist in these three levels of reading. To start, we have marked items in the *Reading and Study Guide* for the Foreword, Preface, and Chapter One with **L** for *literal*, **I** for *interpretative*, and **A** for *applied*. With practice, you can determine the level for effectively using the remainder of the Guide. As you do this, you should become more comfortable with the difference between facts, arguments, and conclusions.

Discussion Questions

Discussion questions are provided for each chapter. These questions synthesize the broader aspects of the issues raised in the chapter and are ideal for exploring the related topics in a group setting, or even in an animated conversation with yourself!

Foreword

- 1- (L) Who wrote the foreword to Falk's book and what is his significance? What is his religious commitment?

(A) If you don't know, how can you find out?

Preface

1. (A) After reading the preface, do you think the Falk is a Christian?

Why or why not?

(I) Does Falk consider himself a Christian?
2. (L) What is the purpose of science as stated on p. 13?

(A) Does your understanding of science agree with Falk's statement?

If not, how does it differ?
3. (L) On p. 14 what problem is described in the discussion of creation that is fundamental to the thesis of the book?

As Falk presents it, what other problems result from this one basic problem?
4. (L) What role does Falk give to *metaphors* in the development of the chasm that he sees between the world of faith and the world of scientific reasoning (pp. 14-15)?
5. (L) On pp. 15-16 what does Falk say can serve as the bridge over the chasm?

Chapter 1: Science and Religion, Trying to Live in Two Worlds at Once

1. (L) From Chapter 1, describe Falk's early struggles with his understanding of Scripture as he studied the scientific investigations into the age of the earth and the development of human beings.

(A) Have you experienced similar struggles?
2. (L) On pp. 24-26 what does Falk say is the "real reason" for the story he tells in this book?
3. (L) What illustration is used on pp. 26-31 to suggest that every verse in the Bible should not be read literally, that is, the words should not be understood in their direct bare meaning?

How do you understand the significance of the illustration?

(A) How do you respond to Galileo's statement "it is not possible for Sacred Scripture ever to deceive or err... nevertheless some of its interpreters and expositors can sometimes err, and in various ways."

(A) Do you think that these ideas should impact the way you read and understand The Bible?

4. (A) How do the following two statements (p. 28) make you think about the way you read the Bible: "The Bible is written in such a way as . . . to be accommodated to the incapacities of the common man;" and "The Bible's purpose is to lead us to God, and it must not be used as a textbook of scientific statements about the nature of the universe"?

5. (I) How do you respond to Falk's statement on the message of Galileo and Kepler on p. 29: "God speaks to us in Scripture in a manner that will lead us to seek Him. God also speaks to us through the realm of nature, and in this realm we learn about His creation?"

6. (L) On p. 31 what approach is offered for understanding Scripture?

(A) Do you read the Bible this way?

7. (L) On pp. 31-32 what are the two ways that Genesis 1 may be understood?

(A) How do you respond to these ways of scriptural interpretation?

8. (I) What point is Falk making with his quotations from Augustine, John Calvin, and John Wesley on pp. 34-35?

(A) Do you agree?

(A) Why do you think these three theologians were selected for quotation?

9. (L) On p. 36 what is suggested as the most serious problem that arises "from reducing the Bible to a scientific textbook"?

(A) Do you consider this matter a serious problem?

10. (L) What is the outline of the book, as presented on pp. 36-38?

11. (A) How do you respond to the last paragraph on p. 38?

Have you used the "faith spectacles"?

Discussion Questions for Chapter 1

1- According to Falk, what is the fundamental problem in the science-and-religion dialog over origins: understanding science or understanding the Bible?

What is your own personal opinion?

- 2- Until the time of Galileo, the Bible was believed to support the view that the sun moves around the earth, the earth is stationary, and the earth is at the center of the universe. What is the significance of the fact that obtaining the correct view on these issues came from science, not from a literal reading of Scripture?

How does this information suggest that we should read Genesis 1-2?

