


Study Guides for Faith & Science Integration

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Why Are We Compelled to Do Science? (Leader's Guide)

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Leader's Guide to

Why Are We Compelled to Do Science?

A Study of The Penultimate Curiosity: How science swims in the slipstream of ultimate questions

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How to Use This Material?

This study of the way the relationship between science and faith has been understood and interpreted historically using Roger Wagner's and Andrew Brigg's *Penultimate Questions* consists of five modules. Each module contains two sections. The first section presents a set of Reading and Reflection questions that are to be completed before each meeting and are meant to help the participant wrestle with the concepts introduced in that week's chapters. The second section consists of two (or more) Discussion questions, which will be written by the participants and the leader as they read. Both sets of questions are meant to foster discussion, but your group should by no means limit itself to the questions contained in these sections.

This study is intended for **informal, small group** discussion, such as that of a Bible study or small group. The themes presented in each submodule may be unpacked on its own, but it is the hope of the authors that the entire study may be useful to the interested reader (leader and participant alike). The study is also aimed toward **high school students, college students, and post-college adults** with an interest in how science and the Christian faith interact.

As you read, it is our hope that you will come across (and come up with) questions which challenge you, both in understanding your personal faith and in understanding science. In these questions, you will have the opportunity to grow through asking and answering these questions: Why has the church historically believed in *this* answer or *that* answer? How might you be challenged to defend your answer?

Planning and Preparing for a Session

The material assumes that each session will last for about 30-45 minutes. It also assumes that each participant will have read the assigned chapter(s) and considered the Reading and Reflection questions ahead of time.

It must also be noted that the provided discussion questions are intended as a guide for your discussion, but you should by no means restrict your discussion to these questions. Try to keep your group's discussion relevant to the general themes addressed in the module, but be flexible.

Equipped for Service

This "Leader's Guide" is meant to **equip leaders** of these small group discussions, and thus the following pages are more detailed than the average participant may judge necessary for complex discussion. This has been done in the hope that you, as the leader, may more easily facilitate and moderate discussion amongst your peers in the small group. Your small group may be made up of the generation that initiates change in how the common Christian comes to understand these questions and answer – in the service of your peers, do not underestimate your own significance as a leader or co-leader.

Who are the authors of *The Penultimate Curiosity*?

Rodger Wagner is an artist who's work often centers on Christian imagery. Currently, he teaches courses at the Ruskin School of Art in Oxford. Wagner studied English at the University of Oxford, and later studied at the Royal Academy School of Art. Andrew Briggs serves as a professor of nanomaterials at the University of Oxford. He is a greatly respected physicist, and a deeply thoughtful Christian. Briggs studied physics at the University of Oxford as an undergraduate, earned a Ph.D. in physics at the Cavendish Laboratory, and studied theology at Cambridge.

These two men have quite different areas of expertise, which has allowed them to have nuanced and well-rounded discussions about life's big questions. In spite of their impressive qualifications, their dialogues are easily accessible, even those who are not well-versed in science or art.

Table of Contents

How to Use This Material?	2
Planning and Preparing for a Session	3
Equipped for Service	3
Who are the authors of The Penultimate Curiosity?	4
Module 1: In the Beginning and God-Driven Science	8
Reading and Reflection	8
“Prologue”	8
“The First Men”	8
“Tentasali”	9
“Watauinaiwa”	9
“The Garden of Eden Moment”	9
“Primate Parallels”	10
“Horizons of Curiosity”	10
“Ultimate Curiosity”	10
“The Lions of Miletus”	10
“The Move to Athens”	11
“Through the Academy Door”	11
Discussion	11
Module 2: Encounters in Alexandria and The Long Argument	12
Reading and Reflection	12
“The Two Students”	12
“The Divided City”	12
“Industrious Jack”	12
“The Creation of the World”	13
“The House of Wisdom”	13
“The Dream of Aristotle”	13
“Al-Ghazali’s Pilgrimage”	14
“A Tale of Two Cities”	14
“Imposed Silence”	14
“Experimental Science”	14
“The Universal Law”	15
Discussion	15