How does the way you read the Bible influence the way you understand our natural world?

How does the way we (the church) read the Bible influence the way we (the church) try to understand our natural world?

- 3- Imagine that you are reading the Bible before 1500 AD when ‘everyone’ believed that the earth was the center of the universe and was stationary. How would you have read and understood Scripture?

Now imagine that you are reading the Bible after Copernicus and Galileo. How would you react to scientific statements that the earth is not the center of the universe and moves around the sun?

- 4- What does it mean to take the Bible literally?

Does anyone actually read the Bible literally?

(Consider Ps. 104:5; Ps. 18; I Chron. 16:30; Ecc. 1:5; Lam. 5:20; Is. 41:10; Job 38:22; Prov. 12:20; Matt. 23:14; II Cor. 3:3) Do you actually read each of these passages literally?

- 5- What is the significance of the quotations from Augustine, John Calvin, and John Wesley for the way we should approach reading the Bible?

What does Falk say we should emphasize as we read the Bible?

What do you find to be the central messages of the Bible?

How should recognition of the central messages affect your view of the debate over creation?

- 6- In your experience, how does God speak through nature?

Does God say something different in nature than God says in scripture?

How can understanding nature help you understand Scripture?

Chapter 2: The Creation and Fall, Exploring the Meaning of Scripture

- 1- In the opening sentence of Chapter 2 (p. 39), what does Falk say we are “paying far too little attention to” as we usually discuss creation?

Where is your attention?

- 2- On p. 41 what does Falk say is the saddest part of this story?

How do you relate to this?

- 3- On p. 42 what is the focus of God's Word in the creation story?

How is that focus revealed in John 1:1,4?

What is the end of the creation story according to Falk (p. 43)?

Have you ever considered this view of the creation story?

- 4- How do you respond to C. S. Lewis' use of the word *myth* in the quotation on p. 44?

How do you use the word myth?

What does it mean to you?

- 5- How does Falk's comparison of the 'Garden of Eden temptation story' to 'Christ's temptation in the wilderness' shed light on the creation story in Genesis (pp. 45-48)?

- 6- Have you experienced what is described on pp. 48-52 as "God Seeking Us Out" and also "Living in the Midst of Good and Evil"?

What are your personal experiences?

- 7- Do you identify with any of the poetry recorded on pp. 54 and 55? In what ways?

Do you think of poetry as a way to convey truth?

- 8- Do you relate to Falk's telling the creation story in terms of the new creation and his own journey? How?

- 9- What are the two events that Falk describes as "nudges back" on his journey (pp. 56-57)?

Have you had experiences like Falk did?

- 10- On p. 59 why does Falk we should not give undue attention to "the aspect of Christian apologetics that tries to prove by scientific arguments that there is a Designer"?

How much space in the whole Bible is devoted to details of creation compared to the full length of the Bible?

How would you describe the full story of creation?

- 11- Can you make a qualitative comparison of the emphasis given in the Bible to the creation story and other aspects such as advent, Easter, redemption, commandments, Holy Spirit, prayer, love of neighbor, and so forth?

What significance does such a comparison have in the issues raised in Falk's book?

Discussion Questions for Chapter 2

- 1- It might be said that the way Falk views the Bible *elevates* Scripture. Do you find that to be the case for you? Why or why not?
- 2- Describe the way you discuss the full story of creation. What is the focus of the Bible in the creation story as revealed in both Genesis and John?
- 3- In your own personal spiritual journey, what is the significance of the creation story in view of Falk's way of telling the creation story (in terms of the new creation)?
- 4- Why do you think the evangelical Christian community is so enamored of using science to prove that God is a designer, like an engineer?

Discuss your reaction to Falk's argument that we should not give undue attention to "the aspect of Christian apologetics that tries to prove by scientific arguments that there is a Designer"?

- 5- Consider the amount of space in the Bible that is devoted to the details of creation. What is the significance of this fact in the context of the creation debate?