Module 3: The Open Book of Heaven and Priests of Nature	16
Reading and Reflection	16
“Against Aristotle”	16
“Free Philosophizing”	16
“The Freedom of Intellect”	16
“Simplicius Reborn”	17
“The Creation”	17
“A New Era”	17
“A Lutheran Astrologer”	17
“The Experimental Philosophy”	18
“The Oxonian Sparkles”	18
Discussion	18
Module 4: The Ocean of Truth and Voyages of Discovery	19
Reading and Reflection	19
“Le Grand Newton”	19
“The Beautiful Systems”	19
“Mathematical Theologies”	19
“The Coast of Infinity”	19
“Two Journeys”	20
“The Mystery of Mysteries”	20
“The Creed of Science”	20
Discussion	21
Module 5: In the Beginning II and Through the Laboratory Door	22
Reading and Reflection	22
“The Literary Inquest”	22
“Breaking the Seals”	22
“The Intellectual Picklock”	22
“In a Strange Land”	23
“By the Waters of Babylon”	23
“Adam and Adapa”	23
“Ariadne’s Thread”	24
“Science in a Time of Cholera”	24
“A Visit to the Museum”	24

“Experiments of Thought”	25
“The Unity of Nature”	25
“The Works of the Lord”	25
“Epilogue”	26
Discussion.....	26
Bibliography	26

Module 1: In the Beginning and God-Driven Science

Covers prologue, Parts I & II

Reading and Reflection

“Prologue”

1. What do you think about the significance of the entryways of the Cavendish Laboratory and the Oxford University Museum of Natural History? Are such symbols appropriate on buildings used for science?

“The First Men”

1. Do modern biases influence the way we interpret and recount history? If so, what are the implications of this bias for how we understand the truthfulness of our historic accounts?

Suggested answer: It does seem as though we naturally interpret historic events is tinted by our modern understanding of the world. Acknowledging our biases can help us be more critical when reading or learning, and this may improve the accuracy of our histories.

“Tentasali”

1. Similar to the previous section’s question: do cultural biases influence the way we interpret the practices of other cultures? If so, is that wrong?

Suggested answer: Yes, our biases do shape how we interpret the actions of others. It is not necessarily wrong—we need some sort of framework for understanding the world, after all—but we must be careful to leave our understandings of a culture open to change.

“Watauinaiwa”

1. How does a culture develop a religion? Is there any truth in religions such as the one practiced by the /Xam San group?

Follow-up questions: Are humans naturally inclined toward practicing religion? Are the spirits referenced by the /Xam San real? If so, are they from God or from Satan? Can we know? Does it matter?

“The Garden of Eden Moment”

1. What do you think about the dating system used by the archeologists referenced in this chapter?

“Primate Parallels”

1. What do you think of the idea of “primate spirituality”?

“Horizons of Curiosity”

1. What do you think of the developmental similarities between chimpanzees (and other primates) and humankind? What sort of mental differences do you think exist between humankind and other primates?

“Ultimate Curiosity”

1. Does Brigg and Wagner’s description of ultimate questions creating a slipstream of curiosity make sense to you? Do you find the imagery helpful?

“The Lions of Miletus”

1. What do you think of Heraclitus’s idea that Truth underlies all traditional cults and that human laws sprig from a divine one?

“The Move to Athens”

1. What do you think of the suggestion that Socrates was a “Christian before Christ”?

“Through the Academy Door”

1. What do you think of the ideas ancient Greeks had about the relationships between mathematics, religion, and truth? Do you think that there elements of truth to these ideas?

Discussion

In addition to thinking about the above reading questions, please write two questions of your own regarding the chapters you read for today.

1.

2.

Module 2: Encounters in Alexandria and The Long Argument

Covers Parts III & IV

Reading and Reflection

“The Two Students”

1. Where did the conflict lie for fifth and sixth century Abrahamic religions and pagans (as represented by John Philoponus and Simplicius)? What difference of opinion did they debate?

Suggested answer: Each religious tradition understood the nature of the world differently. The Judeo-Christian tradition taught that God is distinct from His creation, but Greek pagan tradition taught that the cosmos was eternal.

“The Divided City”

1. How would you answer the questions posed by Tertullian (109)?

“Industrious Jack”

1. What do you think of the idea that Christianity is a religion “for the multitude and vulgar people (117)? How would you respond to Proclus or Simplicius?