Chapter 3: Putting Creation into a Time Frame

- 1- On p. 62, what was the way people in the 16th century came to know whether the meaning of Ps 104: 5, "the earth is fixed", was literal or figurative?

Did they come to know by Scripture or by science?

How does this statement bear on the question: "How long has it been since God created?"

- 2- What is the first experimental method that is described in Chapter 2 for dating the age of the earth (p. 62)?

What are the three specific isotopic systems he discusses?

How many independent isotopic systems are used by geologists to estimate the age of the earth (p. 69)?

- 3- According to the information given on p. 69, what is the age of the earth based on radiometric data?

How does that estimate compare to your idea of the age of the earth before reading this chapter?

What do you think about the data from radiometric methods?

- 4- On pp. 69-74, what are the three arguments against radiometric dating given by proponents of a young earth?

What are Falk's responses to these arguments?

- 5- What three additional methods are introduced on pp. 73-74 to support the old-earth position?
- 6- Why is it significant that all the methods for estimating the age of the earth are independent of each other?

How do you react to the totality of the scientific information on the age of the earth?

- 7- What was Karl Barth's position on the nature of creation (p. 75)?

What was the basis for his position?

In what ways did Barth's position differ from that of liberal theologians of his time?

- 8- Give a brief description of the Big Bang Theory (pp. 75-76).

Does this view of creation agree with your understanding of what Scripture says about creation?

- 9- The Big Bang Theory, the Doppler effect, radiometric dating, along with tree ring counting, ice core data, and lake sediment data are completely independent methods of dating various things. The story they tell is consistent. What is the significance of this fact for the age of the earth and the universe?

What age do astrophysicists estimate for the universe, based on the speed of light and the Doppler Effect (pp. 76-79)?

- 10- According to Falk, what position must be true if one takes "a strictly literal reading of the first chapter of Genesis" (p. 81)?

Is this result important in the creation debate?

- 11- What is your response to the statement (p. 81): "Given the overwhelming amount of evidence, it is appropriate for Christians to accept that science is revealing details of God's activity. By closing our minds to this form of revelation, we are missing the opportunity to peer into the workings of the God we love so much."

- 12- How do you respond to the point made in the last two paragraphs of Chapter 3, especially “Surely the Lord is in this place and I am not aware of it”?

Discussion Questions for Chapter 3

- 1- Before reading Chapter 2, what was your opinion of the validity of radiometric dating?

What is your opinion now?

If your opinion has changed, what are the reasons?

- 2- Before reading Chapter 2, were you aware of the wide range of scientific methods that are used to date the age of the earth **and** that they agree with each other and with the ‘old-earth model’ (radiometric dating, tree ring counting, ice core data, lake sediment data, the speed of light combined with the Doppler Effect, along with the microwave data related to the big bang theory)?

What is the significance of this to you and your reading of Scripture?

- 3- How do you react to Falk’s statement that, “to remain true to a strictly literal reading of the first chapter of Genesis, one has to take the position that the scientific disciplines geology, nuclear physics, and astronomy are wrong. Not one of them can be correct”?

Do you find it credible that all these natural sciences can be so completely wrong?

Chapter 4: The Fossil Record

- 1- Give a brief description of fossilization as described by Falk.

How is understanding fossilization useful in understanding the time of appearance of organisms on earth (p. 83)?

- 2- What is the general pattern of the complexity of organisms in the fossil record from about one billion years ago to the present (pp. 83-86)? (Use the Figure on p. 85 as an illustration.)

How does Falk use the analogy of “God’s file cabinet” to discuss the fossil record (p. 85)?

- 3- What point is made in relation to the interpretation of Genesis 1 in the quotation of Psalms 18, referring to “God having nostrils that breathe out smoke and fire”?

Can you think of other language in the Scripture that you think is meant to be taken figuratively (p. 86)?

- 4- What are the three possibilities for the meaning of the fossil record given by Falk (pp. 86-88)?

Which view do you favor?

How has your view changed as you read this book?

5- When does the fossil record indicate cells first appeared on earth (p. 88)?

How does this 'sudden appearance' relate to God's work in creation (p. 89)?

How does Falk describe God's role in the appearance of cells on the earth (p. 91)?

6- How does Falk use the painting of the Mona Lisa to illustrate his point (pp. 91-92)?

7- What evidence is suggested as a caution for accepting possibility two (pp. 93-97)?

8- Based on the sudden appearance of modern prototypes (pp. 97-125), "What can we learn about the nature of God's activity from studying the Bible" (p. 101)?

9- What point is made in the description of the appearance of whales in the fossil record (pp. 105-111)?

What is the mystery associated with whales (p. 106)?

What is the "important lesson for us" (p. 109)?

10- What is the significance of the finding of transitional forms from fish with fins to land animals with limbs (pp. 114-115)?

How does Falk use this and related information to support possibility three (p. 115)?

How does Falk amplify the nature of God's role in creation from the point of view of possibility three as contrasted to possibility two (p. 115)?

11- How does the development of the ear relate to the discussion of the mammals (pp. 116-120)?

12- How have bird fossils found since 1990 illuminated the development of life (p. 124)?

13- What two reasons explain why more transitional forms have not been found (pp. 125-130)?

How is the 'photography of travel pictures' used as a supporting illustration (p. 129)?

14- In the discussion of possibility three (pp. 130-132), how does Falk answer the question, "Why don't we see gradual change today?"

What are examples of gradual change today (p. 130)?

15- How does Falk help us appreciate the length of time since the creation of the earth (pp. 132-134)?

16- What special privilege has God given to us that no other creature has (p. 134)?

Discussion Questions for Chapter 4

1- Consider the three views (possibilities) Falk presents for understanding the meaning of the fossil record (p. 87). Which one seems most reasonable to you **after** reading this chapter?

Do you have a different opinion now than before you read Chapter Four? Why or why not?

2- What is the importance of the finding of transitional fossil forms to your thinking about creation?

3- Summarize the impact of this chapter on your thinking.

What impacts you most: the facts of the fossil record, Falk's interpretation of Scripture in regard to creation, your previous background, something else?

Chapter 5: Beyond the Fossil Record, Looking at the Geographical Distribution of Life's Diversity

1- Why does Falk examine the geographical distribution of God's creation on the earth (p.136)?

2- What is the reason for the physical differences among races (pp. 136-137)?

3- What point does Falk illustrate with examples from the Hawaiian Islands (pp. 137-140)?

4- How is a lake an example of geographical isolation like an island (pp. 140-145)?

What other examples does Falk give for isolation (pp. 145-148)?

5- Have you experienced God's activity in your life in the way Falk describes it in the illustration of the ferry boat pilot (pp. 149-151)?

How does this relate to God's action in creation?

6- What specific examples illustrate the effects of long term isolation of species that result from continental drift (pp. 151-160)?

7- What examples illustrate the consequences of 'fitting into a niche' (pp. 160-168)?

8- In the conclusion to this chapter, what does Falk say is the "purpose of all this"?

Where did we get the view of "God as the engineer-designer of species one by one" (p. 168)?

Discussion Questions for Chapter 5

- 1- Summarize the geographical distribution of God's creation across the earth.

Discuss the significance of geographical distribution for the creation debate.

In your opinion does this information shed light on the three possibilities (for fossil record interpretation) that Falk presents in Chapter 4?

- 2- Discuss Falk's reflections on his spiritual journey, like the illustration of the ferry-boat pilot.

How does this idea relate to God's activity in creation?

- 3- Do you think of God as the engineer-designer of the universe?

Where do you think you got this concept?

If not an engineer-designer, how do you think of God?

What images come to mind?

How does Falk discuss this issue?

Chapter 6: Tracing Lineage by tracking Genes

- 1- On p. 169 Falk cites Augustine on interpretation of Scripture. How does this statement relate to the way you read Scripture?