“The Creation of the World”

1. What do you think of Cosmas Indicopleustes and his ideas about cosmology?

2. What do you think of Philopous and his ideas?

“The House of Wisdom”

1. Do you think that seeking knowledge is a religious practice?

“The Dream of Aristotle”

1. What parallels between Muslim discussions about reasoned versus traditional faith (et cetera) and modern or Christian discussions about science and faith? Do you think that Christians can learn from how Muslims have approached the topic?

“Al-Ghazali’s Pilgrimage”

1. What do you think of Maimonides’s idea that the purpose of theological language is “not to define God” (148)? What is the purpose of theology, in your mind?

“A Tale of Two Cities”

1. Is it necessarily bad to “harmonize” the ideas and teachings of non-Christians with Christian theology (e.g. as was done with Aristotle)? Explain.

“Imposed Silence”

1. How do you reconcile the God-decreed violence toward foreign nations with God’s command to love our neighbours and welcome the alien?

“Experimental Science”

1. What are the two kinds of experiences Bacon describes?

Suggested answer: internal experience and external experience.

“The Universal Law”

1. What do you think of the images of “God the geometer creating the world”?

Discussion

In addition to thinking about the above reading questions, please write two questions of your own regarding the chapters you read for today.

- 1.

- 2.

Module 3: The Open Book of Heaven and Priests of Nature

Covers Parts V & VI

Reading and Reflection

“Against Aristotle”

1. In what ways do you think that the Alexandrian philosophers were “pseudo-philosophers and pseudo-Christians” (185)?

Suggested answer: They may misinterpret classical philosophers to fit with Christian ideals and misinterpret Christian Scriptures or doctrine to fit with classical philosophical ideas.

“Free Philosophizing”

1. What do you think of the statement, “Holy writ was given to teach us the path to salvation but it was not necessary ‘to believe that the same God who has furnished us with senses, language, and intellect would want us to bypass their use...’”(193)? What are the strengths of this idea? And what are its weaknesses?

“The Freedom of Intellect”

1. Do you agree with Sarsi that human intellect should be somehow restricted (e.g. “enslaved to that of some other man”) or with Galileo (199)?

“Simplicius Reborn”

1. Who are the three men in Galileo’s *A Dialogue*? Very briefly describe each.

Suggested answer: Sagredo, an intelligent laymen the other two characters try to persuade to their side, Salviati, who represented Galileo’s arguments, and Simplicius, who represents the opposing arguments.

“The Creation”

1. How would you answer the question, “Should penultimate questions about the nature of the physical world fall under the jurisdiction of the Church” (209)?

“A New Era”

1. What do you think of the play *The Virtuoso*? Do you agree with its caricature of scientists?

“A Lutheran Astrologer”

1. What do you think of Kepler’s assertion that authority has a place in theology, but not in philosophy (where reason should be the guide instead) (223)?

“The Experimental Philosophy”

1. What do you think of the idea, as described by Origen, that Scripture has three senses: literal, moral, and allegorical (231)? Is it a helpful idea? Is it true?

“The Oxonian Sparkles”

1. Do you agree with Boyle that an addiction to “experimental philosophy” can help one be a good Christian (248)?

Discussion

In addition to thinking about the above reading questions, please write two questions of your own regarding the chapters you read for today.

1.

2.

Module 4: The Ocean of Truth and Voyages of Discovery

Covers Parts VII & VIII

Reading and Reflection

“Le Grand Newton”

1. What do you think of Newton’s identity as both a “rationalist icon” and a “vehicle of divine revelation”? Is one depiction of him more accurate than the other? Are the two depictions compatible?

“The Beautiful Systems”

1. What kind of things do you think Newton believed could be determined about the character of God from “the appearance of things” (271)?

“Mathematical Theologies”

1. Is there a place for natural theology in modern Christianity? In what ways is natural theology useful? In what ways is it potentially dangerous?

“The Coast of Infinity”

1. Do you agree that humans have an “innate capacity to know that infinity exists” (279)? Why or why not?

2. Is religious revelation static? Is lack of change necessarily a bad thing? Why might the critique that religion is static whereas science is progressive seem like a bad thing for religion?