How does it relate to the creation debate?

- 2- What does it mean to say that Scripture is open to more than one interpretation on some issues (pp. 169-170)?

How do you respond to the quotation from J. I. Packer?

What role do theology and world-view play in this discussion?

- 3- Summarize information on the age of the earth derived from nuclear physics, geology, astrophysics, the fossil record, and geographical distribution of species (pp. 170-171).

How do you respond when Falk says, "The goal in this is that we, alongside all of God's creation, will be able to look heavenward in a more meaningful manner as we bow in worship to Abba, Father, the source of our being." (p. 171)?

Is that your response?

- 4- What is "the manual of life" (p. 171)?"

State the role of proteins in living systems (pp. 171-175)?

5- How does Falk describe the instructions contained in a gene (pp.175-178)?

What is meant by the message or plan of a gene?

6- Describe the errors that occur in the copying of genes (p. 178-182).

What does Falk say about that?

7- What does it mean to “follow marked genes through the eons of time” (p.183)?

What is the role of gene duplications (pp. 182-185)?

What examples are given?

Is this a general phenomenon?

8- What are pseudogenes (pp. 185-188)?

Describe how Falk uses the ‘photo album’ illustration.

What example is given (p. 188)? What is the role of the ‘stretch of gibberish’ (not to be confused with “Giberson”) in a gene (p. 189)?

What example is used on p. 191?

How are pseudogenes and retroposons similar and different in how they originate and get passed on to offspring (pp. 185-192)?

9- What is Falk’s perspective on the inheritance of marked genes (pp.194-196)?

What example is used on p. 191?

What additional example is given for old world monkeys and apes?

10- What illustration indicates the information contained in the mouse genome (footnote, p. 194)?

11- What is the significance of the arrangement of genes on chromosomes (pp. 196-198)?

How is the ‘family photo album’ used to illustrate this point?

12- How does Falk use Augustine’s quotation to counter the objection that Christian theology stands or falls on a sudden creation (pp. 198-202)?

How does Falk deal with the question of death before Adam and Eve sinned?

What is the interpretation given for Genesis 3:19?

13- What kind of death does Falk say is described in Romans 5:12 (p. 200)?

What is the relevance of this issue to the creation debate?

How is Roman 8:20-22 handled in this regard (p. 201)?

What does Falk say is a dangerous foundation for a whole theology (p. 201)?

14- What does Falk describe as “an unorthodox way of doing Christian theology” (p. 202)?

Discussion Questions for Chapter 6

1- What scientific evidence can be given for possibility one, sudden creation on a very young earth?

What about possibility three?

After reading this part of the book, what is your opinion on the validity of the three possibilities?

2- What insights into Scripture interpretation do the quotations from Augustine and Packer provide (pp. 169-170)?

How do you respond to Augustine’s warning: “Christianity should not allow itself to be put in a position whereby it stands or falls on a particular interpretation that is not fundamental to the faith.” (pp. 169-170)?

Will you change the way you understand Scripture as a result of reading Falk’s book?

3- Falk presents information based on genes to support the concept of gradual development of new forms of life. Summarize the evidence based on genes given by Falk.

How does the gene information support any of the three possibilities?

What is your opinion at this point?

4- Discuss Falk’s statement, “The goal in this is that we, alongside all of God’s creation, will be able to look heavenward in a more meaningful manner as we bow in worship to Abba, Father, the source of our being.” (p. 171)?

Do you respond in that manner?

- 5- What is the significance of Falk's summary of the age of the earth as derived from nuclear physics, geology, astrophysics, the fossil record, and geographical distribution of species (pp. 170-171)?

Do you have a basis for not accepting this information on the age of the earth?

- 6- What does Falk describe as "an unorthodox way of doing Christian theology" (p. 202)?

Chapter 7: Coming to Peace with Biology

- 1- What issue does Falk say his students often raise as he introduces them to the concept of gradual creation (p. 203)?

Were you familiar with this argument?