“Two Journeys”

1. We’ve encountered various scientists who experience intense delight in observing and studying the natural world. Can you recall a time when you delighted in nature? Describe it briefly. Why do you think humans tend to find such pleasure in observing Creation?

“The Mystery of Mysteries”

1. What do you think of Herschel’s description of Sharon Turner’s book, *The Sacred History of the World*? Is his derision warranted?

“The Creed of Science”

1. What do you think about the idea that God creates using “intermediate causes” (313)? How might we determine what are “intermediate causes” and what are directly divine causes? Is there a difference between what is divinely created and what is “naturally” created?

Discussion

In addition to thinking about the above reading questions, please write two questions of your own regarding the chapters you read for today.

1.

2.

Module 5: In the Beginning II and Through the Laboratory Door

Covers Parts IX, X, & XI

Reading and Reflection

“The Literary Inquest”

1. How would you respond to the question posed in the final paragraph of this section? How do we decide which interpretations of evidence are true and which are not, particularly when many interpretations seem equally plausible? Where does intellectual authority lie?

“Breaking the Seals”

No question for this section. Just enjoy the reading while you recover from the multitude of questions posed to you in the previous section...

“The Intellectual Picklock”

1. Curiosity seems to be a powerful motivator. The people described in this section (and throughout the book) were driven by their curiosity to discover and create and explore, and what they achieved is quite impressive. Is curiosity a good thing? Should it ever be restricted?

“In a Strange Land”

1. What do you make of *The Epic of Gilgamesh*? How does this story fit with similar stories found in the book of Genesis?

“By the Waters of Babylon”

1. Have you heard the idea that the early chapters of Genesis were written in response to Ancient Near East mythologies before? What do you think of this idea? Does it influence the way you think about Scripture?

“Adam and Adapa”

1. How do religions develop? Briefly describe the potential influence Babylonian religion had on the articulation of Judaism (as explained in this section).

Suggested Answer: In this section, the authors suggest that the Creation account and other stories in Genesis were written in such a way that they contrasted starkly with Babylonian religious tradition. The Hebrew stories tell of a God of very different character than Bel, among other things. Religions do not develop in isolation; religions respond to their historical and geographical context (pardon the slight anthropomorphism).

“Ariadne’s Thread”

1. What do you think of the proposition that the depiction of God and the universe found in Scripture helped humans understand the world in a way that inspired them to explore ultimate questions? Have Briggs and Wagner convinced you?

“Science in a Time of Cholera”

1. Does study of the natural world “encourage arrogance” (368)? Are people warier of science than of other disciplines? If they are, why might that be?

“A Visit to the Museum”

1. Do you agree with Wilberforce’s statement, “To oppose facts in the natural world because they seem to oppose Revelation, is... but another form of... lying for God” (375)? Why or why not? Do humans “lie for God” in other ways (as Wilberforce’s quote seems to imply)?

“Experiments of Thought”

1. Is it important to pursue truth, even if “absolute knowledge” is unattainable? (Is absolute knowledge unattainable?) Why or why not?

“The Unity of Nature”

1. Who were the Sandemanians? Speculate about what Faraday meant when he said that his Sandemanian faith motivated him to do science.

Suggested answer: A small denomination that is distinguished by its desire to conform with the practices of the early church, its emphasis on homogeneity of opinion amongst church members, a lack of central church authority, and its belief that faith was merely a matter of mental knowledge.

“The Works of the Lord”

1. Respond to the concluding quote from Maxwell. What relationship do *you* perceive between science and religion? Have your ideas about this relationship changed over time?

“Epilogue”

1. Can human thinking be trusted to give us a true picture of reality (426)? Does it matter?
2. What did you think of the book? Was it helpful? Was it informative? Did it support its primary argument adequately?

Discussion

In addition to thinking about the above reading questions, please write two questions of your own regarding the chapters you read for today.

1.

2.

Bibliography

Wagner, R. & Briggs, A. (2016). *The Penultimate Curiosity: How Science Swims in the Slipstream of Ultimate Questions*. Oxford: Oxford University Press.