- 2- Give a brief statement of the second law of thermodynamics stated (p. 203).

What is the significance of the second law to the discussion of the creation?

If you have heard this discussed before, is the actual statement of the second law the way that you have heard it stated?

- 3- What does Falk say is often falsely given as an exception to the second law (p. 204)?

What are the examples given for the increased order found in the world?

- 4- How does the second law of thermodynamics relate to Christian apologetics (pp.206-208)?

- 5- What is the second objection students often raise about gradual creation (p. 209)?

Are you satisfied with his response?

Why or why not?

- 6- What does Falk say is *not* the reason for writing this book (p. 209)?

What is your personal reaction?

- 7- What issues are raised concerning scientific respectability (pp. 209-215)?

How do you respond to these issues?

- 8- How does the 'daily meteorological report' illustrate scientific respectability (p. 215)?

- 9- How do you respond to Falk's "two complementary accounts of human creation." (pp. 216-224)?

What do you think of his statement “this chapter speaks of the creation act as a series of commands from God. It does not give specifics about the processes that occurred”? (p. 216)?

What is the significance of the two accounts of creation in Genesis (Chapters 1 and 2)?

10- How do you respond to Falk’s question: “Is it possible that its message is so true that the only way its truth can be comprehended is if it is told in an almost poetic manner?” (p. 218)?

Do you know of any other examples?

11- What is the significance of the question: “Is this event a story to make the essence of God and His relationship to humanity clear, or is it actual real-time history?” (p. 219)?

12- What is the meaning of C. S. Lewis’s quote (footnote 3, p. 219) in terms of the creation debate and understanding Scripture?

13- Comment on Falk’s argument that we do not all have to believe the same (pp. 222-224)?

14- When Falk says “when God’s Word shows God reaching down to the ground to make Adam, it is telling us that God created humanity from the dust of the earth, but not necessarily in an instant”, what is its importance in understanding the question, “Are the scientific data related to creation of humans different from for other organisms” (pp. 224 – 225)?

15- What is the meaning of “created in the image of God” (p. 225-226)?

How do you respond to the approach in this book?

16- What does Falk say is the “real purpose of this book” (p.229)?

Why does he say “One of the biggest deterrents was my impression that I could never become part of an evangelical fellowship because of my belief in gradual creation” (p. 230)?

17- What does Falk say is his prayer (p. 232)?

18- What does Falk say is the bottom line in his book and also the bottom line in the Bible (p.234)?

Do you agree with his comments about division in the church?

What does Falk say clearly will “prevent us from being the body of Christ to a hurting world (p. 234)”?

19- What will bring “peace at last” (p. 234)?

Discussion Questions for Chapter 7

- 1- Falk presents information based on genes that supports the concept of gradual development of new forms of life. Summarize the evidence based on genes given by Falk.

How does the gene information support any of the three possibilities?

What is your opinion at this point?

- 2- Discuss the way Falk deals with the theological questions which some people say are raised by accepting 'gradual creation on an old earth' rather than 'sudden creation on a young earth'.

What theological questions come to your mind by accepting gradual creation rather than sudden creation?

- 3- Falk speaks of "two complementary accounts of human creation" (pp. 216-224)." What do you think of his statement, "this chapter speaks of the creation act as a series of commands from God. It does not give specifics about the processes that occurred" (p. 216)?

What is the significance of the two accounts of creation in Genesis?

- 4- Discuss objections to gradual creation based on the second law of thermodynamics.

Discuss objections to gradual creation based on the 'slippery slope' of figurative interpretation of parts of Scripture.

How do you deal with the question of the "slippery slope"?

Can you think of issues in daily life that are similar to the "slippery slope" concerns over Biblical interpretation?

- 5- Do you find that the 'hot debate' over creation is arising primarily from theological or scientific issues?

What is the role of Scripture interpretation in this debate?

- 6- Are you at peace with science?

Why or why not?

If you are not at peace with science, what would it take for you to become at peace?

Discuss your feelings on this question.